

## 2022 ANNUAL FINANCIAL STATEMENT

## **CONTENTS**

4 Shareholders, Corporate Bodie	4	Shareholders,	Corporate	<b>Bodies</b>
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6	Structure	Report and	Organisation	Chart
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10	Reports from the Centers on the Center F	lighlights

- 12 Energy
- 14 Health & Bioresources
- 16 Digital Safety & Security
- 18 Vision, Automation & Control
- 20 Low-Emission Transport
- 22 Technology Experience
- 24 Innovation Systems & Policy
- 26 Seibersdorf Labor GmbH
- 27 Nuclear Engineering Seibersdorf GmbH

### 28 Business Performance 2022

- 28 Earnings Position
- 29 Expense Structure and Result
- 30 Incoming Orders
- 31 Order Level
- Work in Progress
- 33 Investments
- 33 Liquidity and Financial Position
- 34 Personnel

### 35 Report on Measures in Sustainability Management

### 38 Report on the Significant Risks and Uncertainties

- 38 Risk Management and Internal Control System
- 39 Risk Strategy
- 40 Risk Areas
- 43 Description of key features of the Internal

Control and Risk Management System –

Accounting process

### 44 Internal Audit Department

### 45 Forecast report / Performance Indicators

- 45 Strategic Development
- 46 Indicators for Scientific Success Measurement

### 47 Events after the Balance Sheet Date

### 49 Balance Sheets

- 50 Group Consolidated Balance Sheet
- 52 Group Consolidated Profit and Loss Statement

ANNUAL FINANCIAL STATEMENT 2022

SHAREHOLDERS SUPERVISORY BOARD / CORPORATE BODIES

## **SHAREHOLDERS**

## **CORPORATE BODIES**

#### REPUBLIC OF AUSTRIA

Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology [BMK]) with 50.46%

### ASSOCIATION FOR THE PROMOTION OF RESEARCH AND INNOVATION

(Federation of Austrian Industries) with 49.54%

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DI Dr. Matthias WEBER, MA

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STRUCTURE REPORT AND ORGANISATION CHART
STRUCTURE REPORT AND ORGANISATION CHART

## STRUCTURE REPORT AND ORGANISATION CHART

The reporting year 2022 marked the second year of the strategy period 2021–2023: "AIT Strategy 2021+ Research and Innovation for a Sustainable and Competitive Position in the Digital Age", which was developed to coincide with the second funding period of the Research Funding Act (FoFinaG).

According to this strategy, the organisational setup from 2022 onwards continues to show seven Centers. Changes compared to the previous year consisted solely of the closure of the Competence Unit HBS – Biomedical Systems of the Center for Health & Bioresources, which was implemented in 2021.

From the reporting year 2023 onwards, the Center for Innovation Systems & Policy will consist of two competence units, "Industrial & Innovation Dynamics" on the one hand and "Transformative Governance" on the other. This measure is a reaction to the increasing order volume as well as the diversification within the project portfolio in order to continue to meet the management requirements in the Center.

Another organisational change, which was started at the end of 2022 and will be implemented by the end of June 2023, is the gradual dismantling of the "Biosensor Technologies" topic. Some of the corresponding resources and ongoing projects can be transferred to the DPU (Danube Private University).

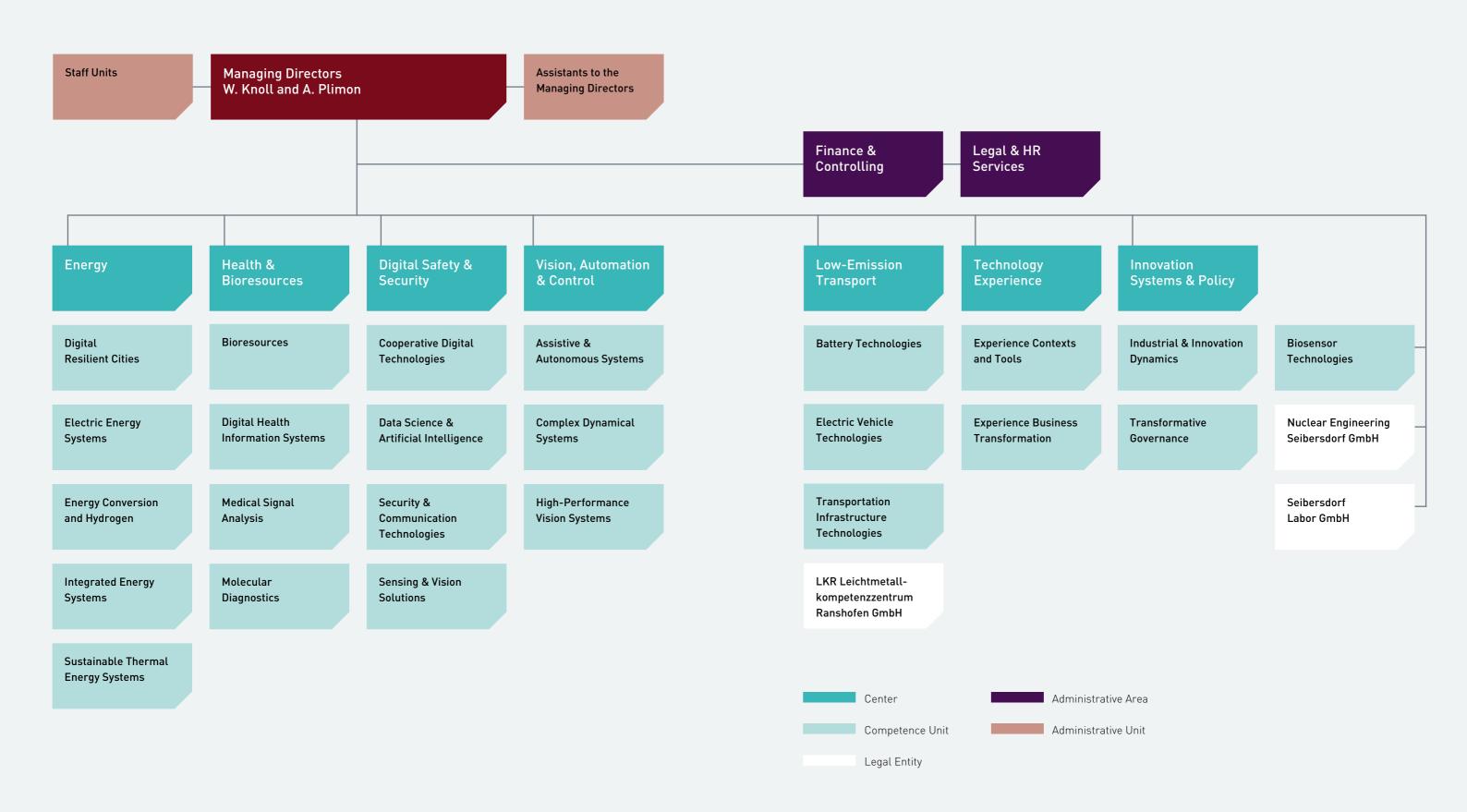
STRUCTURE REPORT AND ORGANISATION CHART

STRUCTURE REPORT AND ORGANISATION CHART

## AIT ORGANISATION CHART

January 2023





## REPORTS FROM THE CENTERS OVERVIEW OF THE CENTER HIGHLIGHTS

Central topics of the AIT include the energy transition, the mobility transition in urban and rural areas, the climate-neutral city and the transformation to an efficient, circular, and climate-neutral economy and society. Activities of all seven Centers around these overarching topics contribute to enabling the green and digital transformations. Innovative solutions are often developed across Centers and with partners from industry in order to tackle key challenges together.

The Center for Health & Bioresources is concerned with climate change, combined with increasing resource scarcity and a massive loss of biodiversity and soil quality, as well as with the steadily growing world population, whose society is getting increasingly older. The "One Health" concept considers aspects of the health of living beings and the environment together. The goal is, on the one hand, to replace our fossil fuel-based economy with efficient, resource-conserving and climate-neutral bio-based circular economies, and on the other hand, participatory, personalised, predictive and thus preventive health care. Digitisation plays a central role in implementing these new concepts.

The increased global use of digital technologies requires both responsible development processes and the design of appropriate framework conditions in order to prevent abuse and ensure compliance with ethical principles. The Center for Digital Safety and Security helps companies and organisations meet the ever-increasing demands of their increased use, especially with regard to the security of sensitive data and the use of secure data spaces. Gaia-X, whose Austrian hub is coordinated by AIT, strives to regain sovereignty over its own data in Europe.

The influence of geopolitical developments clearly shows in the agendas of research, technology and innovation policies. The increased need for transformative and forward-looking strategies for policy and industry is correspondingly reflected in the very high workload of the Center for Innovation

Systems & Policy. Its researchers are working, for example, on projects to accompany and further develop the European framework programme for research and innovation and on contributions for developing global low-carbon pathways and national net zero scenarios for the decarbonisation of energy-intensive industries.

For the Center for Energy, the focus on decarbonisation of industry and geopolitically driven price dynamics in the energy sector are key. In the New Energy for Industry (NEFI) innovation network, which is scientifically headed by AIT, the project landscape underwent significant further development in 2022 with the aim of decarbonising industry, for example in foundries (Green Foundry 4.0) or in the analysis of alternatives to natural gas. Furthermore, the service portfolio in the topic area of hydrogen and sector coupling will be expanded by a new lab, while the City Intelligence Lab will demonstrate the urban development practice of the future for digital, resilient cities.

Together with the Center for Energy, the Center for Technology Experience worked on a central issue of the energy transition: the social licence for automated demand-side management. Recommendations for the trust-building design of interfaces were formulated based on this.

Interface approaches are also being investigated to improve the cooperation of users with AI-based systems in industrial production in order to detect quality problems more quickly and take appropriate corrective action. The consideration of diversity in a wide range of projects can also be particularly highlighted, for instance in the development of methods for capturing (in)equality of opportunity in innovation sectors.

In addition to the pursuit of decarbonisation and rising energy prices, industry is confronted with challenges such as labour and skills shortages, supply bottlenecks and the demand for resource-efficient and sustainable production. The Center for Vision, Automation & Control supports companies with intelligent automation and digitisation solutions to meet these challenges. As part of the lighthouse project "Al-Enabled Automation", cross-Center research is being carried out on Al-based process automation for sustainable production, synergetic cooperation between humans and robot systems in automated assembly and disassembly, and the development of assistance and autonomy functions for automated work machines and commercial vehicles.

The Center for Low-Emission Transport in turn conducts basic new research into technologies for sustainable and efficient vehicles, components, and transport systems. The newly founded Competence Unit Battery Technologies is concerned with the materials of future battery technology, transferring these to processability for (semi-)industrial scales and placing a research focus on the development of solid-state batteries with its "Solid State Battery" Research Field. This demonstrates the Center's commitment to understanding electromobility in its entirety, from lightweight construction to the battery, the electric drivetrain, the auxiliary electrical consumers and the surrounding infrastructure. In addition to climate-friendly production for the batteries of the future, the Center is also working on more efficient production of forged aluminium components in order to significantly reduce CO<sub>2</sub> emissions during production and to increase road safety, particularly for non-motorised partici-

## REPORTS FROM THE CENTERS ENERGY

In 2022, the Center for Energy was able to implement important elements of its current strategy and thus substantially strengthen its strategic positioning on the market and in the relevant scientific communities. The visible anchoring of decarbonisation in the economic policy agenda and the current price dynamics in the energy sector are also reflected in the Center's extremely successful acquisition of contract research. Innovative projects with high quality and visibility were implemented with key customers from the energy industry, market design, infrastructure development (planning & operation) and technology integration in particular.

In the scientific field, attractive PhD programmes with renowned universities were successfully set up. A case in point: a doctoral programme in the topic area of Artificial Intelligence for energy system planning and operation was initiated with TU Delft under the leadership of Dr Jochen Cremer (co-director Delft AI Energy Lab) in mid-2022. Over the next five years, a total of six PhDs will develop cutting-edge methods and tools under the mutual supervision of AIT and TU Delft in order to significantly advance the transformation of the energy system and provide new types of tools for the energy industry. Together with Graz University of Technology, a novel PhD programme for the development of innovative hydrogen technologies with a focus on reversible high-temperature electrolysis will be launched in the summer semester of 2023.

This should accelerate the development of innovative and efficient technologies for the production of green hydrogen and further strengthen the collaboration between the two institutions. High-temperature electrolysis is a promising process, but still requires some research, particularly with regard to the materials used and its integration into industrial processes. These questions are to be addressed in four dissertations – two at AIT in Vienna and two at the Graz University of Technology – with a three-yearduration.

A key step in the further development of the Center's research infrastructure is the expansion of the experimental service portfolio in the topic area of hydrogen and sector coupling. With the AIT H2LAB, a test and development infrastructure for hydrogen and hybrid power plant technologies that is unique in Austria is to be realised at the Tech Campus Seibersdorf. For this purpose, multi-purpose test fields with supply containers for electrical supply, gas supply, and digital control interfaces will be set up. These test fields enable the evaluation of components and systems, especially from the areas of electrolysis, fuel cells, battery storage and power electronics. The integration of these technologies into the energy system will require, among other things, their system compatibility, reliability, and durability, as well as the appropriate training of skilled workers. The establishment of the AIT H2LAB will take place in several stages of expansion and on condition of future scalability. Technical planning, invitation to tender and important implementation steps can be expected in 2023.

In the topic area "Digital Resilient Cities", the Center for Energy impresses with international know-how for climate-resilient cities from planning to implementation. Following this holistic approach, the Center showed its wide range of services for public administration and business at the Smart City Expo Barcelona in November 2022. Furthermore, innovative projects such as "NetZeroCities" and the European Smart Cities flagship projects "Ruggedised" and "Scalable Cities" were presented. A special highlight was a demonstration of the urban development practice of the future as part of the City Intelligence Lab (CIL). International developers, municipalities, and planners were shown how resilient and performative cities can be designed with Artificial Intelligence, real-time urban design impact assessment, automated plan generation, data analytics, and visualisation.

#### Highlights in Portfolio Development

In the innovation network New Energy for Industry (NEFI), the project landscape with the objective of "decarbonisation of industry" could be significantly developed further under the scientific leadership of the Center, together with more than 125 partners from industry, research, and the public sector. In 2022, seven new projects were launched, six of them with AIT participation, and these contribute significantly to the visibility of the Center in the relevant stakeholder community. As part of the NEFI conference in October 2022, various project results were shown to a broad public and a professional discourse on innovation-relevant issues was initiated. A particularly important strategic project is "envloTcast (environmentally friendly casting)", which is scientifically headed by the Center for Energy. Here, the modern, sustainable concept of the Green Foundry 4.0 is being developed, demonstrating the interconnections both in terms of energy and information technology. The key technological and conceptual aspects are built, developed, and intensively tested in the Green Demo Foundry 4.0 at the AIT-LKR Ranshofen. This provides the industry with a test bed for testing the various technologies and methods, which in turn greatly simplifies the complex transition towards complete decarbonisation.

Another important NEFI project, "Greensteel", was launched together with voestalpine as partner in late 2022. The aim is to develop and demonstrate concepts and technologies that enable 100% decarbonisation of steel processing. The use of alternatives to natural gas (e.g. electricity, hydrogen, biogas, syn-fuels) and development concepts for their provision are being analysed. This also includes new efficient industrial furnaces and heat sources (burners, electric heaters) that run on 100% carbon neutral energy sources while at the same time ensuring high product quality standards. Selected concepts and technologies are tested and demonstrated at various voestalpine production locations. As part of various NEFI projects, it was also possible to develop the first use cases for the Virtual Industry Lab of the Center for Energy, which were presented by means of HoloLenses at various trade fairs and events. This includes planning support at location level, the model representation of plants (e.g. industrial belt dryers) incl. measurement data for monitoring and plant control.

In the area of contract research, a strategically important project was carried out with Salzburg AG in 2022. The objective of the commissioning was to take a long-term and holistic view of the heat supply in the State of Salzburg and to develop an optimised decarbonisation strategy for Salzburg AG based on this. The Center for Energy carried out the modelling of scenarios of the longer-term development up to 2050 to determine the optimal technology mix for the provision of heat for buildings and industry and evaluated from a techno-economic perspective.

Following the federal government's hydrogen strategy, Austria will push the development of electrolysis capacities for the production of renewable hydrogen in the future. However, according to current estimates, future demand will exceed the foreseeable production possibilities. Building on the Center's systemic competence, a well-founded study on the import possibilities for hydrogen from renewable energy sources, and its derivatives, to Austria was therefore prepared for the BMK (Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology).

In the area of mobility, a detailed analysis of visitor flows was performed for Tourismus Salzburg GmbH. The aim is to establish a visitor management system that ensures greater visitor and resident comfort. The aim is to manage tourism in such a way that the creation of value for Salzburg can continue to be strengthened, but the city as an economic and living space is not negatively affected. Special attention was paid to the complexity and interconnectedness of the individual interest groups, and the affected population was explicitly included in the planning process.

## REPORTS FROM THE CENTERS HEALTH & BIORESOURCES

Socially relevant issues that we will be increasingly confronted with in the future are a steadily growing world population combined with an ageing society on the one hand, and climate change combined with an increasing scarcity of resources and a massive loss of biodiversity and soil quality on the other. All of these are factors that can pose a lasting threat to our health, our environment, and thus our food. The Center for Health & Bioresources thus follows a "One Health" concept, in which aspects of the health of living beings and the health of the environment are no longer considered separately, but are instead pursued in a holistic approach.

In order to implement a sustainable "One Health" approach in our societies as well, we need to rethink our health systems, i.e. away from reactive health care that focuses on treating diseases towards active health care that is participatory, personalised, predictive and thus preventive. In addition, the current impacts of climate change on our environment and health have highlighted the need to replace our fossil fuel-based economy with efficient, resource-conserving and climate-neutral, bio-based circular economies. In both areas, digitisation is playing an increasingly important role when it comes to implementing these new concepts.

The Competence Units of the Center for Health & Bioresources are organised to address each of the above aspects, from the molecular, physiological through to the systemic level. Our goal is to establish the Center as a leading translational research partner for "One-Health", covering solutions from "Lab to Field to Fork" or "From Bench to Body to Bedside". Below you will find two major topics from two Competence Units that exemplify our activities in the areas of digitisation of the health sector and climate-smart agriculture.

### Highlights in Portfolio Development

## Climate-friendly & more sustainable agriculture through microorganisms

In order to meet the steadily increasing demand for food and feed, agriculture relies on the use of non-renewable fertilizers, which are very resource-intensive and energy-intensive in their production. Phosphate is a good example of this, as it is mined from non-renewable sources and is therefore considered a critical resource with limited availability. Another problem is the optimisation of fertiliser application so that the nutrients contained are available in time and in sufficient quantities to effectively support plant growth. Existing solutions have the disadvantage here that they often use poorly degradable components that harm the environment.

In this context, the Competence Unit Bioresources is working on alternative solutions to replace chemical fertilizers with climate and environmentally friendly biological fertilizers in the medium term. Particularly worth mentioning here is the EU project SUSFERT, in which, together with ten partners from science, SMEs and industry, more sustainable, multifunctional fertilizers for phosphorus and iron supply are being developed that fit into existing production processes and agricultural practices in the EU. This is done by combining bio-based and biodegradable fertilizer impregnations for controlled release, micro-organisms to increase nutrient availability, and the renewable phosphorus source struvite. The aim is to reduce the use of non-renewable phosphate by 40% with these novel fertilizers and to establish a microbial-based iron fertilization. As part of the SUSFERT project, the effectiveness of fertilizers for important crops (including maize, tomatoes and citrus fruits) is being studied, the economic potential and sustainability of the tested products is being assessed, and market launch is being prepared in compliance with applicable regulations. The particular role of the Center for Health & Bioresources is scientific coordination and the development and integration of selected microbial strains to improve phosphate and iron fertilization.

#### Artificial Intelligence revolutionises medical data analysis

Artificial Intelligence (AI) has become an increasingly important tool for the analysis of medical data in recent years. In the course of today's clinical day-to-day activities, ever larger amounts of data are generated, in particular where examinations are carried out over a long period of time. This happens, for example, in neurology in the course of epilepsy diagnosis or in the field of early diagnosis of neurodegenerative diseases. In the Medical Signal Analysis Competence Unit, we have focused on new AI technologies for the evaluation of medical data in recent years. For the development of such Al-based systems, large Deep Learning networks are being trained, e.g. via existing brain signals, whereby the AI algorithms learn to assign the findings (basic truths) produced by doctors to the corresponding curves in the brain signals. The new algorithms make it possible to detect pathological changes in the brain signal quickly and reliably. Through the use of these Deep Learning technologies, we have succeeded in significantly improving the recognition accuracy of our algorithms for analysing human brain signals in the encevis software we have developed and certified. encevis is already an integral part of automated EEG evaluation at various well-known manufacturers of EEG systems and enables hospitals to significantly accelerate the analysis of long-term EEGs.

Another focus area for deploying Artificial Intelligence is the early detection of neurodegenerative diseases. Our goal is to develop an EEG-based biomarker for the early detection of dementia, since EEG measurements are inexpensive, can be repeated many times and over a long period of time, and are therefore an ideal screening method for this neurodegenerative disease. For this purpose, we are developing AI-based algorithms to reliably distinguish between healthy and non-healthy individuals. Our work is being supported, among others, by the MINDCARE and BrainCheck projects. All our developments are carried out in accordance with the requirements of the EU Medical Device Regulation (MDR) and the requirements of the Federal Drug Administration (FDA) in order to be able to offer our certified solutions to customers and partners in both the EU and US markets.

## REPORTS FROM THE CENTERS DIGITAL SAFETY & SECURITY

The enormous dynamics triggered by the ongoing development and the constantly widening application scenarios of digital technologies with global effects are placing ever greater demands on companies, organisations, and our society as a whole.

Digital technologies require both conscious, responsible development processes and the design of appropriate frameworks for mastering new technologies in order to comply with ethical principles of our societies and to avoid misuse of new technologies as much as possible. This development is also driving demand for the central research topics of the Center for Digital Safety & Security (DSS): Cybersecurity, data encryption, highly available and secure software systems, data science and Artificial Intelligence, handling sensitive data such as personal and biometric data in a government context, and the use of innovative digital solutions for crisis and disaster management.

In 2022, the Center repeatedly demonstrated its global technology leadership in several key high-tech areas. The effective combination of scientific excellence with professional technology development competence and the successful positioning in international eco-systems are the primary reasons for this special success.

#### Highlights in Portfolio Development

In the field of cybersecurity (CS), the Center consolidated its international pioneering role with its recognition as the first and currently only official "Collaboration Centre for Information and Computer Security for Nuclear Security" by the International Atomic Energy Agency (IAEA). In this function, AIT, and thus Austria as a globally leading country, conducts training to ensure the highest level of cybersecurity for critical infrastructure operators. The training is carried out on the basis of the AIT Cyber Range (www.cyberrange.at),), one of the world's most modern digital training platforms, with which digital twins of IT infrastructures and digital control systems can be flexibly simulated. This platform has already positioned itself as the leading training platform for industry and network operators in Austria as well, thus making an important contribution to increasing resilience and hence the global competitiveness of Austria as a business location.

Thanks to this modern virtual training platform and its competences for digital solutions for cybersecurity and modern crisis and disaster management, the Center has been able to establish itself very successfully as the central platform operator for national exercises and simulation games for authorities, companies, and critical infrastructure operators. Together with the Competence Center Safe Austria (KSÖ), the largest national black-out simulation was designed and successfully implemented in 2022. The relevant national authorities as well as Austrian operators of critical infrastructures (energy, telecom, railways, health, finance, food, etc.) participated in this simulation, which was judged by all participants as a "best practice example" of a beneficial close collaboration between research, industry, and authorities on a national level.

Together with the Austrian security authorities, the Center was able to make a significant contribution for Austria as a digital location in the area of Data Science & Artificial Intelligence (DSAI) towards setting exemplary accents in the development of state-of-the-art solutions for the fight against fake news and disinformation. The national project led by the Center resulted in an explicit initiative (GADMO) with close cooperation between the German and Austrian press agencies and AIT as one of the important digital experts in this field.

As part of the industry-oriented research focus "Enabling Digital Technologies", the Center successfully expanded its positioning as a leading competence center when it comes to researching the next generation of 6G wireless technology. The Center has thus taken on an important pioneering role in Austria while also positioning itself internationally to provide important technological expertise for industry in Austria. Corresponding collaborations with key technology industry companies in Austria and international industry players bear witness to this success.

With its global know-how and technology leadership, as well as its established, highly professional technology development competence, the Center has successfully established itself as one of the most important EU technology providers in the field of quantum technologies in the research focus area of quantum communication and quantum encryption. In order to implement the strategic objective of the EU and its member states of achieving the highest possible data autonomy for EU society and industry, the EuroQCI programme is pursuing and realizing the development of an EU-wide infrastructure (communications networks and satellites) based on state-of-the-art, highly secure, and autonomous EU technology. The Center was able to successfully establish itself in this infrastructure and industrial development programme as a key technology supplier and know-how service provider for the Commission, the ESA and EU industry.

The skills for building and operating modern digital technology accumulated in the process have strengthened Austria's position as a European forerunner in terms of business location.

In addition to these key areas, the Center was able to play a leading and formative role in anchoring Austria as a business location in the major EU initiative Gaia-X for the creation of a competitive digital location, which aims to achieve maximum data sovereignty and reduced dependence on global IT providers. As Chair of the Gaia-X Hub Austria, the Center has become the central actor for the national economy, society, and authorities and serves as a bridge for Austrian interests in various EU initiatives. (www.gaia-x.at).

Complementing its cutting-edge research activities, the Center initiated explicit discussion processes with civil society stakeholders, public authorities, and users of digital solutions in several areas as an important contribution to sustainably ensuring an ongoing discourse on the deployment and use of new digital technologies: As a major player in the association "Digital City Wien" (www.digitalcity.wien), the Center supports the enhancement of digitisation skills among students; by editing a regularly published newsletter, the Center promotes the critical examination of new digital media together with the Association of Austrian Electrical Engineers (OVE). An information campaign together with the United Nations Organization (UNO) is contributing to the secure handling of critical personal data in the context of public authorities (www.responsible-biometrics.org), and finally, the IDSF International Digital Security Forum (www. idsf.io), a global dialog format of its own, was successfully initiated and implemented to discuss the use of digital technologies by public authorities.

In addition to these research and technology activities, the successful scientific track record and the expansion of networks with universities and scientific institutions also demonstrate the Center's high level of sustained expertise. In line with the focussing activities on technology development and international positioning in the technology market, scientific dissemination (publications, conferences, etc.) was maintained at the previous year's level.

## REPORTS FROM THE CENTERS VISION, AUTOMATION & CONTROL

Industry is currently confronted with multifaceted challenges. Labour and skilled labour shortages, rising energy prices, supply bottlenecks, the necessary flexibilisation of production processes and, last but not least, the demand for resource-efficient and sustainable production are currently determining the situation and will probably continue to do so in the medium and long term.

The Center for Vision, Automation & Control (VAC) is not only a partner for industry that knows its needs and has comprehensive insights into industrial processes thanks to many years of trustful collaboration, but also supports the companies with intelligent automation and digitisation solutions to overcome the upcoming problems and helps with the implementation of the digitisation strategy and the European Green Deal. To achieve this, the Center possesses extensive expertise and technologies in the areas of image processing, automation and control, as well as in the use of Artificial Intelligence methods. The Center thus covers the entire automation chain, starting with the collection of information by intelligent sensor systems all the way through to Al-based decision making by autonomous systems. The research work at the Center results in innovations to increase the flexibility. adaptivity, and resilience of production processes and machines while improving energy and resource efficiency and minimising production costs.

Key partnerships with internationally active companies and research institutions were expanded and the Center's positioning in the research landscape was strengthened. R&D contracts lasting several years, significant research funding commitments from national and international funding bodies, as well as great media interest and high visitor numbers at our trade fair appearances marked the past year. In addition to the outdoor test site at the Tech Campus Seibersdorf for the development of autonomous large-scale robotics (e.g. commercial vehicles), the Machine Vision Lab at the Vienna location was completed as well. It includes various demonstrators focusing on innovative image processing technologies for industry and enjoys a high number of visitors.

A particular concern is to make people the focus of future automation systems. For this reason, intelligent assistance

systems and autonomous subfunctions should be designed to support people in the best possible way and adapt to their needs. In terms of strategy, the course was already set as of 2021 to invest more in fundamental research questions and to further expand the Center's existing areas of strength. As part of the scientific flagship project "Al-Enabled Automation", research is now being conducted on the following topics in cooperation with the Center for Technology Experience, Profactor, and TU Wien: Firstly, Al-based process automation for sustainable production; secondly, synergetic cooperation between humans and robot systems in automated assembly and disassembly, e.g. repair tasks for a trend-setting circular economy; and thirdly, the development of assistance and autonomy functions for automated work machines and commercial vehicles.

### Highlights in Portfolio Development

In the high-performance image processing and inspection systems research field, the Center has been playing a globally leading role for many years when it comes to the development of innovative technologies for the optical quality inspection of security documents (especially banknotes). In collaboration with central banks and leading companies in the industry, work in the area of standardization and the development of test sensors was further expanded.

For inline quality control in production (e.g. metal or plastic products, printed circuit boards), combined 2D and 3D imaging methods are used that are particularly suitable for the automated optical inspection of products with challenging surface properties (e.g. transparent, glossy, black). These inspection systems are characterised by a combination of a particularly fast and robust image capturing with specially adjusted Deep Learning methods. This makes it possible to automatically detect defects that previously could not be resolved by manual or optical methods. The research project with voestalpine BÖHLER Edelstahl GmbH & Co KG exemplifies the successful implementation of the technologies developed at the Center. The task, which had previously been considered unsolvable, was inspecting the surfaces of ground steel billets for defects such as cracks during the ongoing production process. At the end of the project, all objectives were achieved: The innovative testing procedure is now part of the production process, the skilled workers feel significantly unburdened, while the company is able to increase product quality and conserve energy and materials in the process.

The Center was able to further expand its excellent market position in process automation for heat treatment operations in the metal industry. In order to precisely control the product temperature and increase energy efficiency, tailor-made solutions based on mathematical models and optimal control algorithms were successfully implemented in several plants for continuous and batch ovens.

In the cooperation project with the Tyrolean company Plansee Hochleistungswerkstoffe (HLW), energy consumption was thereby reduced by 20%, while product quality remained unchanged at a high level. In the meantime, the AIT development has been incorporated into the production operation. The Center also conducts research into intelligent algorithms for resource-saving production and the efficient operation of mechatronic automation components. In the process, solutions were developed that entail a simple configuration of different variants, a significantly reduced commissioning effort, a reduction of possible performance losses due to production tolerances, and an extension of the service life of the components. This is achieved through the development of hybrid (physical and data-based) modelling and verification methods as well as adaptive and online learning control algorithms.

In the thematic area of assistive and autonomous systems. the Center continues to advance research in sensor technology for the detection of the environment for the automation of vehicles, work machines and aircraft. A special focus is placed on safe, automated operation in harsh environmental conditions (weather-related obstruction of visibility, dust, dirt) in changing environments (e.g. construction sites, off-road). The latest imaging radar systems with corresponding data analysis methods as well as algorithms for the fusion of multimodal sensors play an essential role, as does Machine Learning. In addition to classic applications for object classification and semantic segmentation of the environment, methods for determining the position of objects in space have thus been developed. This is an important prerequisite for path planning and the precise manipulation of objects by work machines. Together with cooperation partners at the Center, a truck-mounted forklift was automated in the funded HOPPER project. In the future, it is to independently carry out outdoor loading and unloading operations. In addition to the aforementioned technologies for automated work machines, new Machine Learning methods were used that allow the position of the load to be detected in a reliable manner based on training with purely synthetic data. At the end of the project in fall 2022, the truck-mounted forklift was able to autonomously load pallets onto a truck at the company's own test site at the Tech Campus Seibersdorf. With this project, the Center has also reached an important milestone in automation, Al and robotics and will now increase the intelligence and flexibility of the machines in the next step.

## REPORTS FROM THE CENTERS LOW-EMISSION TRANSPORT

The Center for Low-Emission Transport conducts basic new research into technologies for sustainable and efficient vehicles, components, and transport systems, as well as their production and maintenance. The focus of the new strategy 2021+ is on lightweight construction technologies (Competence Unit Light Metals Technologies Ranshofen), battery technologies (Competence Unit Battery Technologies), electric drives (Competence Unit Electric Vehicle Technologies) and efficient use of the transport infrastructure (Competence Unit Transportation Infrastructure Technologies).

Based on the thematic successes, further developments in previous years and a large number of EU projects won, it was decided to establish the new Battery Technologies Competence Unit at the turn of the year 2021/2022. It emerged from the former "Battery Cell Technologies" research field (until the end of 2021 in the Electric Vehicle Technologies Competence Unit) and is now further expanding topics in three research fields of its own. The research field "Battery Materials Development and Characterization" is concerned with the materials of future battery technology. In the research field "Sustainable and Smart Battery Manufacturing", the material topics are transferred from basic research to processability for (semi-)industrial scales, and associated production and measurement technologies are being researched.

Finally, the third research field "Solid State Battery" focuses on the development of future-oriented solid state batteries. A new lab and an additional research pilot line are currently being prepared for this purpose and will be built in 2023. This newly founded Competence Unit demonstrates the Center's commitment to understanding electromobility in its entirety, from lightweight construction to the battery, the electric drivetrain, the auxiliary electrical consumers and the surrounding infrastructure.

### Highlights in Portfolio Development

## More efficient production of forged aluminium components

The process chain for the production of forged aluminium components for the automotive industry (steering systems, transverse control arms, spring control arms) is the subject of research at the LKR Leichtmetallkompetenzzentrum Ranshofen. Our researchers want to improve properties of light metal products and increase the efficiency of individual process steps in product manufacturing. In the process used to date, extruded round billets are homogenized and pressed to a desired diameter by means of an extrusion process. The starting material obtained in this way is subsequently used for the production of forged components. Research at the LKR aims to produce high-quality round billets - in desired semi-finished diameters - using horizontal continuous casting. Thanks to an improved alloy, homogenization of the billets is no longer required. By optimizing the casting parameters, the round billets can be cast directly to the required forging diameter. This means that the extrusion process step can be omitted and the process sequence is significantly shortened. The energy required for the entire process can thus be reduced by up to 30%, resulting in significant CO<sub>2</sub>savings in aluminium forging production.

### Climate-friendly battery production for the batteries of tomorrow

Electromobility is an important part of climate change and has increasingly emerged as a key market in recent years, both on a global and especially on a European level. The batteries used for this purpose have so far been examined and improved in terms of their sustainability primarily from the perspective of raw material extraction, but their manufacture remains a major challenge. The focus of sustainable cell production here lies primarily on three essential factors, which AIT is working on: the reduction of volatile organic solvents, in some cases even to the point of complete dry processing of the electrode pastes; the optimisation of the electrolyte filling process, and the associated need for a drying room. Currently, many process steps in cell production take place under defined conditions, which leads to a high energy demand and thus, depending on the electricity mix and external influences such as ambient temperature and humidity, to an increased CO footprint. However, AIT is developing water-based electrodes with a high dry content, which saves a considerable amount of energy. The energyintensive drying process is also significantly shortened, since the residual moisture content decreases. These process advances are chemistry-independent and can thus be applied to the wide variety of Li-ion technologies (including in the gigafactories planned in the EU) without causing a significant increase in investment.

## Next generation silicon carbide inverter for electrically, functionally integrated drive axles

The goal of the current research together with partners was a functionally integrated E-axis for use in third-generation electric vehicles. This E-axle consists of a six-phase permanent magnet synchronous machine with buried magnets driven by an 800 V six-phase silicon carbide inverter coupled to a high speed gearbox. It was delivered with technology

maturity level 7 for all its components and demonstrated on an electric vehicle platform designed for the European market (A-segment reference platform). The use of silicon carbide semiconductors for highest power density and efficiency drives the stated research goal to further develop wide bandgap semiconductor applications. The inverter used offers 50% higher power density compared to the state of the art in 2018 (start of development), and up to 97% efficiency.

Furthermore, with the aid of a DC converter, a variable intermediate circuit is used which maximizes the efficiency of the electric machine by means of an intelligent control strategy.

## Objectively measure active mobility, evaluate it in a comparable way, and proactively improve road safety

Traffic conflicts provide a clear indication of the increased traffic safety risk, even before accidents occur. They occur much more frequently than accidents, but are more difficult to detect. The AIT Mobility Observation Box (MOB) enables automated, comparable and objective traffic conflict investigations using Artificial Intelligence network-wide for all types of road users. The overall concept of this innovative and preventive procedure was awarded the Ö3 Traffic Award in 2022. The MOB was successfully deployed in Austria, Germany and Switzerland this year. Key topics were traffic conflict studies at protective crossings at school sites in Vienna, the observation of safety-relevant interactions of e-scooters with other traffic-participating groups in Berlin and in Dresden, and the objective evaluation of the road safety of cycling in Lausanne and Zurich. The unique MOB analyses and assessments from the Swiss project provided an essential basis for the national guideline VISSI (Velo-Infrastruktur-Sicherheitsinstrumente [Bicycle Infrastructure Safety Instruments]) published in September.

## REPORTS FROM THE CENTERS TECHNOLOGY EXPERIENCE

Along the strategy elements "Next Generation Human Centricity" and "Future Hybridity", various focal points underwent further development and were positioned accordingly. The examination of new values in the field of Human-Centered Design (e.g., the topic of "Meaningful HCI") provides valuable contributions, as does the topic of "Extended Reality for Special Application Contexts" or the comprehensive consideration of "Human-Al Synergy". This is also connected to the work in the flagship project "Al-enabled Sustainable Automation and Robotics", which develops the essential foundations in the synergy of automation and human-machine interaction.

Scientific publications were positioned at relevant and competitive conferences or journals. For example, the paper "What Is Meaningful Human-Computer Interaction? Understanding Freedom, Responsibility, and Noos in HCI Based on Viktor Frankl's Existential Philosophy" reflects on the significance of meaningfulness based on Viktor Frankl's philosophical work (Honourable Mention Award at the "Designing Interactive Systems Conference (DIS)" conference).

The paper "Marcus or Mira – Investigating the effect of gender in virtual reality role play training" was presented at the "ACM Symposium on Virtual Reality Software and Technology (VRST)". This work contributes to the understanding of non-player character (NPC) design and how it relates to the design and development of immersive virtual reality role-playing game training.

The article "A Vital Improvement? Relating Google's Core Web Vitals to Actual Web QoE" was awarded the Best Paper Award at the QOMEX 2022 conference. The results of performance analyses and crowdsourcing studies reveal existing weaknesses of the current Core Web Vitals (experience metrics presented by Google to improve the user experience on the web) in terms of their correlation with the web user experience (Quality of Experience). The article "Evaluating Active and Assisted Living Technologies: Critical methodological reflections based on a longitudinal randomized controlled trial" reports on results of a comprehensive experimental field study to evaluate an AAL technology for older people.

#### Highlights in Portfolio Development

The research field "Experience Business Transformation" focused on the prototypical development of future interaction solutions for complex situations and use cases. As for the topic of Extended Reality (XR), the focus was on future training opportunities, the design of hybrid worlds (including virtual reality for digital twins), and the use of XR technologies for resilience topics. The MED1stMR project, for example, developed the first Mixed Reality prototype for a virtual training system for medical first aiders. The focus was on the realistic design of the environment and involved persons as well as the future interaction approach of real objects (including respiratory masks, stethoscope) in the virtual environment. The system allows first responders to train complex situations in a safe environment and quickly switch between different scenarios and training environments.

Novel interaction concepts and design solutions for "Industrial Human Machine Interfaces" could be developed in several industrial projects as part of the focus on future interface topics. For example, user-centered design for industrial touch interfaces was driven forward and innovative interaction solutions for CNC laser cutting were developed. In the course of the lighthouse project, context analyses were conducted in the production environment of the metalworking industry and concrete design approaches for human collaboration with intelligent systems (including AI systems, robotics) were elaborated ("Human in the Loop" aspects). The interaction here focuses on the visual inspection of components and the parameterisation of cyclical manufacturing systems for quality optimisation. Concrete added values for users include efficient communication with the system, avoiding errors, and faster training.

The topic "Human Centred Business Innovation" focused on the further development of the Multi Level Measurement Toolkit. The aim is to capture human behaviour and cognitive processes by integrating relevant biosignal sensors with different data sources, such as voice recordings or movement patterns.

The "Biosync" system, which integrates biosignal sensors (including ECG devices, thermometers, etc.) from various providers and stores them in a stable and time-synchronised manner, was developed for this purpose.

A small device ("hive") is attached to people and serves as a receiver for modularly deployable biosignal sensors ("drones"). With the help of the Biosync system and experience in the development of a stress model, cognitive and emotional states are to be made measurable and usable in the future.

In the research field "Experience Measurement", new user-centred experience assessment and optimisation methods as well as new diversity-sensitive design approaches were developed. To improve the experience of assistance and robotics systems, cross-context scenarios were developed, e.g. in order to support workers in manufacturing processes in a targeted manner through social robots [RobPerMot]. In addition, Big Data models and methods were further developed to explain and predict the acceptance of critical technologies (such as biometric controls), e.g. to improve the planning of border checkpoints (METICOS project).

In the field of diversity-sensitive epistemological frameworks, theoretical concepts that rethink the image of participants have been developed. In this context, concepts of users as meaning-seeking beings (Digital\*Frankl project) with digital power of agency ("Agency", DigitalEncounters project) as well as methods of recording (in)equality of opportunity in innovation sectors (Equal Opportunity in the Energy Sector project) were developed in order to enable user-centred development based on elaborate, diversity-sensitive images of users. As part of the DigComp project series (scientific support for the development of instruments to record digital competences for fit4internet), another project was successfully completed. In addition to expanding and improving the item material from the ongoing Dig-CERT knowledge assessment of digital competences according to DigComp AT, the two additional modules "Data Science" and "Artificial Intelligence" were developed with the integration of domain expertise and psychometrically examined in the course of an online survey.

In the research field "Capturing Experience", different interface approaches were investigated in order to improve the collaboration of users with Al-based systems. Interface concepts were developed and implemented that enable domain experts in industrial production to develop improved models and forecasts for quality-relevant processes using Al support and machine analysis of existing production data. This allows possible quality problems in the production process to be detected more quickly and thus corrective measures can be taken more rapidly. Special attention was paid to enabling users to create and evaluate complex Machine Learning models through an adapted interface design without the need to acquire specialised technical knowledge (INTERACTIVE project).

The project "Social License to Automate" (International Energy Agency research cooperation of the BMK) together with the Center for Energy investigated a central question for the energy transition: under which conditions do households and communities give their implicit consent (a social licence) to automated demand side management? On the basis of case study analyses, interfaces of such automated demand side management systems offered to end users were analysed and recommendations for their trust-building design were established. These recommendations differ according to the level of automation of demand side management. The subsequent project "Social License to Automate 2.0" is now deepening these findings, on the one hand to work out the role of diversity and gender for consumption flexibility and engagement, and on the other hand to identify the potential of energy communities for the creation of a social license to

These findings now make it possible to tailor automation approaches specifically to the needs of different user groups, thereby increasing their acceptance, efficiency, and areas of application, and thus making an important contribution to achieving the energy transition.

## REPORTS FROM THE CENTERS INNOVATION SYSTEMS & POLICY

Geopolitical developments have recently gained considerable attention and have also left their mark on research, technology, and innovation policy agendas. They have further increased the need for transformative and proactive industrial and policy strategies, and with it the interest in the Center's specialized skills and services.

The Center's visibility, with its strategic focus on transformative innovation policy, was expanded, particularly in the areas of strategic foresight, monitoring and support of mission-oriented RTI programmes, transformative indicators, as well as sustainable industrial transformation. Scientifically, the Center was able to distinguish itself by co-organizing the international (online) conference on "Building a Sustainable Knowledge Infrastructure on Transformative Innovation Policy" in this area and initiate new collaborations. Complementary to this, the Center has entered new territory by dealing with concepts and methods of transformative research; an engagement that should subsequently contribute to the development of an expert community and to the further scientific profiling of the Center.

### Highlights in Portfolio Development

At the European level, the Center has carried out a number of impactful projects to accompany and further develop the European framework programme for Research and Innovation Horizon Europe, including on key topics such as Green Transition and Digital Transition, but also on new instruments such as the EU Missions, the European Partnerships and the Knowledge and Innovation Communities of the European Institute for Innovation and Technology. Several of these projects were implemented in close collaboration with Austrian ministries and agencies. Moreover, a large foresight project was led in preparation for the second phase of the Horizon Europe research framework programme, focusing on exploration and the consequences of disruptive technological, societal, and geopolitical developments in particular.

In order to drive economic recovery in Europe alongside the digital and green transitions, new priorities for investment must be set in the context of an transformation-oriented industrial policy as well. Net Zero scenarios for the decarbonisation of energy-intensive industries in Austria were developed at national level in cooperation with industrial stakeholders, building on our contributions to the development of global low carbon pathways and technology roadmaps for the European Commission. These results form the basis for further strategic research and innovation agendas with the objective of making a significant contribution to climate neutrality.

In the field of emerging or potentially disruptive technologies and their implications for societal transformation processes, the Center, as coordinator of the EU-funded project TechEthos, was able to significantly expand its research portfolio with regard to serious gaming approaches for determining ethically relevant aspects of emerging technologies with the involvement of citizens.

Citizens, in particular from vulnerable groups, contribute their values and attitudes to Virtual Reality and speech processing, neurotechnologies and climate technologies in a discussion game specially developed by an interdisciplinary team of experts. The collected voices are taken into account in regulatory efforts of technology development processes.

2022 was another scientifically and economically very successful year for the Center for Innovation Systems and Policy, accompanied by further moderate growth. In order to take this development into account, the Center will establish two Competence Units in 2023: Industrial & Innovation Dynamics and Transformative Governance. With this organisational change, we want to address our customers and partners in a targeted manner with clearly bundled competences and service offerings. The new Competence Unit Industrial & Innovation Dynamics focuses on the characterisation and modelling of change in innovation strategies and innovation systems as well as the support of industrial transformation processes. The Competence Unit Transformative Governance addresses the question of how research and innovation policy can be designed in order to contribute in the best possible way to solving major societal

## SEIBERSDORF LABOR GMBH

Seibersdorf Labor GmbH (SL) is the first point of contact for high-precision laboratory analysis and complex measurement technology in Austria and (with selected services) also internationally. The company ensures that its clients can market their products and services in accordance with current health and environmental guidelines. To this end, the Seibersdorf Labor GmbH (SL) offers highly sensitive lab and analytical services as well as special developments for complex measurement technology in the segments of chemical analysis, radioactivity and radiation protection, radiation hardness assurance and cosmic radiation, EMC and high frequency technology as well as optical radiation. The product portfolio is complemented by a radio-pharmaceutical production for tumour diagnostics and therapy.

The Seibersdorf Academy supports the transfer of knowledge and serves as a networking basis for customers, users and authorities with education, training courses and specialist conferences.

In 2022, some of the profits generated were again reinvested in our own research and development as well as in the continuous improvement of quality with regard to certifications and accreditations. The focus of applied research and experimental development was on the following areas:

Radioactivity and Radiation Protection

- Development of measurement methods and radiancy qualities
- Measurement methods and simulations for radiation hardness
- Method development for ultra-low-level measurement technology
- Radiation detector for pulsed radiation
- Development of radiation protection measuring instruments and probes

#### Chemical analysis

- Detection of doping substances and disease markers
- Method development and validation for stability studies
- New forensic methods

#### EMC & Optics

- Method and prototype development for the measurement of electromagnetic fields
- Processes for probe calibration
- Safety of laser and optical radiation

With its expertise, Seibersdorf Labor GmbH works for the Austrian and European economy (from small and medium-sized enterprises through to large-scale industry) and the public sector (from national task forces and authorities through to international organisations). The company stands for top quality and excellent know-how in the field of these laboratory services. Accreditations and certifications are therefore to be understood as the basis for any business activity.

The order level of Seibersdorf Labor GmbH has grown continuously in recent years, particularly in the fields of electromagnetic field measurement technology and radiopharmaceuticals. Despite the still volatile economic situation, strong growth was recorded again in 2022. The infrastructure expansion in the area of high-frequency technology (calibration center) was successfully completed in 2022, and planning for the structural expansion of Radiopharmacy has been started.

## NUCLEAR ENGINEERING SEIBERSDORF GMBH

The Nuclear Engineering Seibersdorf GmbH (NES), a 100% subsidiary of the AIT Austrian Institute of Technology GmbH, has two main tasks: the management of radioactive waste produced in Austria (collection, sorting, processing, conditioning, and interim storage) and the decontamination and decommissioning (dismantling) of nuclear facilities, in particular from 45 years of research and development at the Tech Campus Seibersdorf site.

Both tasks are carried out on behalf of the Republic of Austria (currently represented by the BMK), and there are long-term contracts with terms until 2033 (decommissioning) and 2045 (waste management), which also regulate the financing of the activities.

The main project of the Nuclear Engineering Seibersdorf GmbH in the area of waste management in 2022 was the continuation of the reconditioning of old waste packages. No problems were encountered during project implementation, and the work could be completed according to plan. Reconditioning can realize a significant reduction in the volume of waste that must be sent for subsequent final disposal. In the area of decommissioning, the major project in 2022 was the continued operation of the soil monitoring facility and the associated initiation of routine measurement, sorting, and release of lightly contaminated materials from previous decommissioning projects. In addition, major progress was also made in the "Decommissioning Hot Cell Laboratory" project, the last major former nuclear research facility at the Tech Campus Seibersdorf; this project will be completed in 2023.

## BUSINESS PERFORMANCE 2022 EARNINGS POSITION

The business year 2022 was closed with a positive result for the AIT Group.

External revenues (= sum of contract research and co-financed revenues) reached EUR 103 million, (previous year: EUR 97 million), an increase of 6.2%. At the same time, it was possible to significantly increase the work in progress compared to the previous year (work in progress for contract research +7% compared to the previous year, work in progress for co-financed projects +39% compared to the previous year) – see also the comments below.

Revenues from contract research were increased above the previous year's level (EUR +3.6 million; +6.1%). Revenues from co-financed research also showed significant growth (EUR +2.4 million; +6.5%).

Shareholder contributions reached a level of EUR 53.7 million (previous year: EUR 50.8 million), thus showing an increase of EUR 2.9 million (+5.7%) compared to the previous year. The shareholder Republic of Austria, represented by the BMK, thus secures the third pillar of funding for the company's research activities and underscores the importance of the company when it comes to the topics surrounding climate change, decarbonisation, and digitisation.

Other operating income / other sales revenue of EUR 15.6 million (previous year: EUR 13.8 million) includes income from passed-on rents and operating costs of EUR 1.2 million (previous year: EUR 1.1 million) and income from other passed-on costs to third parties of EUR 1.4 million (previous year: EUR 1.3 million), release of investment grants of EUR 9.1 million (previous year: EUR 9 million), income from the release of provisions of EUR 1.8 million (previous year: EUR 1.5 million), income from premiums and public grants of EUR 1.5 million (previous year: EUR 0 million) and other operating income / other revenue of EUR 0.6 million (previous year: EUR 0.9 million).

In contrast to the P&L structure in the annual financial statement according to the RÄG 2014, the presentation for the management report was maintained unchanged. This avoids mixing up the income from research contracts with the income from passed-on expenses – which has to be presented in the sales revenue according to RÄG 2014 – in the amount of EUR 5.9 million (previous year: EUR 5.7 million) and the other sales revenue in the amount of EUR 1.5 million (previous year: EUR 1.5 million).

Designation in kEUR	ACTUAL 2022	ACTUAL 2021
Revenues R&D	63,237	60,800
Inventory changes	-318	-872
Revenues R&D including inventory changes	63,555	59,928
Funding R&D	30,664	34,917
Inventory changes	8,819	2,141
Funding R&D including inventory changes	39,483	37,059
Total Revenues from Research Contracts	103,038	96,987
Services BMK – previously BMVIT	53,713	50,801
Total Payments of the Shareholders (Research)	53,713	50,801
Nuclear BMK – previously BMVIT	5,275	4,934
Nuclear BMK – previously BMVIT	5,325	5,212
Total Financing Nuclear	10,600	10,145
Other operating income / Other revenue	15,595	13,858
TOTAL OPERATING INCOME	182,945	171,790

## EXPENSE STRUCTURE AND RESULT

As a result of higher revenues and the resulting project cost structure for purchased services, the company's expense structure for the reporting year 2022 shows an increase of about EUR 1.9 million (reporting year: EUR 12.6 million, previous year: EUR 10.7 million). This increase is mainly due to the direct increase in energy purchase prices of EUR 1.2 million.

Due to the increase in the number of employees and the salary indexation based on the collective bargaining agreement, personnel expenses showed an increase of approx. EUR 5.8 million (reporting year: EUR 109.5 million, previous year: EUR 103.7 million).

Other operating expenses also increased by about EUR 4.0 million compared to the previous year (reporting year: EUR 36.1 million, previous year: EUR 32.5 million). The increase is largely due to necessary allocations to provisions of EUR 2.7 million (previous year: EUR 2.1 million) for infrastructure

measures at the Group's various locations. A further EUR 0.5 million in additional costs resulted from the financing of strategic initiatives of the Digital Factory Vorarlberg GmbH. Travel activity increased again in the financial year due to the beginning recovery after the pandemic, which resulted in additional costs of EUR 0.5 million. The further increases can be seen in the pass-through of inflation in the reference prices for the various expense items.

The negative financial result of EUR –1.5 million is the result of the need to devalue the bond portfolio due to capital market developments in the reporting year. Due to the "hold-to-maturity" strategy and the resulting calculable redemption prices of the bonds, the need for devaluation is largely of a temporary nature.

The annual result for 2022 is EUR 3.1 million (previous year: EUR 5.2 million).

Designation in kEUR	ACTUAL 2022	ACTUAL 2021
TOTAL OPERATING INCOME	182,945	171,790
Material costs	-8,336	-8,283
Services rendered by third parties	-12,597	-10,692
Material costs and purchased services	-20,934	-18,974
Personnel expenses	-109,559	-103,680
Amortizations	-11,274	-11,023
Other operating expenses	-36,053	-32,509
TOTAL OPERATING EXPENSES	-177,821	-166,186
OPERATING PROFIT	5,125	5,604
Financial profit	-1,475	230
RESULT BEFORE TAXES	3,650	5,834
Taxes on income and earnings	-578	-649
ANNUAL RESULT / PERIOD SUCCESS	3,072	5,185
Result carried forward	38,385	33,200
NET PROFIT	41,457	38,385

BUSINESS PERFORMANCE 2022 BUSINESS PERFORMANCE 2022

## **INCOMING ORDERS**

In the year under review, orders worth EUR 97.2 million (previous year: EUR 69.4 million) were acquired. Incoming orders for the AIT Group could thus be increased by approx. 40% above the previous year's level. The growth rate in the acquisition of co-funded projects was about 73% (reporting year: EUR 65.5 million, previous year: EUR 37.9 million), while the level of contract research projects remained constant at EUR 31.7 million (previous year: EUR 31.6 million). Overall, this represents a strong acquisition performance in the area of co-funded research, which can be attributed to the successful launch of the EU's new research framework programme "Horizon Europe".

The representation of incoming orders and order backlogs does not take into account small projects - primarily those of Seibersdorf Labor GmbH - with a short duration and completion within the acquisition year (incoming orders small projects reporting year: EUR 33.5 million, previous year: EUR 30.6 million; thereof Seibersdorf Labor GmbH: Reporting year: EUR 27.3 million, previous year:

EUR 24.9 million).

## all amounts in millions of EUR

Contract research

Funded research

Incoming orders



## ORDER LEVEL

The good incoming order situation in the year under review allowed order levels to significantly increase in 2022 despite the high revenue volume. In comparison to the previous year, these increased by about 20% (reporting year: EUR 231.1 million, previous year: EUR 193.0 million), and both contract research (reporting year: EUR 42.5 million, previous year: EUR 39.0 million +9%) and co-financed research (reporting year: EUR 188.6 million, previous year: EUR 154.0 million, +23%) saw an increase.

### Order Level

all amounts in millions of EUR

Contract research Funded research



BUSINESS PERFORMANCE 2022

## **WORK IN PROGRESS**

(unfinished projects)

Work in Progress does not only take account of the invoiced revenues (as in the case of the order level), but also the deferred project revenues due to the project work progress. In the year under review, work in progress increased by approx. 30% to EUR 122.7 million (previous year: EUR 94.7 million).

In terms of project categories, the co-financed research shows a slight increase of 39% (reporting year: EUR 91.9 million, previous year: EUR 65.9 million). The growth in work in progress for contract research was more pronounced at around 7% and amounted to EUR 30.8 million at the end of the year (previous year: EUR 28.8 million).

## Work in Progress all amounts in millions of EUR



## **INVESTMENTS**

Total investments in intangible assets and property, plants and equipment in 2022 amounted to EUR 16.3 million and are EUR 6 million above the corresponding previous year's figure of EUR 10.3 million.

EUR 0.9 million (previous year: EUR 0.5 million) was invested in intangible assets. The acquisition of assets for land and buildings amounted to EUR 4.0 million (previous year: EUR 0.9 million). The investment in technical facilities and machinery amounted to EUR 6.0 million (previous year: EUR 6.7 Mio. EUR). EUR 2.3 million were spent for facility and office equipment (previous year: EUR 1.1 million), and EUR 3.1 million were received for advance payments and plants under construction (previous year: EUR 1.1 million). In addition, plants under construction and advance payments of EUR 7.0 million (previous year: EUR 3.1 million) were put into operation in the financial year. In the previous year, EUR 0.04 million in advance payments were transferred to expenses

## LIQUIDITY AND FINANCIAL POSITION

As of 31 December 2022, cash and cash equivalents amounted to EUR 124.9 million (previous year: EUR 90.0 million). The liquidity level as of 31 December 2022 also includes funds for investment projects already ordered but not yet delivered.

Cash and cash equivalents are offset by liabilities from fiduciary project coordination funds in the amount of EUR 45.0 million (previous year: EUR 27.6 million).

As of 31 December 2022, there were securities deposits with a book value of EUR 16.0 million (previous year: EUR 20.3 million).

In the year under review, liabilities to credit institutions amounted to EUR 6.3 million previous year: EUR 0 million).

As of 31 December 2022, equity amounted to EUR 57.1 million (previous year: EUR 54.0 million). After taking into account the investment grants in the amount of EUR 72.0 million (previous year: EUR 72.7 million), the sum of expanded capital resources amounts to EUR 129.1 million (previous year: EUR 126.7 million).

BUSINESS PERFORMANCE 2022

REPORT ON MEASURES IN SUSTAINABILITY MANAGEMENT

## **PERSONNEL**

As of 31 December 2022, the company employed a total of 1,241.2 FTEs or an average of 1,203.7 FTEs during the financial year. These figures also include apprentices, apprentices in the retention period and HF/EU scholarship holders. Compared to the previous year's reporting date (1,177.9 full-time equivalents and 1,159.5 average full-time equivalents), this corresponds to a total increase of the workforce of 63.3 FTEs and 44.2 average FTEs.

## REPORT ON MEASURES IN SUSTAIN-ABILITY MANAGEMENT

As an R&D institute, AIT follows the current strategy "Research and Innovation for a Sustainable and Competitive Position in the Digital Age". The management of the company in the form of a GmbH is conducted according to the usual principles of corporate governance. As a result, sustainability management at AIT can benefit from a closely coordinated system of structures, processes, and regulations which is effective in the different phases of service provision and across the entire organisation and takes into account the ideas of sustainability and corporate social responsibility.

AIT uses the existing management system (certified in accordance with ISO 9001), which forms an essential basis for regulation in connection with the provision of services and the daily work of the AIT employees. The company can react flexibly to the need for change within the framework of the existing management system and can incorporate new measures into the corporate process landscape. The existing communication channels and mechanisms of the management system ensure a rapid implementation in the organisation.

The starting point of AIT's strategy development is the adoption of the "owner's vision", which provides cornerstones and orientation parameters for the company's direction. The owner's vision takes into account trends and discussions of the international and national RTI landscape as well as supranational organisations (such as SDG – Sustainable Development Goals of the UN and the EU Taxonomy Regulation).

The AIT strategy and the research roadmaps defined therein form the basis of service provision. The AIT planning and control process is based on the company's strategy and quality policy and defines the company's key control mechanisms.

Against this backdrop, the pillars of the AIT service delivery and value creation come into play. Human Resources Management: Clear career paths, further training and development opportunities, regular interaction (e.g. work environment surveys, development discussions, team meetings) also contribute to AIT being perceived as a place for personal and professional development and creative work.

Gender & Diversity Management plays an important role at AIT and is handled in a structured manner by the AIT "Gender Task Force". The company sees this work as a valuable contribution to non-discriminatory collaboration – working with respect, appreciation, and tolerance, regardless of gender, gender identity, age, ethnic, national or social origin, religion or belief, sexual orientation, language, disability, political opinion and social or economic circumstances.

Research management ensures the basis for regular work in all types of research projects – from contract research to independent research. Structures, rules, and processes create transparency, integrity and traceability of the work, both in terms of content and under business considerations.

The compliance pillar ensures transparency and thus compliance with important standards and rules of the company (e.g., Code of Conduct, Code of Leadership, Incident Reporting System in compliance with the EU Whistleblower Directive).

The idea of sustainability also extends to supporting processes and measures. Sustainable procurement is conducted taking into account the BMK's guideline on sustainable procurement, structured according to different procurement groups and product class specifications (e.g. energy indicators, proof of chemical substances, recyclability, etc.) and, if possible, using appropriately preselected procurement catalogues in AIT's electronic workflow system.

REPORT ON MEASURES IN SUSTAINABILITY MANAGEMENT

REPORT ON MEASURES IN SUSTAINABILITY MANAGEMENT

In the area of building and lab infrastructure, a cross-organisational planning process that comprehensively addresses ideas of sustainable building development, energy issues as well as renovation issues was developed. Optimised land use, the best possible avoidance of and sealing and the ecologisation of green spaces are of great importance in this context, especially at the Tech Campus Seibersdorf. As a result, the implementation of a photovoltaic project was started in 2022, whereby the roofs at the Tech Campus Seibersdorf are to be used for energy generation by means of PV systems. Further steps were taken in the area of the working environment as well to take into account the dynamic developments in the world of work ("New Work"). The focus here was on amending the corresponding company agreement to increase the remote work ("home office") ratio in 2022. It is assumed that this will lead to a permanent increase in efficiency in the use of room capacities.

The company's mobility management complex is taken into account through travel guidelines, fleet management (electric vehicles with charging facilities at the sites) and advice to employees regarding their choice of mobility options.

As part of the EU Taxonomy Regulation, the CSRD (Corporate Sustainability Reporting Directive) will take effect from the 2024 annual report onwards, making it necessary to expand the existing reporting system to include additional evaluation options and quantifiability with regard to sustainability indicators within the framework of the AIT value chain. In order to respond to the new reporting requirements in the best possible way, a project was launched in 2022 to develop an extended CSRD-compliant reporting structure. An interdisciplinary project team was formed for this purpose, combining different fields of competence at AIT and supported by an external partner. The corresponding reporting structure will be implemented by the end of 2023.

The following presentation provides an overview of the current sustainability management structures, processes and measures at AIT.

### STAKEHOLDERS AND RELEVANT ENVIRONMENT Sustainability Management @ AIT RTI pact Service Provision SDG - Sustainable Strategy Development Goals Supporting **EU Taxonomy Quality Policy Human Resources** Management Processes Shareholder Vision Planning, Control and **Gender & Diversity** Sustainable Procurement Evaluation Research (Project) Infrastructure Management and Location Management **Ecologisation** Compliance Mobility Management

AIT SHAREHOLDERS,

36 ANNUAL FINANCIAL STATEMENT 2022

REPORT ON THE SIGNIFICANT RISKS AND UNCERTAINTIES

REPORT ON THE SIGNIFICANT RISKS AND UNCERTAINTIES

# REPORT ON THE SIGNIFICANT RISKS AND UNCERTAINTIES

AIT acknowledges the fact that every entrepreneurial activity involves taking risks. At the same time, a successful company knows how to use its opportunities. AIT is committed to providing resources and design options for managing opportunities and risks in order to exploit opportunities and take risks in a conscious manner.

For example, many risks have a recurring characteristic and occur whether they are recognized or not, while opportunities can often be seized only once and only within certain time frames that must be recognized as such. AIT has the freedom to seize an opportunity when it makes strategic sense. On the other hand, AIT is not free to avoid risks completely or to resolve them in every case in a contradiction-free manner.

The implemented risk management system, which was further developed and optimized in the past financial year, is used for recording and controlling.

### Risk Management and Internal Control System

risk management (RM) identifies and categorises significant risks inherent in the AIT activities. It defines how these risks are to be dealt with. For example, by defining which risks are consciously accepted and managed and which risks should be avoided or outsourced. The risk management system at AIT consists of three components:

- 1. The risk strategy
- 2. Risk-related responsibilities, processes, and guidelines
- 3. Monitoring the risk management

AIT understands the Internal Control System (ICS) to encompass the totality of all the policies, process descriptions, work instructions, methods, and control measures ordered by management which serve to ensure the proper running of business operations

at process level.

Internal control measures are a means to an end for AIT to achieve its objectives, and not an end in themselves. Controls are effected by employees at all levels of the organisation.

AIT regards the Internal Control System as a subsystem of risk management with strong mutual interactions. As a rule, optimizations in the ICS will have a positive effect on risk management since every improvement of the control system at process level tends to contribute to the reduction of the effort required for the dealing with risks.

## RISK STRATEGY

The basis for the AIT's risk management system is the risk strategy. It is established by the management and defines the risk categories and risk topics to be considered along the most important business areas or the most important value-adding resources. It evaluates these and defines how to deal with these risks (avoid risks, outsource risks, accept and manage risks).

Once the basic risk strategy has been determined on the basis of the strategic risk catalogue, the risk management system subsequently ensures that (further) risks are identified, assessed, managed and reported. The aim of risk management is to optimise the company's success and value in line with the defined AIT corporate strategy. Risk management thus takes place as a continuous process in all parts of the company.

To ensure that the basic steps of the risk management system can function properly, AIT has made appropriate specifications on processes, functions and guidelines. AIT defines its risk management as a fixed component of corporate management. Risk management is taken into consideration in the

- Development of the corporate strategy (market considerations, business case developments etc.)
- Considerations of the design of the organisational structure (e.g. by defining roles, responsibilities or even by defining organisational units themselves)
- Process development (e.g. as part of the offer, procurement or recruiting processes)
- Taking into account determinations on the design of the corporate culture (such as identifying incentive models, MBO, etc.)



REPORT ON THE SIGNIFICANT RISKS AND UNCERTAINTIES

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### RISK ARFAS

The following is a description of the key corporate risk areas that may have a negative effect on the assets, financial and profit position of AIT.

## Financial risk, information on financial instruments according to § 243 para. 3 lit. 5 [Austrian Commercial Code]

The company currently does not use any derivative financial instruments. Due to the nature of its business operations, the use of derivative financial instruments is not plannedin the future either.

Funds are invested in accordance with the AIT investment guideline, which provides for a conservative investment of funds with the involvement of the investment management of the main bank. Where possible, the investment is also made in the short and medium range. On the one hand, this ensures the availability of liquidity; on the other hand, it also allows us to respond quickly to changing framework conditions, such as the fundamentals of the EU taxonomy.

The value of the receivables is continuously assessed and monitored by the receivables management. A review of compliance with payment deadlines, limiting of credit limits and obtaining creditworthiness assessments from our clients limit the impact of potential payment defaults on the company's assets, financial and profit position.

### Risk of the strategic portfolio and market risk

AIT works on the (further) development of technologies or processes whose future usability (e.g. via exploitation in contract research) must first be proven.

The resulting development risk is covered by the use of federal funds. The AIT research portfolio is thus made up of elements with varying degrees of maturity. At the same time, it represents a risk mix that makes it possible, on the one hand, to take up and finance new issues while simultaneously generating a stable income situation on the other. In exploiting the results, AIT addresses European and international markets. Both the acquisition of customers and projects in the field of contract research as well as the acquisition of third-party funding in the national and international subsidy markets happen in a competitive environment.

Against this background, a risk in terms of attainability of projected figures, the development of client groups and partner networks as well as the implementation of business

models is an intrinsic part of business. The service portfolio of the AIT Group is diversified and addresses various sectors in different markets. The continuous monitoring of the order situation as well as an early recognition of trends in the relevant markets with measures that are quickly derived from these remain important tasks for AIT.

#### Project funding risk

A public project funding scheme deviating from the full reimbursement principle as well as changing interpretations of funding guidelines may lead to a deterioration of the funding rate. Changes in the terms of funding project accounting require a system adjustment of the cost accounting and project accounting system. In order to maintain a sound project assessment base, it is necessary to monitor the relevant environment and assess it with regard to possible commercial effects.

### Information technology risks

The company has a central IT systemenvironment, enabling the joint use of high-quality system components at the various locations. This includes, among other things, a modern security environment with a firewall, virus scanning, and remote access points with multiple protection for the detection of and defence against attacks. The data is centrally stored, automatically backed up at regular intervals, and copies are kept off-premises. All our projects are based on the generally accepted standards of the Baseline Protection Manual of the Federal Office for Information Security (BSI) and ISO standard 27001 and are supplemented by empirical values reflecting the current state of technology. AIT intensively deals with the protection of the IT infrastructure from unauthorized access or from attacks, both from within and from the outside. In addition to technical and organisational measures in IT security, the company also implements targeted measures in the area of awareness training for all employees on topics pertaining to IT and information security (e.g. also when handling personal or other sensitive data).

As the company transitions from pure IT to comprehensive information security, it is increasingly looking at organisational measures as well as physical security measures to prevent the loss or misuse of company-critical data. The

function of a CISO (Chief Information Security Officer) was implemented in 2021. This function ensures that measures to increase information security are improved in a structured and sustainable manner and are broadly anchored in the company.

#### Legal risks

AIT counters legal risks through constant communication between the central legal department and the local attorneys, as well as through the implemented reporting system which encompasses ongoing procedures and potential risks. Possible risks were taken into account by means of balance sheet risk provisions in the annual financial statement.

#### Economic risks

The developments regarding the COVID-19 (coronavirus) pandemic event continue to be monitored and corresponding measures are taken depending on them. AIT continues to offer its employees the possibility of regular COVID monitoring (tests).

We follow the recommendations of the Austrian Federal Government both in the interests of the health of our own employees and of society as a whole. All the activities we embark on are geared to ensuring that our business operations are conducted in the best possible way in the interests of our clients and partners.

In view of the increases that have taken place in the general price level and the uncertainty regarding the corresponding further development, AIT attempts to assess the effects of inflation on the cost structure and thus the earnings tangent through ongoing risk monitoring. To date, negative effects of inflation could be effectively reduced through measures such as price adjustments towards customers and optimisation of the use of resources. Inflationary pressures should nevertheless be seen as a risk factor due to high order backlogs with long project preparation times and project durations, especially in the highly competitive area of the European research landscape.

REPORT ON THE SIGNIFICANT RISKS AND UNCERTAINTIES

REPORT ON THE SIGNIFICANT RISKS AND UNCERTAINTIES

#### Geopolitical risks

In light of the current international sanctions against the Russian Federation, possible effects on the business and the risk situation of the company must be monitored on an ongoing basis.

#### Personnel risks

The performance of our employees is essential for the development of our knowledge-based company. The company is competing with other companies for highly qualified specialists and executives. The further development of the AIT management culture, measures for training and further education in connection with the implementation of specific technical and scientific as well as management and support role models will position AIT more strongly as a top employer internationally. Within the framework of international and domestic cooperation projects with universities and scientific institutions, AIT increases its access to well-qualified employees in the course of concrete project work. The "Recruiting & HR Development" department supports the entire AIT recruiting process, from requirement definition all the way to professional search.

New IT tools increase transparency and effectiveness throughout the process and complement the contribution of recruiting to strengthen the AIT employer brand. Considerable attention is given to the topic of gender and diversity management: A separate "Gender Task Force" is continuously developing the topic with employee involvement. Flexible regulations for organising the daily remote work routine ("home office"), taking into account necessary team communication and interaction, strengthen the attractiveness of AIT as an employer.

### Product and environmental risks

Product and environmental risks may arise in the course of laboratory operation with hazardous materials during storage, handling, and disposal. Possible effects obtain in associated incidents with immediate effect on persons and the environment. AIT is therefore taking into account high (safety and security relevant) technical standards for the use of hazardous materials, and these are subject to consistent monitoring of quality requirements and standards.

#### Infrastructure and location rehabilitation risks

In recent years, intensive measures have been taken to implement the location and space concept of AIT and its subsidiaries. This applies both to the main location in Vienna and to the Tech Campus Seibersdorf, where a significant improvement in the surface structures – both technically and in terms of the usability of the surfaces – has been achieved through new construction. Nevertheless, additional measures are necessary especially at the Tech Campus Seibersdorf to improve the structural condition of the buildings and the general infrastructure. In addition, extensive demolition measures will now follow to clean up the old building structure after the construction of new buildings at the Tech Campus Seibersdorf. Overall, these measures effectively counteract risks of plant shutdowns and risks in the safety of the site.

### Overall risk

When analyzing the risks, no situations that would jeopardize the continued existence of the company at present and in the foreseeable future could be identified.

# DESCRIPTION OF KEY FEATURES OF THE INTERNAL CONTROL AND RISK MANAGEMENT SYSTEM – ACCOUNTING PROCESS

A clear management and corporate structure obtains in the Centers, the divisions, the company and the Group. Cross-departmental key functions are managed centrally by the company, with the individual companies of the Group having a high degree of autonomy at the same time, in particular with regard to operation-related processes.

The accounting regulations related internal control system of AIT ensures that accounting records are checked for mathematical and factual correctness. The material check for the release of bills and receipts takes place in the respective organisational units or subsidiaries and the financial and accounting procedures for all organisational units are then centrally managed at AIT – intensively supported by digitized processes and systems. This IT system-supported, centralized management of financial and asset accounting at AIT, with creditor and debtor management and the complete management of all incoming payments and outgoing payments, ensures a comprehensive functional separation of operational and financial processes across the Group.

The functions of the departments which are significantly involved in the accounting process, i.e. accounting and treasury, controlling and business administration, IT, HR, as well as legal and procurement, are clearly separated. The areas of responsibility are clearly assigned.

The financial systems used are protected against unauthorized access by corresponding IT systems. Standard software is used in the area of financial and management systems

An adequate policy and process management (e.g. for management, business, controlling, resources and support processes) has been established and is constantly being updated and developed further. The electronic incoming invoice recording with electronic approval workflow is comprehensively used throughout the AIT Group. The electronic processing of invoices and the complete approval of invoices for payment in the system ensure a high transparency and reliability as well as the maintenance of the process discipline (e.g. four eyes principle).

The ICS, in particular accounting-relevant processes, is regularly checked by the process-independent internal audit team.

The Internal Control and Risk Management System as regards the accounting process, whose essential features have been described above, guarantees with sufficient certainty that business events are accurately recorded in the books, processed and thus properly incorporated into the external accounting.

INTERNAL AUDIT DEPARTMENT

FORECAST REPORT / PERFORMANCE INDICATORS

## INTERNAL AUDIT DEPARTMENT

The Internal Audit Department, directly reporting to the management of the company, supervises the operational and business processes as well as the internal control and risk management system. In particular, the functionality and effectiveness of the Internal Control System and the Risk Management System, the compliance with applicable legal and operational policies, the correctness of all operational processes as well as measures for the protection of company assets are to be examined and assessed in this context.

The audits are carried out according to the annual audit plan approved by AIT management and brought to the attention of the Supervisory Board, and supplemented by short and special audits. The audit reports make recommendations and propose measures which are subject to an ongoing follow-up according to the implementation instruction by management.

# FORECAST REPORT / PERFORMANCE INDICATORS STRATEGIC DEVELOPMENT

2020 saw the adoption of the Research Funding Act (FoFinaG). AIT is listed in the FoFinaG as a central research institution, which means that the responsible ministry (BMK) must conclude performance agreements with AIT in a three-year cycle. The first performance agreement in this regard was signed in January 2022 and thus replaces the previous financing agreements. The performance agreement regulates the basis of the institute's funding by the BMK – in the currently agreed version for the years 2022–2023.

Pursuant to FoFinaG, the next performance agreement to be concluded will cover the period 2024–2026. For the reporting year 2022, financing was implemented on the basis of the agreement for the years 2022–2023. The financing agreement contains both financial and non-financial target indicators for the company which are regularly reported on and tracked as part of the work of the Monitoring Committee of the Supervisory Board.

A selection of non-financial indicators is presented below.

FORECAST REPORT / PERFORMANCE INDICATORS

EVENTS AFTER THE BALANCE SHEET DATE

## INDICATORS FOR THE SCIENTIFIC SUCCESS MEASUREMENT

The following table shows a selection of indicators for the scientific success measurement of the AIT Group. In addition to those of the AIT Austrian Institute of Technology GmbH, the key figures also include those of the fully consolidated Group subsidiaries and the at-equity consolidated Profactor GmbH. By implementing a new "IP database" in the financial year, the figures regarding patents can now be determined even more precisely. The previous year's figures were adjusted accordingly.

Scientific & Performance Indicators	2022	2021
Patents granted (patent families)	82 (24)	65 (28)
Publications in scientific peer review journals with impact factor	251	288
Impact factor	1,517	1,347
Publications in scientific peer review journals without impact factor	63	66
Publications as part of conferences (with review process)	299	296
Publications as part of conferences (without review process)	111	134
Invited Lectures	326	295
Lectures	181	167
Number of PhD students	162	184
Number of PhD students from the international arena	73	88
Proportion of PhD students from the international arena [%]	45%	48%
Completed dissertations	20	38
Completed diploma theses	56	67
Number of habilitated employees	31	33

## EVENTS AFTER THE BALANCE SHEET DATE

No events of special significance have occurred after the balance sheet date that would have led to a different presentation of the asset, financial, and earnings position.

Management:

DI Anton PLIMON e.h.

Prof. Dr. Wolfgang KNOLL e. h.

Vienna, 31 March 2023

## **BALANCE SHEETS**

- Group consolidated balance sheet
- Group consolidated profit and loss statement

48 ANNUAL FINANCIAL STATEMENT 2022

## GROUP CONSOLIDATED BALANCE SHEET

1 January 2022 through 31 December 2022

	EUR	EUR	Status as of 31 December 2022 EUR	Status as of 31 Dec 2021 kEUR
A. FIXED ASSETS				
I. Intangible assets				
1. Concessions, rights		1,938,416.70		1,548
II. Property, plant and equipment				
<ol> <li>Land, rights to land and buildings, including buildings on</li> </ol>				
land owned by third parties	39,570,228.73			31,761
Technical equipment and machinery	26,573,071.80			27,133
Other equipment, plant and office equipment	10,741,091.23			9,899
<ol><li>Advance payments made and plants under construction</li></ol>	3,123,381.08			7,050
		80,007,772.84		75,844
III. Financial assets				
1. Holdings	1,328,503.87			1,036
2. Securities (book-entry securities) of	1/ 055 0/0 00			00.550
fixed assets	16,055,248.82	17 202 752 /0		20,550
		17,383,752.69	00 220 0/2 22	21,587
CURRENT ACCETS			99,329,942.23	98,978
B. CURRENT ASSETS				
I. Inventories		1,502,583.92		2,006
Raw materials, auxiliary materials and supplies		22,194.21		2,000
Finished products     Not yet billable services		22,174.21		U
Non-funded customer projects	8,260,531.70			7,894
less advance payments received	-5,859,624.28			-5,449
Funded research projects	96,208,298.73			87,448
less advance payments received	-82,626,924.80			-73,757
tess advance payments received	-02,020,724.00	15,982,281.35		16,134
		17,507,059.48		18,140
II. Receivables and other assets		17,307,037.40		10,140
Receivables and other assets  1. Receivables from deliveries and services	14,474,799.74			12,470
Receivables from	14,474,777.74			12,470
associated companies	167,647.95			156
3. Other receivables and	. ,.			
assets	1,456,493.94			1,071
		16,098,941.63		13,697
III. Credit balances with credit institutions		124,885,927.01		90,048
			158,491,928.12	121,885
C. DEFERRED ITEMS				
1. Other			2,345,540.34	2,022
). DEFERRED TAX ASSETS			701,521.33	634
A DEL ELIMED TAK AGGETG			260,868,932.02	223,520

	EUR	Status as of 31 December 2022 EUR	Status as of 31 Dec 2021 kEUR
A. EQUITY			
I. Called and paid-in share capital	470,920.12		471
II. Capital reserves (unappropriated)	13,656,321.07		13,656
III. Retained earnings			
1. Legal reserve	47,092.01		47
2. Other reserves (free reserves)	1,466,518.51		1,467
IV. Net profit	41,456,616.14		38,385
thereof profit carried forward kEUR 38,385 (2020 kEUR 33,201)		57,097,467.85	54,026
B. INVESTMENT GRANTS SHAREHOLDERS		34,331,303.73	33,429
C. OTHER INVESTMENT GRANTS			
I. Investment grants by the public sector	37,709,870.88		39,147
II. Other investment grants	96,327.86		97
		37,806,198.74	39,244
D. PROVISIONS			
1. Provisions for severance payments	5,544,639.00		5,480
2. Provisions for pensions	278,102.26		288
3. Provisions for taxes	3,620.00		309
4. Other provisions	24,521,438.30		25,517
		30,347,799.56	31,594
E. LIABILITIES			
Liabilities towards credit institutions	6,336,882.55		0
of which with a residual term of up to one year	524,563.80		0
of which with a residual term of more than one year	5,812,318.75		0
2. Advance payments received on orders	21,054,160.39		14,474
of which with a residual term of up to one year	213,387.72		4,140
of which with a residual term of more than one year	20,840,772.67		10,334
3. Liabilities from deliveries and services	7,231,760.62		5,604
of which with a residual term of up to one year	6,434,841.84		5,604
of which with a residual term of more than one year  4. Liabilities to companies in which a participating	796,918.78 388,158.07		0 211
interest is held:	000,100.07		211
of which with a residual term of up to one year	388,158.07		211
5. Other liabilities	48,727,318.12		31,140
of which with a residual term of up to one year	10,918,271.27		14,875
of which with a residual term of more than one year	37,809,046.85		16,265
of which from taxes	865,820.87		1,733
of which with a residual term of up to one year	865,820.87		1,733
of which for social security	2,316,201.12		2,178
of which with a residual term of up to one year	2,316,201.12		2,178
Total liabilities		83,738,279.75	51,429
of which with a residual term of up to one year		18,479,222.70	24,830
of which with a residual term of more than one year		65,259,057.05	26,599
F. DEFERRED ITEMS			
1. Other		17,547,882.39	13,798
		260,868,932.02	223,520

## GROUP CONSOLIDATED PROFIT AND LOSS STATEMENT

1 January 2022 through 31 December 2022

9. Subtotal of items 1 to 8 (operating result)		5,124,519.91		5,604
c) Other	-35,962,946.25	-36,064,877.26	-32,332	-32,510
a) Taxes, other than under item 18	-101,931.01		-178	
8. Other operating expenses				
of which extraordinary depreciation EUR –206,858.00 (2021 kEUR –65)				
7. Amortization of intangible assets of fixed assets and property, plant and equipment		-11,274,334.28		-11,023
bd) Other social expenditures	-999,224.39	-109,559,456.68	-898	-103,680
bc) Statutory social security contributions	-21,755,575.48		-20,577	
bb) Expenses for severance payments and company pension funds	-1,670,165.36		-1,411	
ba) Expenses for pensions	-1,639,063.89		-1,444	
b) Social expenses	22,121,12211		,	
ab) Salaries	-83,439,403.14		-79,306	
aa) Wages	-56,024.42		-44	
a) Wages and salaries				
6. Personnel expenses	-12,377,403.30	-20,727,742.37	-10,072	-10,770
b) Expenses for purchased services	-12,597,483.30	-20,929,942.59	-0,282	-18,973
5. Expenses for material and other purchased manufacturing services a) Material expenses	-8,332,459.29		-8,282	
c) Other	11,716,774.10	13,535,625.52	10,368	11,916
b) Income from the release of provisions	1,797,509.59	40 505 405 50	1,494	
a) Income from the disposal of fixed assets with the exception of financial investments	21,341.83		55	
4. Other operating income				
3. Change in the stock of finished products and not yet billable services		9,149,860.20		1,280
c) Service revenues	5,275,028.24	89,652,157.45	4,942	90,652
b) Research grants from the shareholder	53,713,197.16		50,801	
a) Funding	30,663,932.05		34,909	
2. Funding, research grants				
1. Revenues		70,615,487.55		67,943
		EUR		kEUR
		2022		2021

-578,282.85 <b>3,071,510.17</b> 38,385,105.97	5,833 -649 5,184 33,201
<b>3,649,793.02</b> -578,282.85	<b>5,833</b>
3,649,793.02	5,833
-1,474,720.07	
-1 /.7/, 72/, 89	229
-303,686.10	-181
-2,295,908.70	-161
14,544.49	11
101,615.24	21
314,337.02	277
694,371.16	262
2022 EUR	2021 kEUF
	EUR 694,371.16 314,337.02 101,615.24 14,544.49 -2,295,908.70

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