Giesecke+Devrient

2022
Annual Report

Creating Confidence

www.gi-de.com

Contents

Strong digital business, good sales, profitable growth – welcome to our 2022 annual report

Despite challenging conditions, fiscal 2022 was a strong year for Giesecke+Devrient. Our core business performed well thanks to our resilient portfolio of solutions for payment, connectivity, identities, and digital infrastructures. We also posted strong profitable growth in the digital fields that have become key pillars of the company's success, and we intend to further expand this position going forward. Total sales increased to a very good figure of around EUR 2.5 billion, thus exceeding the pre-pandemic level, while earnings also rose. In addition, the current strong order intake highlights the potential for future growth. We will continue to systematically and sustainably build on this success, as Group CEO Ralf Wintergerst explains in his interview for the 2022 annual report.

G+D is experiencing particularly robust growth in digital markets. This annual report therefore contains a section dedicated to our digital twins strategy. Across its business units, G+D is strategically expanding its existing portfolio by adding digital solutions. There are examples in each of the four segments – payment, connectivity, identities, and digital infrastructures. When making payments, more and more people are using cards alongside cash, paying with their smartphones, and shopping online. G+D is taking another innovative step forward by positioning itself as a leader in the development of central bank digital currency (CBDC). Also gaining in popularity is the eSIM, a SIM card that is embedded in devices and machines. eSIMs underpin the Internet of Things and the interconnected digital economy, based on powerful 5G connectivity. Digital components are also becoming increasingly important in the identity solutions field. For example, users of digital wallets can manage their digital assets securely and conveniently and store credentials such as driver's licenses, healthcare cards, and ID cards.

As digital interconnection gathers pace, cyber crime is unfortunately also increasing. When businesses, hospitals, public authorities, military installations, or energy suppliers are impacted, the threat can become existential. This is fueling very strong demand for cyber security solutions. Our secunet subsidiary offers customers highly secure solutions for transitioning from the network economy to the cloud economy. It also helps them implement digital security measures to protect critical infrastructures.

Innovation has been part of our identity since the company was founded some 170 years ago – and we continue to reap the benefits. 2022 was a strong year for G+D. We also made a number of acquisitions and increased our stake in various companies, all funded from current cash flow. We expect further growth in 2023.

With its broad portfolio, G+D provides what people, businesses, other organizations, and countries will need more than ever in the coming years: we secure the essential values of the world through security technologies that create confidence.

Information on the company's economic situation and its future is available in our audited management report and the notes to the financial statements.

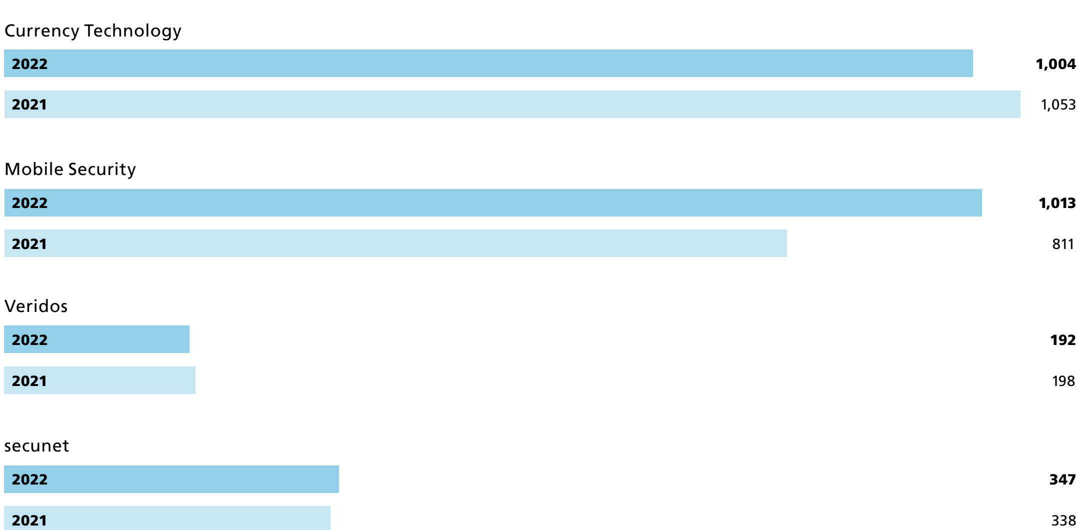
Giesecke+Devrient at a Glance

Giesecke+Devrient Group

EUR million	2022	2021	Change in %
Sales	2,527.1	2,376.6	6.3
Capital expenditure	175.8	118.2	48.7
Research and development	132.7	118.4	12.1
EBITDA	296.9	305.4	−2.8
EBIT	168.2	165.9	1.4
Net income	80.6	85.2	−5.4
Employees as of December 31	12,594	11,768	7.0

Sales by Business Sectors

EUR million



Company Structure

Giesecke+Devrient GmbH

Head office	Number of employees	Sales in EUR millions
Munich	12,594	2,527.1

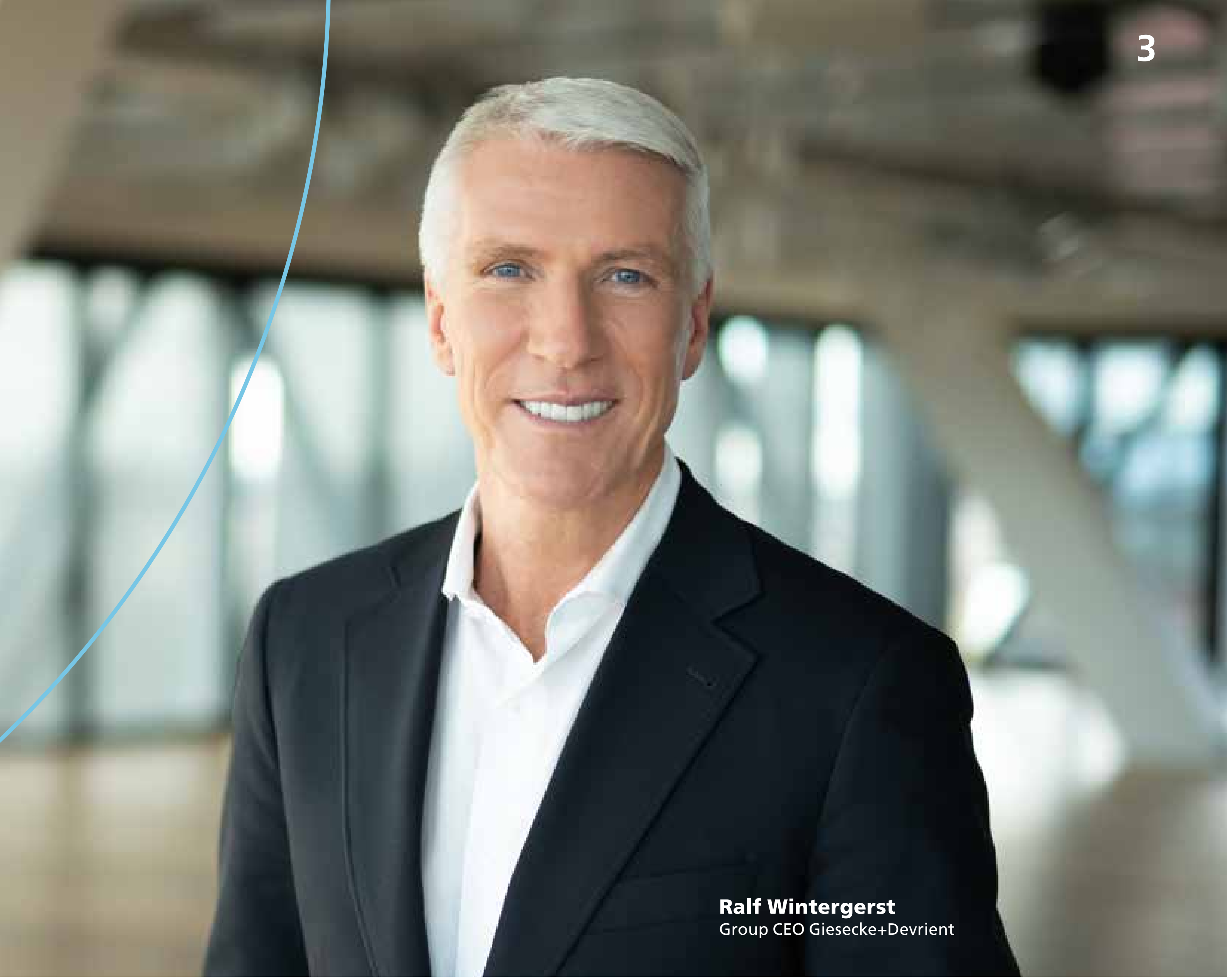
Giesecke+Devrient Currency Technology GmbH	Giesecke+Devrient Mobile Security GmbH	Veridos GmbH 60 %	secunet AG 75.5 %
Head office Munich	**Head office** Munich	**Head office** Berlin	**Head office** Essen
Core expertise Solutions for the entire banknote lifecycle	**Core expertise** Solutions for secure and convenient digital mobility	**Core expertise** Solutions for identity management and control	**Core expertise** Solutions for protecting digital infrastructures

» The **transformation of our company** is bearing fruit. «

In a challenging environment, G+D performed well in 2022 and sees further potential for the future. Its digital business is growing rapidly; G+D is driving forward innovation and making acquisitions. In this interview, Group CEO Ralf Wintergerst looks at what the future holds.

Mr. Wintergerst, 2022 was a year of many challenges worldwide. How did things go for Giesecke+Devrient?
Despite difficult conditions, G+D had a strong year in 2022 thanks to an outstanding performance by the entire G+D team. The whole G+D Group performed well overall, and there were some exceptional achievements in several areas. Our core business proved to be robust. We also achieved above-average growth in our digital business, such as digital payment, cyber security solutions, and also around the Internet of Things with our eSIM products. Delivering this performance in such a difficult climate shows that we are pretty resilient as a company and also that we're successfully investing in exciting prospects for the future. Trusted security solutions from G+D for payment, security, connectivity, and identity will continue to be needed going forward and are becoming increasingly important for people and wider society.

What do the main KPIs look like?
I'm delighted that we improved across many categories. Sales rose to a record high of over EUR 2.5 billion and our order intake – i.e. tomorrow's sales – increased by 22 percent. That got the new year off to a good start with the promise of further growth. Profitability also remained at a high level, with EBIT coming in at EUR 168 million. That's despite the fact we faced significantly increased costs and negative financial effects in many areas. We also made substantial investments, of course, for example in acquisitions and in research and development. Overall, the figures show that the transformation of our company is bearing fruit and we have made good progress. We intend to continue along this path in 2023.



Ralf Wintergerst
Group CEO Giesecke+Devrient

How is this business success distributed within the Group?
Two trends are emerging, which are also reflected in our strategy. Our core business is on a really solid footing. But we are also seeing particularly robust growth of our digital business. We've been systematically developing "digital twins" in these areas over the past few years. Digital twins are digital solutions that complement our physical products. Let me give you two examples from our Payment and Connectivity segments: eSIMs and CBDC.

eSIMs are rapidly going mainstream, both with regard to consumer devices like smartphones and in the IoT, the Internet of Things. "e" stands for embedded and refers to SIMs that are installed when a device is manufactured. At the start of this year, we hit a huge milestone when we reached the 100 million mark for consumer eSIM downloads. G+D is the world's leading provider of eSIM operating systems and eSIM activations, as performed via our data centers.

My second example is central bank digital currency (CBDC). Many central banks – around 90 percent – are currently exploring CBDCs and our Filia® solution is being deployed worldwide. For example, the Bank of Ghana has partnered with G+D to pilot a digital currency, called the eCedi. The Central Bank of Eswatini and the Bank of Thailand have also both chosen G+D to pilot their CBDCs.

Investment and start-up costs play a crucial role when it comes to innovation. Are G+D's new products and solutions paying off?
G+D has a tried-and-tested formula for innovation. It involves conducting our own R&D together with the associated business development activities, investing in promising start-ups via our investment company G+D Ventures, and making significant acquisitions through M&A deals.

This three-pronged approach enables us to accelerate development of products and solutions for customers. Digital solutions and services accounted for a major part of our business in 2022 – overall, around a quarter of our sales are now in digital areas. This clearly shows that customers value our solutions and are using them. As I mentioned, a crucial element of our innovation culture – in addition to conducting our own research – is the acquisition of companies that enhance our portfolio. In 2022, we made a number of such acquisitions and increased our stake in various companies.

What companies did G+D acquire and why?
Our Group company secunet bought cloud specialist SysEleven GmbH because cloud security, like network security, is a key requirement for today's digital infrastructures.

In North America, we acquired the payment and identities business of rival company Valid. This enables us to accelerate our growth in the US, one of the world's largest markets for payment and identity solutions.

We also increased our stake in Swiss company Netcetera to 60 percent. We first invested in the company in 2020 and have been working together successfully ever since in the digital payment and e-commerce markets. We funded all these acquisitions from current cash flow. G+D has very strong financing capabilities, and we plan on making further forward-looking investments.

What impact did the global crises of 2022 have on G+D?
The war in Ukraine and the suffering of the people there have shocked us all. Personally, I feel very affected by this war. The geopolitical and economic situation also presents many challenges for us as a company. We are facing energy price hikes and inflation, and there are also problems in the supply chain, cost increases for raw materials and logistics, and issues caused by the global chip shortage. This short list alone shows how complex the situation is at the moment. We are feeling the effects of these challenges, but overall, we have navigated this tricky environment well so far. I attribute this to our robust, crisis-proof portfolio. At this point, I would also once again like to draw attention to the performance of the entire G+D team. None of our successes would have been possible without this fantastic team.

» Despite difficult conditions, G+D had a **strong year in 2022 thanks to an outstanding performance by the entire G+D team.** «

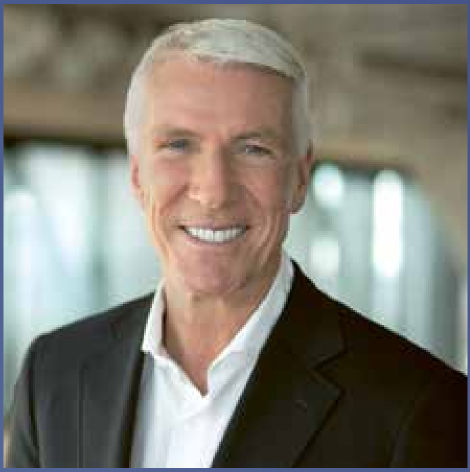
Ralf Wintergerst
Group CEO Giesecke+Devrient

Sustainability is another pressing issue of our time. What progress is being made regarding ESG activities?
Our sustainability strategy covers environmental protection, social responsibility, and responsible governance. It applies at our own sites and also to the products and solutions we supply to our customers. We're engaged in a wide range of activities in this area, but I'll pick two highlights from our green portfolio. We have pledged to replace all virgin plastic in our payment card products by 2030. Recycled, industrially compostable, or biodegradable materials will be used instead. G+D is the first company in this market segment to make such a commitment. Banknotes are also becoming more sustainable. To help achieve this, we launched the Green Banknote Initiative with the aim of working with others to make the production and lifecycle of banknotes more sustainable.

How important is sustainability for your staff?
It's extremely important, especially for our younger employees. And we are finding that many people also want to make their own personal contribution towards improving sustainability. I'm therefore very committed to engaging with our people, listening to their ideas and suggestions, and also acting on them. We have put a number of internal and external mechanisms in place to ensure we manage this process properly. To take a specific example, we held our first ESG hackathon in 2022 on the theme of "Paving our way to net zero." It was a huge success, with G+D employees worldwide submitting more than 200 ideas designed to support our sustainability targets. We were delighted with the wide range of ideas and will put many of them into practice.

Of all the things that happened in 2022, what do you most enjoy looking back on?
Something I've already mentioned, actually. The highlight of the year for me personally was seeing and experiencing the collaboration and cohesion of the entire G+D team and – I hope – also contributing to it in some measure. It's very satisfying when we all pull together to help our projects and our customers succeed. We do that even in difficult and uncertain circumstances, which were unfortunately quite common in 2022. Together, we coped well with the challenges.

What does G+D's future look like?
Our strategy is to improve and expand our existing offerings for customers while also developing digital solutions adjacent to our core business and tapping into new opportunities for future business activities. We will achieve this through a strong commitment to research and development, by engaging in business development projects, and through substantial acquisitions and our corporate venturing activities. All of that will enable us to develop and transform our portfolio. The courage to keep moving forward and the ability to take a long-term perspective are what set us apart as a company. I very much look forward to the future.



Dr. Ralf Wintergerst

Group CEO
Giesecke+Devrient

Dr. Ralf Wintergerst has been Chair of the Management Board of Giesecke+Devrient since 2016. He is responsible for overseeing various central services, comprising Information Systems, Corporate Security, Compliance Management and Auditing, Mergers & Acquisitions, Corporate Brand Communications, Corporate Strategy and Development, Legal, and Corporate Governance. In addition to his role at G+D, Ralf Wintergerst is Chair of the Supervisory Board of secunet.

Dr. Peter Zattler

Group CFO
Giesecke+Devrient

Dr. Peter Zattler has been a member of the Giesecke+Devrient Management Board since 2001. As Chief Financial Officer, he oversees Controlling, Treasury, Accounting, and Tax. He is also responsible for Human Resources and Data Protection. In addition, Peter Zattler has been a member of the Supervisory Board of secunet since 2004.

Gabrielle Bugat

CEO
Giesecke+Devrient Mobile Security GmbH

Gabrielle Bugat has been Chair of the Management Board of Giesecke+Devrient Mobile Security since 2023. She manages the activities related to G+D's smartcard and associated services business and oversees sales, operations, the portfolio, and development. Ms. Bugat is also responsible for driving further expansion of business relating to secure digital payment solutions.

Axel Deininger

CEO
secunet AG

Axel Deininger joined the Management Board of secunet Security Networks AG in 2018 and became its Chair in 2019. His particular responsibilities include Strategy/Business Development, International Sales, Marketing, and Human Resources. As an IT security partner to the Federal Republic of Germany, secunet enables digital sovereignty for governments, businesses, and society.

Dr. Philipp Schulte

Member of the Management Board
Giesecke+Devrient Mobile Security GmbH

Dr. Philipp Schulte is a member of the Management Board of Giesecke+Devrient Mobile Security. In this role, he has been responsible for activities relating to connectivity and the Internet of Things since 2023. Philipp Schulte was previously CFO in the Mobile Security business unit. In addition to his role at G+D, he has been a member of the Board of Directors of Netcetera (Zurich) since 2020.

Group Executive **Committee**

Dr. Wolfram Seidemann

CEO
Giesecke+Devrient Currency Technology GmbH

Dr. Wolfram Seidemann has been CEO of Giesecke+Devrient Currency Technology since 2016. G+D Currency Technology is the market leader for solutions and services relating to banknotes and banknote processing systems. As a partner to central banks and the currency industry, G+D Currency Technology delivers comprehensive expertise and innovative technologies that increase the efficiency of the cash cycle.

Marc-Julian Siewert

CEO
Veridos GmbH

Marc-Julian Siewert has been Chair of the Management Board of Veridos GmbH, a joint venture between Giesecke+Devrient and Bundesdruckerei, since 2022. Veridos provides governments and public authorities with customized end-to-end solutions for secure identities – both physical and digital. Governments and public authorities in more than 100 countries rely on Veridos GmbH's project expertise and product portfolio in the field of integrated identity solutions.

Supervisory Board **Report**

Ladies and Gentlemen:

During the 2022 fiscal year, the Supervisory Board of Giesecke+Devrient GmbH performed all its duties as stipulated by legal provisions and the Articles of Incorporation. The Supervisory Board duly monitored the Management Board and discussed issues of note with its members.

At meetings of the Supervisory Board, the Management Board provided regular, comprehensive information about the situation of the company and the Group as a whole. The Supervisory Board additionally received updates on G+D's performance and finances in the form of quarterly reports. Outside the scheduled meetings, the Chairman of the Supervisory Board was also in regular contact with the Management Board and was kept informed of current issues.

The Supervisory Board held three scheduled meetings (on March 29, July 21, and December 7, 2022) based on detailed reports from the Management Board to review the company's economic situation, including major investment decisions and Group programs.

Important extraordinary topics under discussion at all of the Supervisory Board meetings were the impact of the ongoing global Covid-19 pandemic on the Group's business activities, new geopolitical developments and the risks associated with Russia's war against Ukraine, and the global chip shortage.

In accordance with its duties, the Supervisory Board considered the Group's corporate governance, including the compliance management system, the risk report, the ICS and risk management system, and the internal audit report.

At the March meeting, the Supervisory Board focused in particular on the Russian invasion of Ukraine on February 24, 2022 and on the impact on business and employees in the subsidiaries in the region.

At the July meeting, the Supervisory Board considered the current business situation, including the latest risk report and forecast. It focused in detail on a risk assessment regarding gas supplies to the German sites and the further impact on G+D of Russia's war against Ukraine. The Supervisory Board was also informed about the successful conclusion of contracts for two M&A projects and the establishment of the TrustTech Fund, a co-investment platform launched in conjunction with the European Investment Bank.

At the December meeting, the Supervisory Board reviewed the operational plans for 2023, in addition to the current business situation and the risk report. The meeting also addressed M&A projects and the successful issuing of a promissory note loan. The Supervisory Board approved an updated schedule of responsibilities for the members of the Management Board of Giesecke+Devrient GmbH.

Prof. Klaus Josef Lutz
Chairman of the Supervisory Board

The Supervisory Board duly received the annual financial statements and management report of Giesecke+Devrient GmbH for the period ending December 31, 2022, prepared in accordance with the German Commercial Code (HGB), and the consolidated financial statements and Group management report for the period ending December 31, 2022, prepared in accordance with IFRS, along with the auditor's reports. The annual and consolidated financial statements were examined by the auditor, KPMG AG, which issued an unqualified audit opinion in each case.

The auditor attended the meeting of the Supervisory Board on April 3, 2023, at which the financial statements were discussed. In the course of this meeting, the auditor reported on the main findings of the audit, including on the internal control system in relation to the financial reporting process, and answered questions from the Supervisory Board. No circumstances that would indicate a lack of impartiality on the part of the auditor were reported. The fees for consulting services and other services provided by the auditor of the Group accounts in addition to the audit are disclosed in the notes to the financial statements. The Supervisory Board accepted KPMG AG's audit opinion on both sets of financial statements.

The Supervisory Board concluded its review with no objections raised. It approved the annual and consolidated financial statements, including the corresponding management reports, at its meeting on April 3, 2023.

Giesecke+Devrient GmbH achieved exceptionally good results in fiscal 2022 despite again facing extremely challenging conditions. This was a remarkable performance by the Management Board and staff across the Group. On behalf of the Supervisory Board, I would like to thank the members of the Management Board, all employees, and the Works Councils of the Group for their efforts and high degree of personal commitment during fiscal 2022.

Munich, April 2023

Prof. Klaus Josef Lutz
Chairman of the Supervisory Board

This story and further information are available at **www.gi-de.com/spotlight**

Digital **twins**

for the core business: how G+D is shaping the future

How shall I pay today – cash, card, or digitally? Does my smartphone still have a SIM card? Do I need a passport to get through airport security or can I just use my cell phone? Are public authorities or my energy supplier storing critical data on a central server – or is it safer in the cloud? The answer to these questions is usually: both! Giesecke+Devrient offers appropriate solutions.

Across our four core segments of payment, connectivity, identities, and digital infrastructures, G+D secures essential values with security technologies that create confidence and makes the lives of billions of people more secure. Two things are particularly important to us. We work hard to improve existing products, such as banknotes, payment cards, SIM cards, IoT connectivity solutions, ID documents, and IT security solutions, taking them to the next level of technological innovation. Simultaneously, we are pursuing a strategy of adding digital twins to our existing portfolio.

“Throughout G+D’s 170-year history, progress and change have always been firmly embedded in our identity, and they will continue to shape our future. **We are constantly reinventing ourselves – it’s a fundamental part of who we are.”**

Ralf Wintergerst
Group CEO of Giesecke+Devrient

Central bank digital currency (CBDC) gaining in popularity

In the Payment segment, continual expansion of the available payment methods is a good example of the digital twin strategy. People carry cash and payment cards in their wallet and also have payment apps and virtual cards on their cell phones. Online payment is a further option. G+D is the only provider in the world to offer a complete range of all popular payment methods. This variety of payment methods does not signify the end of the traditional banknote – quite the opposite, in fact! G+D has transformed modern banknotes into a high-tech product, with sustainability also increasingly becoming a priority. Our “Green Banknote” is made from environmentally friendly materials using low-resource production processes.

Secure and easy payments for everyone – that is the objective behind central bank digital currencies (CBDCs). Ninety percent of central banks are currently exploring central bank digital currencies. CBDC is a completely new secure, universal, and inclusive digital payment method. The list of advantages is long because CBDC combines the benefits of both cash and cashless transactions. It is legal tender issued by central banks. G+D was quick to recognize the importance of CBDCs and launched Filia®, a solution that has already picked up a number of awards. Among the banks partnering with G+D is the Bank of Ghana, which is already piloting a digital currency, called the eCedi. The Central Bank of Eswatini and the Bank of Thailand have also both chosen G+D for their CBDC roll-outs.

Payment cards: innovative, sustainable, digital

G+D’s payment cards are likewise innovative and sustainable. The range includes cards made of recycled material that support the lifestyle choices of their users and also cards that incorporate biometric smart technology for payment authentication. Since payment cards offer significant growth potential, G+D acquired the US business of rival firm Valid in December 2022.

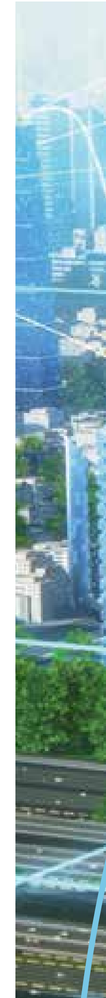
Digital twins of these physical products are also becoming increasingly popular. Cards are no longer just something you carry in your wallet. As a stored payment method, they are the backbone of mobile, contactless payment via smartphones and in e-commerce – two fields that have huge growth rates. To ensure that remains the case, a key expectation of banks, retailers, and consumers must be met: security. G+D ensures that data is encrypted (tokenized) in the digital card and thus not visible to unauthorized parties. In the rapidly growing e-commerce sector, we help online stores create a smooth shopping experience for their customers – tokenization has a crucial role to play here as well. It is now possible to pay and check out with a single click. These and other solutions for securing transactions are provided by G+D in conjunction with its Netcetera subsidiary. Following significant shared success in this field, G+D increased its shareholding in Netcetera in February 2023 and now holds a majority stake.

The long version of this article and statements on the technologies are available at **www.gi-de.com/spotlight**

The Internet of Things:
from connecting everyone to **connecting everything**

Networking, communicating, and doing business via the Internet has been routine for most people for many years now. We already know that the Internet connects everyone – but now the Internet of Things (IoT) is going further and connecting literally everything: sensors, machines, devices, factories, cities, vehicles. Estimates suggest that by 2026, there will be around 26 billion digitally connected devices in the IoT. Of pivotal importance for security in cellular IoT is the SIM card, which serves as a kind of ID card for a device. This enables it to authenticate itself and establish reliable connections. We currently manage well over three billion SIM cards that are in use around the world. In addition, we recently reached the 100 million mark for consumer eSIM downloads.
To ensure devices in the IoT are connected in the most advanced and secure way, they need secure operating systems that run on the SIM cards. In the eSIM field in particular, more than 750 million G+D operating system licenses are now in use. The "e" stands for embedded and refers to SIM cards that are installed when a device is manufactured. This means our eSIM cards and the relevant services perform even better, are more robust, and – thanks to the use of less material and having a smaller logistics footprint – are 46 percent more environmentally friendly than plug-in SIM cards, measured over the product lifecycle. That is the finding of an independent study conducted by Fraunhofer IZM for G+D. The figure can likely be regarded as a minimum value, since the advantages grow with every virtual re-registration. G+D is the world's leading provider of eSIM operating systems and eSIM activations (as performed via our data centers).

Given this momentum, it is no surprise that G+D is heavily committed to researching further innovations. G+D recently launched a new digital twin of the physical SIM card. Known as the iSIM, it is already being deployed in a number of commercial projects. The "i" stands for integrated. Unlike with the SIM and eSIM, operating systems and security features are not stored on a dedicated chip. Instead, they are stored and executed in a secure enclave on another processor. We believe that eSIM and iSIM solutions have the potential to further revolutionize the market for connected devices and technologies.



Digital identity on smartphones

Digital components are also important in the identity solutions market, which is home to Veridos, our joint venture with Bundesdruckerei. More than 100 of the nearly 200 countries in the world use Veridos solutions, which include reliable registration and verification systems, solutions for border controls, secure official documents such as passports and ID cards, and strategies for preventing identity theft.

Alongside physical identity documents, digital transformation is already well under way. In the EU, for example, it was agreed in 2014 that member states must give their citizens access to a digital identity (eIDAS initiative). Using digital wallets, users can manage their digital assets and data securely and conveniently and carry out transactions in the digital world. A variety of digital credentials can be stored in these wallets, including driver's licenses, healthcare cards, and ID cards.

Digitalization also makes traveling and airport check-in much smoother. We implemented a corresponding solution at Luxembourg airport in 2022, which includes self-service kiosks for pre-registration and complies with the requirements of the EU's new EES border control system (Entry/Exit System). Passengers from third countries can register in advance online and enter biometric information, enabling them to benefit from fast, secure verification at border crossing points.

Critical data **secure in the cloud**

As digital interconnection gathers pace, cyber crime is also increasing. When businesses, hospitals, public authorities, military installations, or energy suppliers are impacted, the threat can become existential. Countries and businesses can, however, protect themselves effectively through highly secure digital infrastructure. Digital communication of sensitive data must meet strict security requirements. This applies in particular to public authorities, healthcare actors, and operators of critical infrastructures (CIs), such as energy suppliers.

In security-sensitive areas like these, many elements of modern-day digital work practices used to be out of the question. Fortunately, this is no longer the case. For example, secunet makes home-working and remote working feasible. The necessary foundation is provided by our high-security solution SINA® (Secure Inter-Network Architecture), which enables sensitive or classified information to be processed, stored, and transmitted via the Internet. SINA can also be used to prevent phone tapping and protect video conferences.

Highly secure connectivity now also extends to the cloud. Previously, this was often not an option for public authorities and CIs. secunet operates its own cloud platform, based on the successful open-source system OpenStack and enhanced with high-security technology. In 2022, secunet acquired cloud specialist SysEleven and now offers a sovereign cloud solution that is made in Germany.

Helping to shape the **future of tomorrow** today

The future is all about digital transformation. G+D is committed to making the right decisions today for solutions that will deliver substantial added value for customers tomorrow and beyond – and also move the company forward. A passion for research and discovery, targeted acquisitions, and venture finance provide the necessary basis.

Expansion of software-based business models, with their attractive scalability, should provide an additional tailwind. New and exciting trends include Web 3.0 and the metaverse, where people can actually own digital assets. These tokenized assets will be based on distributed ledger technology (DLT), with blockchain being the best-known form of DLT. The trustworthiness and secure management of data play a vital role here. G+D is also already addressing the cyber threats of the future. Commercial availability of quantum computers and artificial intelligence will create a need for powerful encryption methods, such as post-quantum cryptography. The digital identities of people, users, and machines is an overarching theme in this context, characterized by tight interlinking and mutual dependencies.

For a leading technology company like G+D, innovation is a key factor. As such, our employees are a crucial element in G+D's continued success. Their skills and commitment are vital for ensuring that our promise remains true into the future:

» G+D **secures the essential values of the world** through security technologies that create confidence.

Group Management Report

as of December 31, 2022

Please note: Figures shown may differ from the mathematically exact values (monetary units, percentages, etc.) due to rounding.

1. Group Profile

Giesecke+Devrient (G+D) specializes in security technology that creates confidence. As a trusted partner to international customers with extremely demanding requirements, G+D safeguards essential assets around the world.

G+D develops customized technology in four core areas with passion and precision:

Payment

G+D is a global market leader in products and solutions for secure payment. With its holistic portfolio for official currencies and electronic and digital payment solutions, G+D occupies a unique position in the payment ecosystem. Within this core area, the **G+D Currency Technology** business sector provides solutions for end-to-end secure cash management. This includes the Banknote Solutions division, which produces and distributes banknote paper, banknotes, and high-tech security features. The portfolio of the Currency Management Solutions division includes banknote processing systems of different sizes and complete cash center solutions. Complementing this portfolio for physical currencies, subsidiary **G+D advance52** provides comprehensive solutions for developing and operating central bank digital currencies (CBDCs). As part of the **G+D Mobile Security** business sector, the Secure Transactions + Services division covers all business relating to smartcards and secure electronic and digital payment in the banking sector. It also provides secure access and identity management solutions for the healthcare sector, smart mobility, and corporates, including associated services, such as production, personalization, and product development.

Connectivity

Billions of devices are already connected to the Internet of Things (IoT) – with more being added every second. As a technology leader with extensive expertise in secure connectivity, G+D is both partner and pioneer when it comes to tackling all the challenges around the Internet of Things. The Trusted Connected Devices division is part of **G+D Mobile Security** and enables secure connections to mobile networks and the IoT. It covers SIM cards, embedded SIMs, SIM management services, eSIM management including secure operating systems, and solutions for enterprise IoT.

Identities

Secure personal identities enable access to government services, education, financial products, and mobility. They are therefore foundational for modern life in an interconnected world. G+D provides governments around the world with technologies that enable secure and efficient identity management while at the same time creating seamless and convenient identification and authentication processes for citizens. Through **Veridos**, a joint venture with state-owned Bundesdruckerei, G+D provides innovative solutions for authentication and verification of people and objects. These include highly secure physical and digital documents and border control and identification systems.

Digital infrastructures

Digitalization and connectivity are growing exponentially – and with them the number and complexity of cyber attacks. G+D enables governments, businesses, and wider society to maintain their digital sovereignty. Listed subsidiary **secunet Security Networks AG** is an IT security partner to the Federal Republic of Germany and Europe's leading provider of high-quality cyber security solutions. It offers public authorities and industrial enterprises an extensive portfolio of products and consulting services for the protection of data and infrastructures as well as for the transmission, storage, and processing of information. This includes encryption technology up to the highest security level.

The four core areas listed above encapsulate the G+D business portfolio across the Group. G+D operates as a holding company comprising the legally independent business sectors **G+D Currency Technology, G+D Mobile Security, Veridos,** and **secunet.**

Parent company G+D GmbH acts as the Corporate Center. As such, it manages the overall direction of the G+D Group and actively supports strategic development of the individual business sectors. It handles topics that are of strategic importance for the whole Group. These include M&A activities, strategic initiatives for developing future and new digital business activities, investment company G+D Ventures, the Chief Technology Office (CTO), and the Corporate Development Fund. G+D advance52, which has been responsible for G+D's activities around central bank digital currencies since 2019, is also organizationally attached to the Corporate Center. Within the Corporate Center, Shared Services covers functions such as IT, accounting, and HR. As part of a strategic efficiency improvement program, G+D decided to establish Giesecke+Devrient Group Services GmbH & Co. KG as an independent shared services company, effective January 1, 2022. The aim is to bring together similar kinds of services, such as IT and procurement, and transactional service elements from accounting and HR within Group Services so they can be delivered more efficiently across the Group. A dedicated G+D real estate company holds and operates the buildings at the Munich site and leases them to the Group companies.

G+D employs 12,594 people across 33 countries.

Management Structure in the Core Areas

Payment Secure payment transactions: physical, electronic, and digital	**Connectivity** Secure connectivity for mobile devices in the Internet of Things	**Identities** Identity assurance and authentication of people and things	**Digital Infrastructures** Protection for digital systems, networks, and confidential data
Currency Technology Banknote Solutions	**Mobile Security** Trusted Connected Devices	**Veridos**	**secunet**
Currency Technology Currency Management Solutions			
Mobile Security Secure Transactions + Services			
advance52 CBDC			
Corporate Center			

2. Business Development

G+D remained robust and resilient in 2022 in a complex and challenging market environment. By far the most serious event of the reporting year was the Russian invasion of Ukraine, followed by the realignment of energy supply and strong inflationary pressure in many countries. In addition, the consequences of Covid-19 remained apparent, although catch-up effects were evident at the start of the year as the pandemic subsided worldwide. Many governments also introduced generous monetary and fiscal stimulus packages at the beginning of the year. The resulting rise in inflation was accepted as a temporary effect of the post-pandemic upswing.

Following the outbreak of war in Ukraine in February 2022, gas supplies from Russia to large parts of the world were significantly reduced or cut off. This pushed up inflation in many countries and plunged the world – particularly Europe – into an energy crisis. Russia's war of aggression also dampened growth worldwide and exacerbated existing supply difficulties in individual markets.

In response to rising inflation, many central banks tightened their monetary policies over the course of 2022, thereby slowing global growth prospects. The economic impact of the Covid-19 pandemic is also still being felt. Global supply chains have not yet returned to normal and China's strict zero-Covid policy, which was only abandoned in the fourth quarter of 2022, curtailed the performance of the global economy.

The International Monetary Fund (IMF) is proceeding on the assumption that the global economy grew by just 3.2 % in 2022. According to its forecast, more than a third of the global economy actually shrank in 2022 or will do so in 2023, while the three largest economies – the United States, the European Union, and China – continue to stagnate. German GDP grew by 1.8 % compared with the previous year. Global inflation climbed from 4.7 % in 2021 to 8.8 % in 2022.

2.1. Group Business Performance

The Group is managed on the basis of net sales, earnings before interest and taxes (EBIT), earnings before interest, taxes, depreciation, and amortization (EBITDA), capital expenditure, working capital, free cash flow, and return on capital employed (ROCE)[1].

Thanks to its resilient, forward-looking portfolio of security-related solutions in the fields of payment, connectivity, identities, and digital infrastructures, G+D had a successful year overall in 2022 with strong financial results. Group sales increased significantly. The outlook for the future is also positive, partly because of very strong order books across all business areas that total EUR 1.7 billion. This represents an increase of 18 %, with a simultaneous record high in Group sales. The significant order backlog will provide the basis for further growth in fiscal year 2023.

[1] Ratio of EBIT to average capital employed (year-end value in each case);
capital employed = intangible assets + property, plant and equipment + financial investments accounted for under the equity method + inventories + accounts receivable trade – accounts payable trade

The financial figures and the portfolio are both performing very well, as reflected in good results for the G+D Group overall and exceptional achievements in individual areas. The core business remained stable in 2022. This is due to having a very resilient and crisis-proof portfolio, since solutions for payment, connectivity, identities, and digital infrastructures are also needed in turbulent times. In addition, G+D posted strong profitable growth in digital markets. In recent years, the Group has been systematically developing digital solutions that complement the established physical products across all four core areas – and is now reaping the benefits.

G+D's growth strategy includes organic growth, investment in new technology fields, and targeted expansion of the portfolio. In December 2022, the Group acquired the payment and identity solutions business of Valid in the United States. This will enable G+D to accelerate its growth in the US, one of the world's largest markets for payment and identity solutions. Given the ongoing industry-wide supply chain issues, going forward, G+D's customers will benefit from the increased size of the company. The Secure Transactions + Services (STS) division acquired Valid's US-based production facilities for payment cards, while Veridos is further expanding the existing business with driver's licenses and other identity solutions. This investment strengthens G+D's position and portfolio and provides further impetus for accelerated growth in the US.

Another important acquisition was made in 2022 by secunet. The Essen-based G+D subsidiary bought cloud specialist SysEleven, which is headquartered in Berlin. SysEleven is an independent German provider of cloud infrastructure, cloud services, managed services, and managed Kubernetes. The company has its own open source-based cloud infrastructure with ISO 27001-certified data center locations in Germany (Infrastructure-as-a-Service). It provides MetaKube, a platform for efficient management and optimization of computing, storage, and network resources based on Kubernetes (managed Kubernetes). The acquisition of SysEleven enables secunet to accelerate its activities in the fast-growing market for secure cloud infrastructure and to benefit from SysEleven's well-established, independent access to the market.

2.1.1. Results of Operations

In fiscal year 2022, G+D's sales increased by 6.3 % to EUR 2,527 million.

Sales by Business Sector

EUR million	2022	2021	Change absolute	Change in %
Currency Technology	1,004.1	1,053.0	−48.8	−4.6 %
Mobile Security	1,013.3	811.3	202.1	24.9 %
Veridos	192.3	197.7	−5.4	−2.7 %
secunet	347.2	337.6	9.6	2.8 %
Consolidation	(29.9)	(22.9)	−6.9	−30.3 %
Total	**2,527.1**	**2,376.6**	**150.5**	**6.3 %**

Sales for **Currency Technology** were down overall compared with the previous year. The Banknote Solutions division saw a drop in demand due to the geopolitical situation, especially in terms of new banknote issuance. Accordingly, sales fell year-over-year. By contrast, the Currency Management Solutions division exceeded expectations, particularly with regard to high-performance banknote processing systems and in its services business. It also recorded a strong order intake for major projects.

Mobile Security achieved a significant improvement in sales in 2022. Both the Trusted Connected Devices (TCD) division and the Secure Transactions + Services (STS) division set new records. The major growth drivers for the Secure Transactions + Services division were strong demand in the payment market and catch-up effects in the public sector. The Trusted Connected Devices division recorded strong gains for integrated SIM card solutions (eSIM). TCD is the eSIM market leader and now manages more than 100 million eSIM downloads in the consumer devices field alone. In addition, TCD substantially increased its lifecycle sales.

In difficult market conditions, joint venture **Veridos** largely equaled its sales performance of the previous year. The semiconductor shortage in the reporting year and the after-effects of the pandemic were the main reasons why it was unable to fully meet the high demand for ID documents.

secunet once again exceeded the strong performance of the previous year, ending fiscal year 2022 with a new record high that was slightly above the record set in the previous year. The level of sales achieved and associated gains in core markets are a testament to secunet's sustained strong performance.

Consolidated Income Statement (IFRS)

EUR milion	2022	2021	Change absolute	Change in %
Net sales	**2,527.1**	**2,376.6**	**150.5**	**6.3 %**
Cost of sales	−1,784.2	−1,692.9	−91.3	5.4 %
Gross profit	**742.9**	**683.7**	**59.2**	**8.7 %**
Gross margin (% of sales)	29.4 %	28.8 %	0.6 p.p.	2.2 %
Selling, R&D, and general administrative expenses	(571.7)	(524.7)	−47.0	−9.0 %
Other operating income and expenses	4.8	7.8	−3.0	−38.9 %
Operating profit	**176.0**	**166.8**	**9.2**	**5.5 %**
Financial income/(expenses)	(7.8)	(0.9)	−6.9	>−100 %
EBIT	**168.2**	**165.9**	**2.3**	**1.4 %**
EBIT-margin (% of sales)	6.7 %	7.0 %	−0.3 p.p.	−4.7 %
Interest income	2.6	1.9	0.7	35.3 %
Interest expense	(19.2)	(17.1)	−2.1	−12.5 %
Earnings before income taxes (EBT)	**151.6**	**150.7**	**0.9**	**0.6 %**
Income taxes	(71.0)	(65.5)	−5.4	−8.3 %
Net income	**80.6**	**85.2**	**−4.6**	**−5.4 %**
Reconciliation to EBITDA				
EBIT	168.2	165.9	2.3	1.4 %
plus depreciation and amortization[1]	(128.5)	(139.5)	11.0	−7.9 %
EBITDA	**296.9**	**305.4**	**−8.5**	**−2.8 %**

[1] Depreciation and amortization = depreciation and amortization of property, plant and equipment and intangible assets + write-downs on investments in associated companies

For G+D, like for other businesses, 2022 was dominated by the ongoing Covid-19 pandemic, unresolved logistics and supply chain issues, and the energy crisis – particularly in the energy-intensive banknote segment. Despite these challenges and a significant increase in R&D activity, the impact of M&A projects, and negative financial income, G+D boosted Group sales and EBIT compared with the likewise successful previous year.

Gross profit increased by 8.7 % compared with the previous year due to the rise in sales volumes and an improved gross margin. The gross margin rose by 0.6 percentage points to 29.4 %; this increase was mainly due to margin improvements at Mobile Security and Veridos.

Structural costs for selling, R&D, and general administration rose by 9.0 % compared to 2021, mainly as a result of increased R&D activity and costs associated with our major M&A projects. This item thus increased slightly ahead of sales. Selling expenses amounted to EUR 268.2 million. The rise of 7.6 % compared to the previous year is a reflection of the Group's sales growth and includes a year-over-year increase in sales activity, particularly at Currency Technology and Veridos, undertaken due to a difficult market environment. In the Mobile Security business sector, where sales grew disproportionately, selling expenses also increased but rose at a lower rate than sales. Depreciation, amortization, and impairments of accounts receivable were comparable to the previous year.

G+D is reinforcing its excellent market position through targeted research activities in the field of digitalization and by boosting its spending on the sustainable development of products and technologies. In the Trusted Connected Devices division in particular, the number of employees working on digitalization was increased, as planned. secunet also stepped up its R&D expenditure, especially in relation to the “konnektor” solution for digital telematics connectivity in the healthcare sector. Consequently, research and development costs rose by 12.1 % to EUR 132.7 million.

General administrative expenses increased by 8.7 % to EUR 170.8 million in the reporting year. The increase resulted from the costs associated with having a greater number of strategic projects, the splitting of Mobile Security into two separate legal entities, and costs relating to two large M&A projects. Additional staff was also hired, primarily in the IT and HR departments.

Other operating income and expenses decreased by EUR 3.0 million. The main reasons for this were proceeds from direct insurance and from the sale of property, plant and equipment, and also the receipt of pandemic-related grants in the previous year.

Operating profit improved in line with sales growth, climbing by 5.5 % to EUR 176.0 million.

Financial income was adversely impacted to the tune of EUR –6.8 million compared with the previous year due to weak stock market performance. Effects from securities totaled EUR –9.4 million, compared with income of EUR 6.8 million in the previous year. Net income from foreign currency transactions and currency hedging costs was EUR –0.2 million (previous year: EUR -6.8 million). Investments in consolidated companies consolidated at equity contributed EUR 1.6 million to financial income (previous year: EUR –0.9 million).

At EUR 168.2 million, EBIT exceeded the record set in the previous year and reached a new high in G+D’s history. The EBIT margin, meanwhile, was 6.7 %, 0.3 percentage points below the prior-year level.

Net interest income declined in 2022 by EUR – 1.5 million to EUR – 16.6 million. It comprised interest of EUR 9.6 million on pension obligations (previous year: EUR 8.1 million) and interest expenses largely for financial and other liabilities of EUR 9.5 million (previous year: EUR 9.0 million). Interest income totaled EUR 2.6 million (previous year: EUR 1.9 million).

The tax rate was 46.8 %, 3.4 percentage points above the previous year’s level. The difference compared to the expected tax rate of 31.5 % is due to provisions for anticipated tax audits, particularly in Slovakia and China (–6.8 %), and the non-recognition of deferred tax assets on loss carryforwards (–3.2 %) and non-deductible withholding tax (–3.2 %).

Due to special effects relating to taxes, net income decreased in the reporting year by –5.4 % compared with the previous year and stood at EUR 80.6 million.

At EUR 296.9 million, EBITDA was slightly below the prior-year level despite improved EBIT. This was due to impairment losses on fixed assets in the previous year.

2.1.2. Research and Development

Technological innovations have always been the driver of G+D's development. This innovation currently has several focal points. The robust, forward-looking core portfolio is continuously being developed. In addition, G+D is investing in growth and technological innovation in its digital business. There is also a focus on developing sustainable, environmentally friendly solutions across all business areas, with examples including the green banknote, the green SIM, and payment cards made from ecological materials.

To drive forward transformation of the company while at the same time strengthening the core areas, the Group continuously invests in the development of innovative technologies. R&D activity is focused on the company's four key fields: payment (secure physical, electronic, and digital payment processes), connectivity (secure connections for mobile devices in the Internet of Things), identities (safeguarding identities and authenticating people and things), and digital infrastructures (protection for systems, networks, and confidential data).

Promising technologies, such as digital identities, are also researched and developed in cross-divisional initiatives.

In addition to in-house development of innovations and extensive investment in new areas and in G+D's core business, G+D also works with and invests in start-ups (corporate venturing) and makes targeted acquisitions that complement the portfolio in forward-looking business areas.

At EUR 176.9 million, total spending on G+D's own research and development in 2022 was above the already high level of the previous year. This spending was spread across customer-specific development costs (EUR 31.8 million), capitalized research and development costs (EUR 12.4 million), and pure R&D expenditures (EUR 132.7 million). In particular, the further increase in pure R&D activities unrelated to customer projects is of high strategic importance for the Group's medium- and long-term development.

Research and Development

	2022	2021	Change in %
Number of R&D employees (FTE)	1,304	1,216	7.2 %
Proportion of total employees (%)	10.4 %	10.3 %	0.2 %
Spending on R&D (EUR million)	176.9	164.0	7.9 %
thereof pure R&D expenditure (EUR million)	132.7	118.4	12.1 %
R&D ratio (% of sales)	5.3 %	5.0 %	5.1 %
thereof cost of goods sold (EUR million)	31.8	29.2	8.7 %
thereof capitalizable costs (EUR million)	12.4	16.4	−24.4 %
Capitalization ratio (%)	9.3 %	13.8 %	−32.6 %
Amortization of capitalized development costs (EUR million)	13.4	10.1	32.9 %

In the **payment** market, G+D is committed to driving forward innovation in its holistic payment portfolio for official currencies as well as electronic and digital payment solutions. With innovative effect technologies and our overarching system competence, we successfully won a number of projects to introduce new banknote series for major lead users in 2022.

The durability of banknotes remains an essential requirement. To consistently improve this, we developed an exceptionally durable banknote that is made from sustainable and recyclable raw materials to ensure maximum possible climate neutrality. After having unveiled the banknote in the spring of 2022, the technology is now mature and already in circulation in some countries. In addition, the associated recycling strategies, i.e. end-of-life scenarios, are currently being added and refined.

A growing global trend in the payment solutions market is central bank digital currency (CBDC). Ninety percent of the world's central banks are currently pursuing central bank digital currency projects. CBDC is a new, secure, and inclusive payment method that combines the benefits of cash and cashless transactions. G+D has launched Filia® in this context, a solution that has picked up a number of awards and is already in use. Among the banks partnering with G+D to launch a CBDC is the Bank of Ghana, which has already piloted a digital currency called the eCedi. The Central Bank of Eswatini and the Bank of Thailand are also both working with G+D on CBDC roll-outs. G+D will continue to expand and develop CBDC usage scenarios; central bank digital currency is expected to become a driver of innovation in the digital economy over the coming years.

Today's consumers expect payment solutions to be convenient, easy to use, and accessible at all times. They also need to be totally secure and reliable. G+D provides digital payment solutions for the entire value chain and a comprehensive portfolio for card payment, which includes high-end smart cards and mobile applications for the use of debit, credit, and prepaid cards.

In the Mobile Security business sector, R&D activities continued to be focused on adapting current products to new semiconductor platforms and on subsequent roll-out and migration across nearly all customer segments. This was an essential prerequisite for dealing effectively and successfully with the ongoing global semiconductor shortage.

To provide our customers with even more support in meeting their own sustainability objectives, we are also converting the card portfolio to recycled, industrially compostable or biodegradable materials. This underlines G+D's pledge to replace all virgin plastic in its payment card products by 2030.

In the Secure Transactions + Services (STS) division and the Trusted Connected Devices (TCD) division, the emphasis was on the continuous development of existing product platforms and operating systems for high-security card solutions, converting production and data generation systems to modular, scalable architectures, and migrating existing digital solutions and services to highly secure cloud platforms.

In the **connectivity** market, the Internet of Things (IoT) is an important focus of research and development. The IoT already digitally connects billions of devices, machines, sensors, facilities, buildings, and road users – with more being added every day. Alongside powerful cell phone networks, the IoT depends on secure and efficient management of connectivity and authentication. The eSIM (embedded SIM) is increasingly being used for this purpose, and G+D manages more than 100 million eSIM downloads in the consumer field alone. The latest innovative product in this field, which G+D is actively helping to create, is the iSIM card. This tamper-resistant element forms part of a system-on-a-chip (SoC), rather than being removable, like a SIM card, or soldered into the device, like an eSIM. G+D has already deployed the iSIM in a number of commercial projects and believes it has huge potential to further boost the momentum of the IoT when combined with G+D's management systems for iSIM solutions.

In the **identities** market, Veridos continues to develop physical solutions for identity management. The company's R&D activities are focused on digital transformation and on digitalization and automation of the travel experience. One example here is the VeriCORE product family, which supports the lifecycle of official documents through a modern software platform. This involved developing components for collecting citizen data in registration offices as well as modules for verification and approval processes and for optical and electronic document personalization. A smart travel platform is another project, which enables governments to offer pre-registration and issue electronic visa and travel authorizations to inbound travelers. Using a smartphone app, holders of an e-pass or an ID card can securely upload their biometric data and biographical information to the smart travel platform or present it at an airline check-in point, for example. The portfolio is also being expanded to include products and solutions for verifying documents and identities. A key area of R&D activity was the launch of a new pre-registration kiosk that paves the way for fast, automated border control checks.

In the **digital infrastructure** market, **secunet's** research and development activities focus on hardware and software solutions, applications, and architectures in areas with demanding IT security requirements, such as the cloud, the Internet of Things, eGovernment, eHealth, and biometrics. The aim is to continue developing the solution portfolio in alignment with customer needs and commercial considerations.

The following are two examples: Digital communication of sensitive data must meet strict security requirements. This applies in particular to public authorities, healthcare actors, and operators of critical infrastructures (CIs). secunet's solutions enable sensitive or classified information to be processed, stored, and transmitted via the Internet. secunet also prevents phone tapping, protects video conferences, and enables secure communication via messenger. Similarly, highly secure connectivity in the cloud was previously often not an option for governments, public authorities, and CIs. secunet provides its own cloud platform to enable this connectivity; the company is significantly expanding its business activities in the field of secure access to the cloud, including through the acquisition of SysEleven.

Across all markets and business areas, G+D's research and development activities are focused on sustainable, environmentally friendly innovations. This allows the company to reduce its own carbon footprint and also helps its customers achieve their climate objectives.

2.1.3. Capital Expenditure

At EUR 174.3 million, investment[1] in 2022 was significantly above the prior-year level due to M&A activity. Direct investment in property, plant and equipment and intangible assets was below the prior-year level, at EUR 82.2 million. However, it should be noted that acquiring the activities of Valid US involved investment in production facilities and machinery, while the acquisition of SysEleven entailed investment in software and other technologies.

Capital Expenditure and Depreciation/Amortization

EUR milion	2022	2021	Change absolute	Change in %
Investment in property, plant and equipment and intangible assets[1]	82.1	86.5	−4.4	−5.1 %
Investment in equity interests	93.7	31.7	62.0	195.4 %
Total capital expenditure	175.8	118.2	57.6	48.7 %
Depreciation/amortization[1]	103.7	103.7	0.0	0.0 %

[1] Capital expenditure and depreciation/amortization before IFRS 16.

Currency Technology and Mobile Security both mainly invested in the modernization and optimization of production facilities.

In the Banknote Solutions division, funds were invested in production facilities for manufacturing a new class of technologically enhanced fluorescent materials. In addition, there was investment in productivity-boosting measures relating to machinery and infrastructure and in sustainability improvements. The Currency Management Solutions division mainly made replacement investments in 2022.

In 2022, investment at Mobile Security focused on upgrading production facilities to the latest technology to further boost cost efficiency and meet current market requirements. The bulk of investment was in the North American market, with the aim of increasing capacity to meet growing demand. The roll-out of a new ERP system at a subsidiary was the biggest IT investment of the year. There was also significant investment in expanding and operating our data centers in order to drive forward our range of solutions.

Veridos invested in expanding production capacity in Greece. Development work relating to software solutions was also capitalized.

Investment in intangible assets (EUR 23.5 million) primarily relates to capitalized R&D expenses and capitalized software solutions.

G+D is expanding its business portfolio in new technological fields and reinforcing its market position in core business areas by investing in other companies (EUR 92.1 million). In fiscal year 2022, G+D acquired German company SysEleven as well as the payment and identity solutions business of Valid in the US. It also acquired stakes in other companies via G+D Ventures.

Depreciation/amortization was comparable to the previous year.

2.1.4. Assets and Liabilities

Balance Sheet Summary (IFRS)

EUR milion	2022	2021	Change absolute	2022 % of total assets
Assets	**2,991.7**	**2,630.1**	**361.6**	
Current assets	**2,026.7**	**1,664.1**	**362.6**	**67.7 %**
thereof inventories	477.1	338.4	138.6	15.9 %
thereof current receivables	563.3	441.6	121.7	18.8 %
thereof contract assets	200.3	255.2	–55.0	6.7 %
thereof cash and cash equivalents	610.0	401.1	208.9	20.4 %
Non-current assets	**965.0**	**966.0**	**–0.9**	**32.3 %**
thereof property, plant and equipment	513.4	500.8	12.6	17.2 %
thereof intangible assets	246.6	188.5	58.1	8.2 %
thereof other non-current assets	204.9	276.7	–71.7	6.9 %
Liabilities and equity	**2,991.7**	**2,630.1**	**361.6**	
Current liabilities	**1,046.8**	**842.1**	**204.7**	**35.0 %**
thereof current financial liabilities	113.5	22.4	91.1	3.8 %
thereof current lease liabilities	22.8	19.1	3.7	0.8 %
thereof provisions	76.8	108.2	–31.4	2.6 %
thereof trade payables	383.0	323.0	60.0	12.8 %
contract liabilities	244.0	182.3	61.7	8.2 %
Non-current liabilities	**1,070.8**	**1,137.0**	**–66.2**	**35.8 %**
thereof non-current financial liabilities	436.2	329.4	106.8	14.6 %
thereof non-current lease liabilities	66.9	53.3	13.7	2.2 %
thereof pensions and similar liabilities	466.2	685.0	–218.8	15.6 %
Equity	**874.1**	**651.0**	**223.1**	**29.2 %**

Current assets increased by EUR 362.6 million compared with 2022.

The rise in inventories is partly associated with increased stockpiling of semiconductors and other strategically important raw materials; at the end of 2021, inventory levels had become critical in some cases. The gradual build-up of inventories in fiscal year 2022 was necessary to ensure customer demand could always be met, even when supply chains were disrupted. In addition to increased stockpiling of items, price increases for semiconductors, cotton, and foils also had an impact.

Current trade receivables – primarily advance payments and trade account receivables – increased significantly by EUR 121.7 million on the back of sales growth and exceptionally high sales in December. The increase in cash and cash equivalents is due to the issuing of a promissory note loan (EUR 100 million) and the scheduled renewal of the syndicated loan (EUR 120 million) that was temporarily repaid as of the balance sheet date of December 31, 2021. A detailed analysis of the change in cash and cash equivalents is provided in section 2.1.5.

As of December 31, 2022, non-current assets were at around the same level as in the previous year. The increase of EUR 12.6 million in property, plant and equipment can be explained by the volume of investment, which exceeded depreciation of property, plant and equipment overall. Intangible assets increased in 2022. This was due to greater goodwill and higher concessions and similar property rights related to the two acquisitions in 2022.

Current financial liabilities were comparable to the previous year.

The change in provisions is primarily attributable to a fall in warranty provisions. The Management Board believes the risk of major warranty claims is now lower due to new quality control technologies. This led to a lower level of provisions compared with the previous year in the Banknote Solutions division.

Accounts payable trade were higher at the end of the year due to increased business levels, including in particular in the last quarter.

Lower stocks of banknotes and the completion of major projects reduced contract assets (EUR –55.0 million). Contract liabilities increased mainly due to new cash center projects in the Currency Management Solutions division in Angola, Indonesia, and Ethiopia (EUR +61.7 million).

Current and non-current financial liabilities increased by a total of EUR 197.9 million. This included the raising of a promissory note loan of EUR 100 million and of a new syndicated loan of EUR 120 million.

Provisions for pensions were EUR –218.8 million lower than in the previous year. This reflects the adjustment of the actuarial interest rate from an average of 1.4 % to 4.2 %, as well as assumptions regarding future salary increases and pension trends, which have an opposite effect.

The equity ratio increased to 29.2 % due to the rise in retained earnings and actuarial gains. It was thus 4.5 percentage points higher than in the previous year.

Working capital rose by EUR 57.5 million due to the effects described above and stood at EUR 581.5 million.

At 12.5 %, ROCE was 0.4 percentage points above the prior-year level due to higher capital employed. Working capital and capital employed additionally increased due to the acquisitions made in fiscal year 2022.

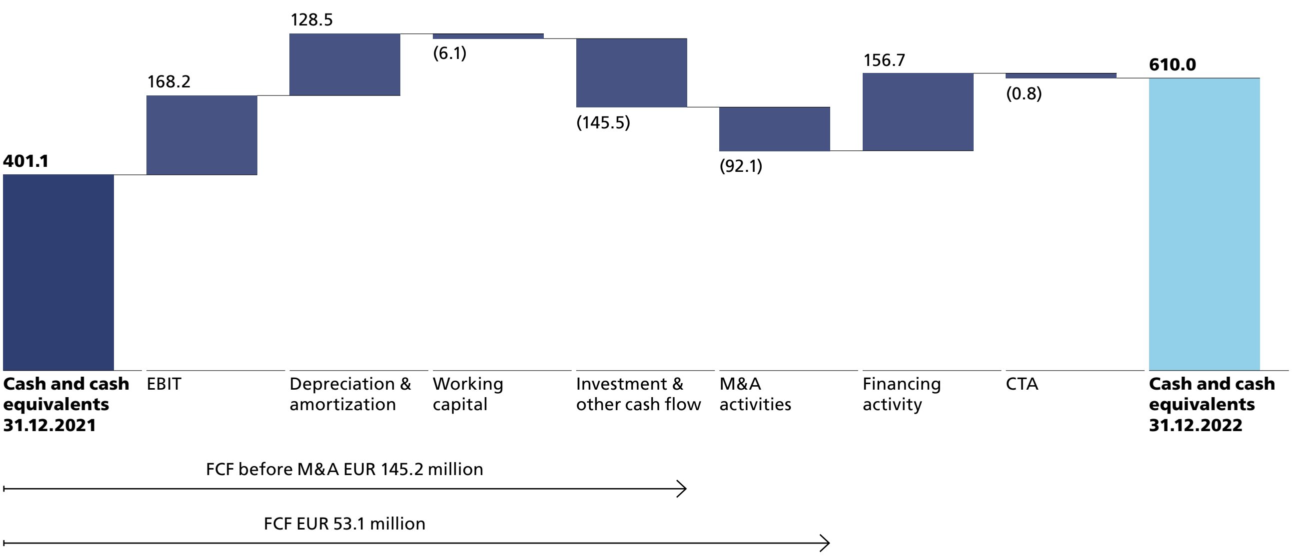
No significant effects are expected from off-balance-sheet commitments. Please see note 31 of the consolidated financial statements in this regard.

2.1.5. Financial Position

Free cash flow before M&A activities was EUR 145.2 million, significantly exceeding our expectations. Free cash flow including M&A activities was also strongly positive at EUR 53.1 million. G+D was therefore able to make acquisitions without impacting its financing structure.

Change in Cash and Cash Equivalents

EUR million



Cash flow from investing activities was EUR –100.2 million and included investment in property, plant and equipment and intangible assets (EUR –83.6 million) and acquisitions of EUR 92.2 million. In addition, time deposits worth EUR 50 million matured. A short-term loan of EUR 20 million in relation to the DER bogen commercial property in Munich was paid back to G+D.

Cash flow from financing activities amounted to EUR +156.6 million and included scheduled repayments on existing long- and short-term bank loans (EUR –18.4 million) as well as the taking out of a syndicated loan (EUR 120.0 million) and of a promissory note loan of EUR 100 million. In addition, lease liabilities were reduced (EUR –23.9 million) and a dividend payment of EUR 23.8 million was made to shareholders. Please refer to note 13 of the consolidated financial statements for information on approved but unused credit lines in the amount of EUR 611.9 million and on the capital structure. IFRS 16 had an impact of EUR –23.9 million on cash flow from financing activities.

Cash and cash equivalents increased by EUR 208.9 million to EUR 610.0 million in 2022.

In 2022, G+D built on the success of its last issuance in the promissory note market and raised another promissory note loan. Despite the challenging market environment, the transaction was very well received by investors and shows that they have great confidence in the company's strategic direction. The term sheet volume of EUR 75 million was heavily oversubscribed, leading G+D to decide to raise EUR 130 million. A tranche of EUR 100 million was paid out in 2022. The remaining EUR 30 million will be disbursed in 2023. The proceeds will be used for general corporate financing purposes and to support operational growth. As the above shows, G+D's financing instruments remain broadly based.

Including unused credit lines, G+D has total financial resources of EUR 1,221.9 million at its disposal.

2.1.6. Employees

Alongside sales and earnings figures, the size of G+D's workforce also reached its highest-ever level in 2022. The number of employees in the Group increased by 7 % year-over-year to 12,594. The increase roughly corresponds to the level of sales growth. The Mobile Security business sector recorded an increase in the number of employees following the acquisition of Valid's payment business. This mainly involved production and administration roles. secunet primarily saw an increase in the number of production staff, due to business growth and the acquisition of SysEleven. More administrative staff was also added, mainly in the areas of IT and HR. Around two thirds of the overall increase in employees resulted from acquisitions in 2022.

Number of employees (FTE at reporting date)

	2022	2021	Change absolut	Change in %
Production	8,109	7,498	612	8.2 %
Sales	1,442	1,446	−3	−0.2 %
Research and development	1,304	1,216	88	7.2 %
Administration	1,738	1,609	129	8.0 %
Total	**12,594**	**11,768**	**826**	**7.0 %**

Personnel expenses increased to EUR 822.1 million (+7.0 %) in the reporting year, in line with staff expansion.

Equal opportunities for women and having a higher proportion of women in management and key positions are important goals throughout the Group as we seek to achieve greater diversity in the company. Worldwide, G+D is aiming to further increase the proportion of women in leadership positions. Diversity plays a central role in our Group-wide sustainability strategy.

We intend to further increase the proportion of women in leadership positions by 2025. G+D's extended senior management team (Group Executive Committee – GEC) has contained a mix of genders since 2021. If there are more than three senior management positions in a company or unit, at least one of these positions will be occupied by a woman. For global executive management, we have set ourselves the goal of gradually increasing the proportion of women to at least 15 % by 2025 and to at least 20 % by 2030. Worldwide, the gender balance in line management should, at the local level, at least correspond to the structure of the workforce locally by 2030. In our Group-wide talent program, we are aiming for a female quota of at least 40 %.

3. Corporate Governance

As a global enterprise, G+D is exposed to significant uncertainty and change. The rules that determine how G+D operates in these conditions are defined by corporate governance. Intelligent integration of all elements of corporate governance allows G+D to
- consistently seize opportunities and develop appropriate strategies, including making decisions about its portfolio, and
- actively manage necessary risks and minimize their impact.

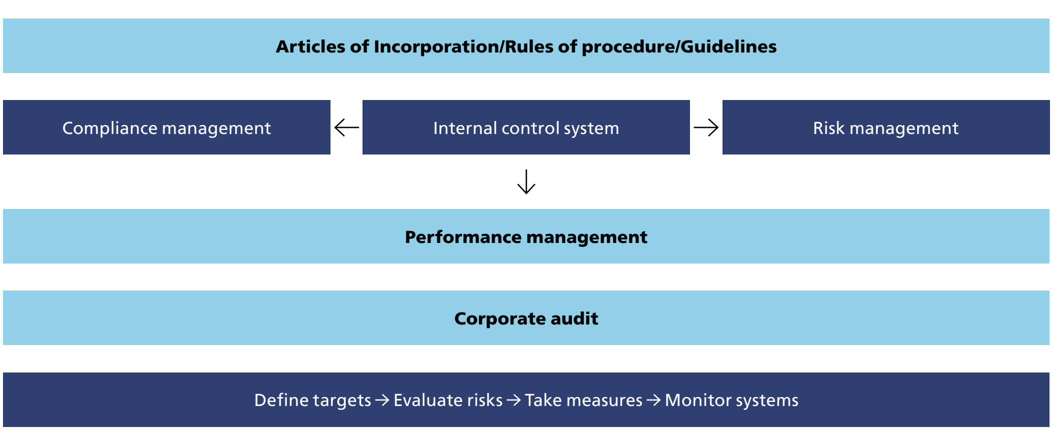
Balancing opportunities and risk safeguards the Group's business development, optimizes financial performance, and sustainably increases the enterprise value.

The Articles of Incorporation, rules of procedure, and Group-wide guidelines constitute the highest level of corporate governance at G+D. The Advisory Board and Supervisory Board serve as controlling bodies.

Corporate governance at G+D is based on three pillars: compliance management, the internal control system, and risk management. These three pillars operate independently of each other. However, they are closely interrelated because they are directly linked to the performance management system. In addition, as an independent function, Corporate Audit helps the senior management team to objectively monitor compliance with all values and rules. This internal check includes external (legal) requirements and internal rules.

By implementing all these elements, G+D has created a clear and effective organizational and management culture that reflects and also promotes G+D's values (collaborative, reliable, innovative).

Corporate Governance



The compliance management system (CMS) supports regulatory compliance across the Group. Among other objectives, the aim is to help prevent corruption and antitrust law violations in business transactions. The CMS thus underpins the confidence of customers and enables them to rely on G+D, while also protecting the company's overall reputation. The Group-wide compliance organization ensures that every employee and all members of the Management Board, Supervisory Board, and Advisory Board at G+D are familiar with compliance requirements and act accordingly. As part of compliance assessments, risks to which the business units are exposed with regard to corruption, fraud, antitrust law, and conflicts of interest are reviewed and assessed across all Group entities. These global compliance-risk assessments are conducted regularly, and the results are used to continuously update G+D's CMS to fully meet requirements. During the 2022 reporting year, awareness campaigns were run across the Group to refresh employees' understanding of compliance matters. In addition, a completely new code of conduct that meets the latest requirements was created and implemented in a Group-wide project involving stakeholders worldwide. It contains information on the fundamentals of leadership, making decisions, and voicing concerns, which is complemented by specialist topics covering all relevant areas.

Group-wide compliance is managed centrally by the Corporate Compliance department, working with the Compliance Offices of the decentralized business units in G+D's business sectors and subsidiaries. Compliance managers report on a quarterly basis on activities in the core compliance areas of prevention, detection, and response. G+D management is thus kept informed of the preventive measures that are in place to ensure the organization acts in a compliant manner. Any (potential) compliance violations and the countermeasures taken are also reported. This enables management to address any undesirable developments. A report is submitted to the Supervisory Board on an annual basis.

During the reporting year, the compliance organization was further expanded in terms of staff numbers, and the range of topics covered was extended. The aim remains to achieve synergies in Group-wide compliance management, make processes more efficient, and meet the legal requirements of a compliance matrix organization. The CMS is also updated as required to reflect the latest legal developments. In 2022, the focus was on putting a dedicated human rights management system in place to meet the requirements of Germany's Lieferkettensorgfaltspflichtengesetz (Supply Chain Due Diligence Act).

Individual events are handled within the business sectors by the relevant Chief Compliance Officers or are dealt with at senior corporate compliance level, as required. Third parties are used as necessary to examine and advise on compliance matters. Individual events are also reported on a case-by-case basis directly to the Chairman of the Management Board of the relevant business sector and to the Group CEO. They take appropriate measures in conjunction with the Board members of the subsidiary and in consultation with the relevant Compliance Officer and, where necessary, Corporate Compliance.

The internal control system ensures proper execution of business processes. In addition, appropriate responsibilities are defined for minimizing operational and financial risks at G+D. The control mechanisms implemented within the core processes of HR, accounting, treasury, order to cash (OTC), purchase to pay (PTP), and IT security are documented, with potential gaps being identified and filled on a regular basis. Compliance with legal requirements and internal corporate guidelines is also ensured.

The accounting-related internal control system includes the following key elements:
– the Group accounting policy including details of accounting practices and valuation methods,
– the definition of responsibilities for preparing the annual financial statements, consolidated financial statements, and reporting packages,
– ensuring implementation of the dual-control principle for material matters, and
– plausibility checks.

The internal control system thus operates as a risk-avoiding mechanism. There are restrictions inherent in any internal control system. Accordingly, no control system, regardless of an effectiveness assessment, is capable of preventing or detecting all incorrect information. To improve the efficiency of the internal control system, G+D introduced a new ICS software support tool during the reporting year.

A risk management system is in place to identify, assess, and manage potential risks. Risks associated with business operations are subject to continuous monitoring via this system. Management of opportunities and risks is an ongoing process. The impact of the identified risks on G+D's performance is also analyzed and quantified as part of risk management. Active risk management is therefore an integral part of performance management, with its various strategy, planning, and controlling mechanisms. Further information about risk management at G+D can be found in section 4.1.

Compliance management, the internal control system, and risk management operate independently and separately from each other and are coordinated centrally by the Group's Management Board. Individual responsibilities are clearly defined.

On behalf of the Management Board, Corporate Audit regularly reviews the effectiveness of Group management and monitoring processes. The focus is on risk management, the internal control system, legal regulations, and internal corporate guidelines.

4. Opportunities and Risk Report

4.1. Risk Management System

The following points have been defined as key elements of an effective and efficient risk management system:
– The focus is on early detection of risks.
– Risks are systematically identified and assessed.
– Where possible, a conscious decision is made about accepting risks.
– Risks and measures are assigned to owners.
– Continuous monitoring and reporting of risks and actions is ensured.

Operational and financial risks are addressed on an ongoing basis in the course of day-to-day business management and assessed during quarterly performance reviews. Strategic risks are subject to an annual review as part of the strategy process. Compliance risks are managed by the compliance organization and covered by separate reporting, including notification of Corporate Controlling in the event of financial implications. The information below primarily relates to operational and financial risks.

G+D's risk management system is based on a comprehensive, interactive, and management-oriented enterprise risk management approach that is integrated into the global organizational structure. Risk management is organized locally but managed centrally by Corporate Controlling.

All Group employees have a duty to monitor their immediate environment for possible risks and to report them. With support from the Local Risk Officer in each Group company and drawing on other functions (e.g. Legal, Tax, and Controlling), risks are assessed, and risk/measure owners defined. Risks are monitored by the business sectors and Corporate Controlling. The Management Board reports to the Supervisory Board on a quarterly basis.

4.2. General Risk Analysis and Assessment

The risks identified are evaluated using the gross and net methods. The gross impact is defined as the potential damage that might result if no measures were in place to mitigate the risk. The net impact is the risk remaining when mitigating measures are taken into account. Appropriate measures have a positive impact on the possible damage or on the probability of occurrence associated with the risk. The likelihood of occurrence is multiplied by the net impact to obtain the risk value.

Risk assessment	Net impact = [gross impact] – [measure]
	Risk value = [net impact] × [likelihood of occurrence]

The likelihood of occurrence indicates the estimated probability of the identified risk occurring, which is classified as follows:

Category	Description	Likelihood of occurrence
Very high	Expected to occur	x > 80 %
High	Probable	50 % < x ≤ 80 %
Medium	Not probable	10 % < x ≤ 50 %
Low	Possible, but largely theoretical	x ≤ 10 %

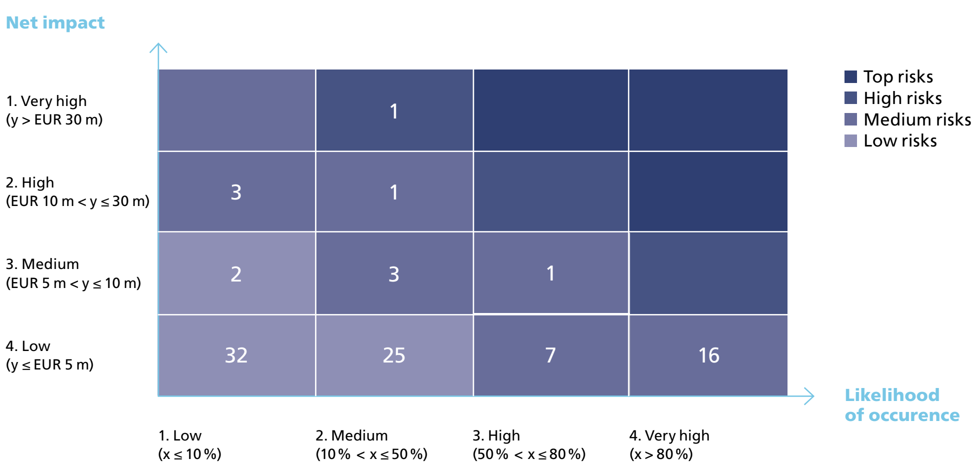
The individual risks are assigned to predefined risk categories (see section 4.4) and the risk values summarized at the level of the business sector and Group.

Overall risk is calculated by simple addition of the individual risk values. Due to this approach, the totals for the business sectors and for the Group are largely theoretical since simultaneous occurrence of all individual risks can be virtually ruled out due to the different correlations. Aggregate assessment offers the advantage that trends are easier to detect, and conclusions can be drawn regarding risk resilience.

4.3. Summarized Risk Report

As of December 31, 2022, 91 risks had been reported to the Management Board and the Supervisory Board via the risk report. There were thus 20 fewer risks than on December 31, 2021. The risks were evaluated according to net impact and likelihood of occurrence, as shown in the matrix below:

Risk Categories



A top risk was closed in fiscal year 2022. This was a tax risk linked to the audit of the international transfer pricing, for which comprehensive risk provisioning had been put in place in the course of preparing the annual financial statements for 2020. There were therefore no risks in the top risk category as of December 31, 2022.

One risk is allocated to the high risks category, which thus remains quantitatively constant year-over-year. As in the previous year, the risk relates to a major project in the Veridos business sector. For each major project the overall risk is recorded in the risk register by assessing and aggregating the individual risks accordingly. Overall, the risk assessment of this major project has improved slightly. Accordingly, the potential net impact included in the assessment was reduced slightly. Risk premiums were taken into account when calculating the project costs. Comprehensive risk provisioning is thus already in place.

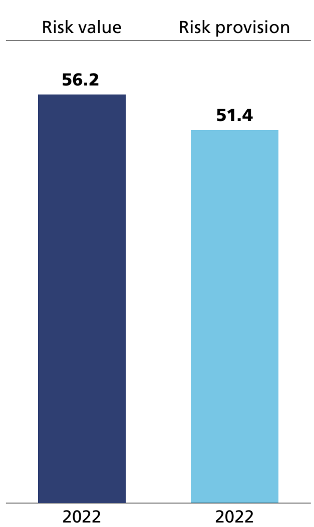
The overall risk value for the Group was EUR 56 million, a significant reduction of EUR 31 million compared with the previous year.

To manage this risk in financial terms, the Group has made provisions and allowances on receivables or applied corresponding calculation surcharges to major projects totaling EUR 51 million. In 2022, financial risk provisioning was in place for 92 % of the risk value.

These risks have been taken into consideration in these financial statements and in the forecast, in accordance with the Group’s accounting policy. If the risks for which no provisions have been made due to the low likelihood of occurrence (≤ 50 %) do occur or the risk premiums calculated for major projects turn out to be too low, this would have a negative impact on net assets, the financial position, and results of operations. If the risks covered by provisions occur, there would be a cash outflow.

Risk Value and Risk Provision

EUR million



EUR million

	Risk value	Risk provision	Δ PY Risk Value	Δ PY Risk Provision
Major project risks	18.5	18.7		
Tax and customs risks	16.4	13.5		
Value creation risks	10.3	12.3		
Market risks	3.3	2.4		
Political risks	3.1	1.6		
Bad debt risks	1.7	1.7		
Legal risks	1.2	1.0		
Security risks	0.8	0.0		
IT risks	0.6	0.2		
Product development risks	0.1	0.0		
Total risks	**56.2**	**51.4**		

Aggregated risk arising from major project risks are assessed as having the highest risk values, followed by global tax risks, value creation risks and market risks.

After careful analysis, the Group-wide risks are not deemed existential in nature, either individually or overall. Due to G+D's strong market positioning, strategic development of the portfolio, capacity for technological innovation, globally standardized processes, and committed employees, the Management Board is confident that the Group is well equipped to meet the challenges posed by these risks in 2023 and to leverage the opportunities that arise.

4.4. Risks and Opportunities by Category

G+D divides risks into (geo-)political risks, product development risks, value creation risks, security risks, IT risks, bad debt risks, market risks, tax and customs risks, legal risks, and major project risks.

Major project risks
G+D is responsible for a number of major projects with high sales potential and lengthy implementation periods spanning several years. These projects have an elevated risk structure, which is taken into account accordingly in risk calculations for the business models. As work on these ongoing major projects progressed, the overall risk assessment in the reporting period improved.

Professional project management, coordination and a dedicated project controlling team have been put in place to support and oversee these major projects. The risks posed by major projects can be successfully addressed and reduced through continuous risk management.

An increase in the number of major projects in the portfolio could create a long-term order backlog and provide access to new markets. A positive impact on brand perception is another potential benefit.

Tax and customs risks
As a globally active company, G+D's business activities are subject to a wide range of tax-related laws and regulations. These include country-specific tax regimes, possible tax obstacles that make business more difficult, and import/export regulations. Trade barriers in the form of customs duties may lead to negative volume and cost effects, as additional levies may become due. Intercompany netting may be challenged by the tax authorities during a tax audit, which can entail lengthy negotiations and the need to produce extensive documentation.

G+D seeks to counter these risks by continually adapting its internal processes to changing requirements. The company also takes advice from auditors, lawyers, and tax consultants in the countries concerned. Where possible, the risk position is substantially reduced by obtaining binding information from the relevant local tax authorities.

Value creation risks
At G+D, supply chain management is handled individually in each of the business sectors. Potential disruptions include changes to regulatory frameworks, disruption of infrastructure, supply chain interruptions, an increase in prices of raw materials (e.g. semiconductors and cotton), and higher energy costs. These factors could have adverse effects on the availability, quality, and cost of G+D products and therefore impact sales and earnings. Accordingly, various risk-reducing measures were implemented in 2022, particularly in relation to energy supply and the continuing shortage of semiconductors. These measures included strategic stockpiling of semiconductors and heating oil to avoid bottlenecks and production stoppages.

Undetected quality problems could result in higher costs for G+D and have an adverse impact both on demand for the company's products and on its reputation. This is countered by defining precise quality requirements and ongoing and efficient development of the quality management system, with a corresponding focus on customer needs. Our underlying approach is that "quality is everybody's business." Making this attitude a reality requires processes, organizational interfaces, tasks, and responsibilities to be clearly defined and communicated in quality handbooks and work instructions. Each employee therefore needs to be fully aware of the contribution they can make within their role.

Production could also be compromised by technical failures. Additional production capacity must be maintained to minimize this risk. G+D seeks to ensure optimum machine utilization and back-up capacity by means of detailed production planning and management. Machines that are outdated or no longer meet the latest technical standards could lead to a loss of production capacity, resulting in partial or complete failure to produce the planned quantities. Problems of this kind can result in project delays or late delivery of products to end customers. If G+D is late in delivering products, it could face contractual penalties for failing to comply with delivery deadlines. Prompt investment in replacement machinery is intended to prevent such issues. Capital expenditure is managed by the business sectors at G+D and closely monitored by the project controlling team.

In a dynamic market environment, G+D strikes a balance between effectively meeting the current needs of customers and investing in promising new products and solutions.

With its solutions in the payment, connectivity, identities, and digital infrastructure markets, G+D protects essential assets for its customers and makes the lives of billions of people more secure on a daily basis. An increase in awareness of security in the digital world or an expansion of protective measures in response to cyber threats could lead to greater demand for new or improved products from G+D. Alongside product innovation, process innovation boosts efficiency and could create competitive advantages.

Increased vertical and horizontal expansion of value-adding activities offers additional opportunities. Global sourcing is one strategy that contributes to reduced costs. Dependence on particular suppliers is reduced and access to special resources is secured. This could strengthen G+D's competitive position, which could have a positive impact on net assets, the financial position, and results of operations. In turn, this would allow an upward revision of existing forecasts. Continuous monitoring is essential in order to exploit potential opportunities arising from global sourcing. This also allows the resulting new risks to be identified at an early stage and countered by appropriate action.

Employees are crucial to the success of the company. To counteract a potential shortage of qualified staff, G+D is taking appropriate action to recruit, retain, and develop skilled workers. G+D highlights its attractiveness as an employer through a range of activities, such as a talent management program and international career opportunities. Measures for attracting and developing qualified staff and boosting loyalty enable G+D to recruit and retain skilled, motivated employees, who are key to the company's success. Any knowledge advantage gained could be a crucial competitive factor. In addition, information is the basis for all business decisions, thereby ensuring the continued existence of G+D.

Market risks
G+D is subject to various market risks. Changes in exchange rates and interest rates significantly affect operational business and also investment and financing activities. If necessary, derivative financial instruments are used in relation to foreign currency and interest rates to hedge underlying transactions. The purpose of these financial instruments is to reduce risks stemming from fluctuations in exchange rates and interest rates and to increase planning security. In accordance with risk management standards applying to international banks, all trading activity is subject to financial monitoring that is independent of the Group's treasury department.

In addition to cash invested directly with banks, some assets were managed by a well-known German asset management company in a special investment fund. In 2022, a second segment was opened under this special investment fund umbrella, which is managed separately by a different asset management company. The investments consist of two portfolios of top-grade bonds (government bonds, corporate bonds, and fixed-income bonds), investment funds, and equities (top-grade companies), as well as commodities and cash equivalents.

The risk associated with the equity component of this investment is presented monthly using the value-at-risk (VaR) indicator. Value-at-risk shows the loss level that will not be exceeded in a period of ten days with a probability of 99 %.

For further details on financial risks, including sensitivity analyses, please see note 22 of the consolidated financial statements.

Political risks
A renewed escalation of the trade-related dispute between China and the US and other (geo-)political tensions could lead to a significant deterioration in global growth prospects. Political decisions could result in the introduction of further trade barriers at the international level.

G+D counters these risks by continually monitoring economic and political developments in the key markets. Production and capital expenditure are managed centrally, enabling a rapid response in the event of any economic slowdown. At the same time, G+D benefits from having a local presence. The strong regional focus of the sales organization allows G+D to recognize and respond to changing customer requirements at an early stage. G+D's proximity to its customers gives it an advantage here, with fast response times allowing it to seize emerging business opportunities as they arise.

Bad debt risks
Like all market players, G+D is subject to typical liquidity risk and counterparty credit risk. Liquidity risk is the risk of being unable to meet financial commitments as they fall due. This is minimized by means of a carefully considered financing policy. If contract partners do not meet commitments when due or collateral loses value, this is referred to as counterparty credit risk. The Group primarily manages these risks as part of its ongoing business and financing activities, based on written policies. Bad debt risks form part of the risk reports submitted to the Management Board and are also included in regular reporting to the Supervisory Board and Advisory Board.

If, contrary to expectations, it becomes possible for a customer to settle the outstanding receivables, any derecognition would be reversed. This would positively impact net assets, the financial position, and results of operations by the corresponding amount.

Legal risks

When selecting external partners, care must be taken to ensure that they abide by internal rules and applicable laws and regulations. They should also supply G+D's customers with high-quality products. During and after the end of the contractual relationship, legal disputes may arise, in which claims could be brought against G+D or the costs of a legal defense may be incurred. Risks arising in connection with legal disputes are continuously monitored. Risks may also arise from business relationships as a result of possible violation of export control law or through warranty periods and warranty conditions.

With regard to data protection, the requirements of the GDPR must be met. Breaches of data protection law or the loss of sensitive data can lead to fines or reputational damage. G+D's competitive position may also be negatively impacted. Employees receive regular awareness training on this subject.

New legal requirements can open up opportunities for G+D, with a corresponding improvement in sales and earnings. For example, if the use of a technology that G+D is involved in developing or that is contained in its products were to be made mandatory, internal forecasts could be revised upward.

Environmental issues are becoming increasingly important for businesses. In its sustainability activities, G+D works hard to minimize the impact of its business operations on the environment and the resulting risks. A certified environmental management system provides the basis for these endeavors. Further information is available in the progress report (https://www.gi-de.com/en/group/responsibility). Having a positive reputation for sustainability provides G+D with an opportunity to boost its attractiveness as a business partner and employer. This could have positive effects on financial metrics and also on employer attractiveness.

Security risks

G+D is not completely immune to cyber security risks, whether in the form of economic or industrial espionage, cyber attacks, or common non-specific attacks, such as ransomware. Targeted attacks may be carried out by certain countries and potentially by competitors, or a mix of these (countries or criminal organizations acting on behalf of, or in support of, competitors). Non-specific (opportunistic) attacks are mainly carried out by actors associated with organized crime.

Harm could be caused by unintentional disclosure of confidential information or intellectual property, product damage (e.g. through loss of IT system integrity), supply difficulties as a result of loss of production, or compromised (personal) data. Individuals may also gain unauthorized access to G+D buildings or systems and misuse or steal information, products, or materials. Damage to plant and equipment is also possible.

G+D has taken a range of preventive measures to minimize these risks. They include various technical IT security measures, organizational and procedural security measures (e.g. identity management, monitoring of IT processes, staff security measures), and physical security measures (e.g. entry and access control systems, camera and alarm systems, site security). Regular training sessions are also conducted to raise the awareness of all employees around the various security issues.

G+D has thus implemented a security and control system that makes it possible to identify risks promptly and respond in a timely fashion.

Through stringent security management, G+D has systematically developed a robust culture of security and prevention. This internal competence could enable G+D to set itself apart sustainably from other companies with lower security levels and allow it to continue to operate as a trusted business partner.

IT risks

The availability of internal IT systems is essential for G+D's ability to do business. In the age of digitalization, IT infrastructure and IT applications are becoming ever more important because all the company's business activities are based on IT systems. This dependence entails huge potential for damage. Workflows are becoming more complex. In addition, dependency on information and communication technologies and on systems designed to harmonize processes is growing. G+D counters these risks by continually adapting its IT systems to changing requirements and ensuring redundancy of critical IT systems. In addition to availability, legally compliant use of licenses is also a possible risk area. Active license management is in place to counter this risk.

As digitalization progresses, new digital business segments are being created in the IT area. Considerable sales potential could be opened up through the development and provision of digital solutions as well as in the field of connectivity. This could result in new sales opportunities for G+D.

Product development risks

G+D offers its customers high-quality products and solutions. Development of new product features is based on market analysis. Misinterpretation of market analysis or delays in introducing products could result in higher costs and have an adverse effect on demand. In new product development in particular, deadline compliance is crucial in order to meet customer requirements and avoid substantial additional costs during the subsequent commercialization phase. In addition to these risks, intellectual property rights must be protected, licensed, or acquired as part of R&D activities. G+D could be accused by third parties of breaching their intellectual property rights. This could result in payment of compensation for damages and a ban on using certain technologies. The Group's patent department works with external law firms to register and monitor patents.

Maintaining an extensive vertical and horizontal portfolio of products and solutions allows the Group to diversify risk and take advantage of market opportunities. G+D is a leader in the fields of payment, connectivity, identities, and digital infrastructures, all of which have huge market potential.

5. Overall Assessment of Economic Situation and Forecast

5.1. Overall Assessment of Economic Situation

In an uncertain economic environment, G+D further boosted its sales and EBIT in fiscal year 2022. The expectations for 2022 were significantly exceeded, with sales reaching a record high and EBIT reflecting ongoing strong profitability. The big increase in orders, meanwhile, highlights the potential for future growth.

Business performance in 2022 was affected by diverse and complex geopolitical and economic factors and the associated impacts. The existing shortage of materials was exacerbated by high inflation rates and spiraling energy prices caused by the war in Ukraine. In addition, a number of pandemic-related challenges remained in 2022, e.g. it was necessary to deal with business shutdowns and operational restrictions in Asia.

To minimize risk associated with the ongoing semiconductor shortage in particular, G+D has migrated current products to new semiconductor platforms and certified them with customers. Other measures include optimizing freight routes and building up stocks of semiconductors and other raw materials. An important Ukrainian sub-supplier to the banknote segment was lost and had to be replaced by other suppliers, at higher cost. A major potential risk for 2022 – the possible shortage of gas – failed to materialize, however.

The **Currency Technology** business sector fell slightly short of its predicted level of sales. The impact of the war in Ukraine was felt most strongly in the Banknote Solutions division, where performance was lower than expected. By contrast, the Currency Management Solutions division exceeded its predicted sales.

Mobile Security significantly outperformed the previous year's expectations. 2022 was a highly successful year for both the Secure Transactions + Services (STS) division and the Trusted Connected Devices (TCD) division. Strong growth was generated by Secure Transactions + Services (STS) with payment cards and card issuance services in particular.

In the reporting year, **Veridos** continued to be impacted by the pandemic, which was one of the main reasons why the unit was unable to meet its 2022 targets. However, the very healthy order book provides a solid basis for delivering the desired sales growth in 2023.

secunet continued its exceptional success story by ending 2022 with sales at a record high for the eighth time in a row. Sales exceeded expectations.

The G+D Group significantly exceeded its target for operating income, EBIT, and EBITDA. Increased EBIT also meant that the predicted ROCE was exceeded.

Due to higher sales than anticipated, working capital was above target; average working capital intensity was on target, at 23.9 %.

Investment activity significantly exceeded the target due to unbudgeted acquisitions. Investment before M&A activities was below the planned budget.

Free cash flow was firmly positive, but below target. Excluding non-budgeted acquisitions, free cash flow significantly exceeded the expectations for 2022.

5.2. Forecast

G+D started fiscal year 2023 with a very good order backlog of over EUR 1.7 billion and a forward order book covering a period of 8.0 months. Both are very healthy figures. The increase in the order book was spread across all business units, providing a solid foundation for achieving the 2023 sales target. G+D plans to increase sales notably again in fiscal year 2023. The acquisitions made in 2022 are expected to contribute to this.

Availability issues, high commodity prices, increased transport costs, and general inflationary pressure as well as the changed geopolitical situation will continue to impact global economic activity and thus also affect G+D in 2023. In particular, the banknote segment expects higher costs due to its energy-intensive production processes. To tackle the current challenges as effectively as possible, G+D has put a variety of measures in place for improving efficiency and for actively reflecting inflation-related price rises in customer contracts. However, this policy can only be implemented to a limited extent in the short to medium term due to the mostly long-term nature of customer contracts in the banknote segment, at Veridos, and at secunet. In addition, a tiered process for investment approval and staff recruitment has been introduced.

A cautious planning approach was adopted that took account of the problematic issues described above and the measures already introduced. Based on the good business results presented in this annual report and on the company's growth potential, we are confident about the future outlook.

For the purposes of our forecast, we assume that geopolitical tensions will not escalate further.

We expect EBIT and EBITDA to remain slightly below the high levels achieved in 2022, for the reasons set out above.

The **Currency Technology** business sector expects sales growth for 2023. The Banknote Solutions division believes that demand will pick up and sales will increase significantly compared to 2022. Sales in the Currency Management Solutions division are expected to be slightly above the high level seen in the prior year.

After an excellent fiscal year 2022, the **Mobile Security** business sector is aiming to further boost its strong sales performance. In particular, the Secure Transactions + Services (STS) division anticipates above-average growth in the payment solutions business in fiscal year 2023 due to the acquisition of Valid. The Trusted Connected Devices (TCD) division expects sales to be slightly down in 2023 compared with the previous year.

In the last fiscal year, the **Veridos** business sector continued to be affected by pandemic-related restrictions, which impacted the availability of semiconductors in particular. Currently, the order book is very healthy thanks to a significant increase in orders of nearly 50 % compared to the previous year. This provides a solid foundation for achieving the desired sales growth in the coming year.

After a very good 2022, **secunet** is once again aiming for sales growth in 2023. The rapidly growing market for secure cloud infrastructure is expected to make a significant contribution in this regard. secunet bolstered its position in the cloud solutions market by acquiring SysEleven in 2022.

Working capital for the G+D Group is expected to be slightly above the level of the reporting year in 2023 due to the anticipated sales growth.

G+D is planning to slightly increase investment in property, plant and equipment and intangible assets. The focus will be on IT investment and capitalized research and development expenditure. After completion of the planning process, the decision was made to increase the stakes in Group companies Netcetera and NetSeT. Please see note 24 and note 36 of the consolidated financial statements for more information. Overall, however, investment will be significantly below the level of the previous year.

Free cash flow will be firmly positive and remain at roughly the previous year's level.

ROCE is expected to be slightly below that achieved in 2022 due to EBIT performance.

Actual results may, of course, vary from expected performance.

The structure of the Group is set to change in 2023, with the two Mobile Security divisions – Secure Transactions + Services (STS) and Trusted Connected Devices (TCD) – becoming two legally independent business sectors. The existing divisions pursue different strategies in terms of technologies and market environment. STS mainly focuses on hardware-based business with physical smartcards and associated issuance services. At TCD, the focus will shift in the coming years from SIM hardware to a business model that involves software and service solutions geared to the IoT. The two divisions thus address very different opportunities and challenges. To enable both divisions to concentrate fully on disparate markets and specific customer requirements in the future, G+D has decided to convert them into two legally independent business sectors. A corresponding project was launched in 2022. To reduce complexity and ensure that business processes run seamlessly, the legal separation is taking place in three stages. Since October 2022, STS and TCD have been operating as legally separate units in the US, with all other countries to follow in 2023.

In 2023, G+D will continue to protect the essential assets of its customers in the payment, connectivity, identities, and digital infrastructure markets, thus making the lives of billions of people more secure on a daily basis. The impact of global crises will continue to be felt, but G+D remains extremely well positioned thanks to its portfolio of trusted security solutions. The future trends that G+D is actively taking forward, including CBDCs, the IoT, digital identities, and cloud security, are steadily gaining momentum, which means the company can look to the future with great confidence.

6. Subsequent Events

In February 2023, G+D increased its holding in software company Netcetera from 30 % to 61.5 %. The new shareholder structure will also be reflected in the Board of Directors, with G+D having the majority of seats. For further events subsequent to the balance sheet date, please see note 36 of the consolidated financial statements.

Consolidated Financial Statements

as of December 31, 2022

Independent Auditor’s Report

To Giesecke+Devrient Gesellschaft mit beschränkter Haftung, Munich

Opinions

We have audited the consolidated financial statements of Giesecke+Devrient Gesellschaft mit beschränkter Haftung, Munich, and its subsidiaries (the Group) – which comprise the consolidated statement of financial position as of December 31, 2022, the consolidated income statement, the consolidated statement of comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows for the financial year from January 1, 2022, to December 31, 2022, and notes to the consolidated financial statements, including the accounting policies presented therein. In addition, we have audited the group management report of Giesecke+Devrient Gesellschaft mit beschränkter Haftung for the financial year from January 1, 2022, December 31, 2022.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying consolidated financial statements comply, in all material respects, with the IFRSs as adopted by the EU, and the additional requirements of German commercial law pursuant to Section 315e (1) HGB [Handelsgesetzbuch: German Commercial Code] and, in compliance with these requirements, give a true and fair view of the assets, liabilities, and financial position of the Group as of December 31, 2022, and of its financial performance for the financial year from January 1, 2022 to December 31, 2022, and
- the accompanying group management report as a whole provides an appropriate view of the Group's position. In all material respects, this group management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development.

Pursuant to Section 322 (3) sentence 1 HGB [*Handelsgesetzbuch: German Commercial Code*], we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and the group management report.

Basis for the opinions

We conducted our audit of the consolidated financial statements and of the group management report in accordance with Section 317 HGB and the German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) [Institute of Public Auditors in Germany]. Our responsibilities under those requirements and principles are further described in the "Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report" section of our auditor's report. We are independent of the group entities in accordance with the requirements of German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinions on the consolidated financial statements and on the group management report.

Responsibilities of Management and the Supervisory Board for the Consolidated Financial Statements and the Group Management Report

Management is responsible for the preparation of consolidated financial statements that comply, in all material respects, with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) HGB and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position, and financial performance of the Group. In addition, management is responsible for such internal control as they, in accordance with German Legally Required Accounting Principles, have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, management is responsible for the preparation of the group management report that, as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, management is responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a group management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the group management report.

The Supervisory Board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the group management report.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the group management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our opinions on the consolidated financial statements and on the group management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Section 317 HGB and in compliance with the German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this group management report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements and of the group management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal controls.
- Obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures (systems) relevant to the audit of the group management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of these systems.
- Evaluate the appropriateness of accounting policies used by management and the reasonableness of estimates made by management and related disclosures.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the group management report or, if such disclosures are inadequate, to modify our respective opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) HGB.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express opinions on the consolidated financial statements and on the group management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our opinions.
- Evaluate the consistency of the group management report with the consolidated financial statements, its conformity with [German] law, and the view of the Group's position it provides.
- Perform audit procedures on the prospective information presented by management in the group management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by management as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Munich, March 21, 2023

KPMG AG
Wirtschaftsprüfungsgesellschaft

[Original German version signed by:]

Hachmann	**Höfelschweiger**
Wirtschaftsprüfer	Wirtschaftsprüferin
[German Public Auditor]	[German Public Auditor]

Consolidated income statement

for the years ended December 31, 2022 and 2021

EUR million	Note	2022	2021
Net sales	15	2,527.1	2,376.6
Cost of goods sold		(1,784.2)	(1,692.9)
Gross profit		**742.9**	**683.7**
Selling expenses		(246.6)	(227.1)
Research and development expenses		(132.7)	(118.4)
General and administrative expenses		(170.8)	(157.1)
Impairments on trade receivables and contract assets		(21.6)	(22.1)
Other operating income/(expenses), net		4.8	7.8
Operating profit		**176.0**	**166.8**
Share in earnings from equity investments	6	1.6	(0.9)
Other financial income/(expenses), net	17	(9.4)	–
Earnings before interest and income taxes		**168.2**	**165.9**
Interest income	18	2.6	1.9
Interest expense	18	(19.2)	(17.1)
Earnings before income taxes		**151.6**	**150.7**
Income taxes	19	(71.0)	(65.5)
Net income		**80.6**	**85.2**
thereof apportioned to non-controlling interests		4.0	7.8
thereof apportioned to the shareholders of Giesecke+Devrient GmbH		76.6	77.4
		80.6	**85.2**

The accompanying notes to the financial statements are an integral part of these statements.

Consolidated statement of comprehensive income

for the years ended December 31, 2022 and 2021

EUR million	Note	2022	2021
Net income		**80.6**	**85.2**
Other comprehensive income			
Items that will never be reclassified to the income statement			
Actuarial gains and losses	14	218.2	25.0
Deferred taxes on actuarial gains and losses	19	(67.6)	(6.7)
Fair value change in financial assets recorded in other comprehensive income		–	2.1
		150.6	**20.4**
Items that are or may be reclassified to the income statement			
Currency effects from the translation of foreign operations		5.4	19.5
Effective part of fair value changes in cash flow hedges		2.9	(4.8)
Deferred taxes fair value changes in cash flow hedges		(0.8)	–
Share of income and expenses recognized directly in equity resulting from the use of the equity method of accounting		0.7	0.1
		8.2	**14.8**
Other comprehensive income, net of tax		**158.8**	**35.2**
Total comprehensive income		**239.4**	**120.4**
thereof apportioned to non-controlling interests		6.6	8.2
thereof apportioned to the shareholders of Giesecke+Devrient GmbH		232.8	112.2
		239.4	**120.4**

The accompanying notes to the financial statements are an integral part of these statements.

Consolidated balance sheet

as of December 31, 2022 and 2021

EUR million	Note	Dec 31, 2022	Dec 31, 2021
ASSETS			
Current assets			
Cash and cash equivalents		610.0	401.1
Financial assets	2	104.1	177.1
Accounts receivable trade and other accounts receivable, net	3	563.3	441.6
Inventories, net	4	477.1	338.4
Income taxes receivable		23.1	9.8
Other current assets	5	48.8	40.9
Contract assets	23	200.3	255.2
Total current assets		**2,026.7**	**1,664.1**
Non-current assets			
Investments accounted for under the equity method	6	45.5	43.4
Investments in other related parties	6	12.6	10.8
Financial assets	2	25.3	22.5
Accounts receivable trade and other accounts receivable, net	3	13.6	13.3
Intangible assets	7	246.6	188.5
Property, plant and equipment	8	513.4	500.8
Deferred tax assets	19	88.6	155.5
Income taxes receivable		2.5	3.0
Other non-current assets		15.4	14.2
Contract assets	23	1.5	14.0
Total non-current assets		**965.0**	**966.0**
Total assets		**2,991.7**	**2,630.1**

The accompanying notes to the financial statements are an integral part of these statements.

EUR million	Note	Dec 31, 2022	Dec 31, 2021
LIABILITIES AND EQUITY			
Current liabilities			
Accounts payable trade and other accounts payable	10	383.0	323.0
Provisions	11	76.8	108.2
Financial liabilities	13	113.5	22.4
Lease obligations	9	22.8	19.1
Accrual for income taxes and income taxes payable		32.0	28.2
Other current liabilities	12	174.7	158.9
Contract liabilities	23	244.0	182.3
Total current liabilities		**1,046.8**	**842.1**
Non-current liabilities			
Provisions	11	16.6	14.6
Financial liabilities	13	436.2	329.4
Lease obligations	9	66.9	53.3
Pensions and related liabilities	14	466.2	685.0
Deferred tax liabilities	19	27.0	15.3
Other non-current liabilities		19.5	8.7
Contract liabilities	23	38.4	30.7
Total non-current liabilities		**1,070.8**	**1,137.0**
Equity			
Capital stock	20	25.8	25.8
Additional paid-in capital	20	29.5	29.5
Retained earnings	20	795.4	594.3
Accumulated income and expenses recognized directly in equity		19.1	11.2
Treasury stock	20	(60.1)	(60.1)
Non-controlling interests		64.4	50.3
Total equity		**874.1**	**651.0**
Total liabilities and equity		**2,991.7**	**2,630.1**

The accompanying notes to the financial statements are an integral part of these statements.

Consolidated statement of changes in equity

for the years ended December 31, 2022 and 2021

EUR million

	Capital stock	Additional paid-in capital	Retained earnings
Balance as of January 1, 2021	**25.8**	**29.5**	**447.3**
Net income	–	–	77.4
Other comprehensive income	–	–	20.1
Total comprehensive income	**–**	**–**	**97.5**
Sale of shares in affiliated companies (see note 24)	–	–	64.9
Total changes in equity	**–**	**–**	**162.4**
Dividends paid	–	–	(15.4)
Balance as of December 31, 2021	**25.8**	**29.5**	**594.3**
Net income	–	–	76.6
Other comprehensive income	–	–	148.3
Total comprehensive income	**–**	**–**	**224.9**
Total changes in equity	**–**	**–**	**224.9**
Contributions from non-controlling interests	–	–	–
Dividends paid	–	–	(23.8)
Balance as of December 31, 2022	**25.8**	**29.5**	**795.4**

The accompanying notes to the financial statements are an integral part of these statements.

	Accumulated income and expenses recognized directly in equity resulting from currency translations	Reserves from changes in fair value	Accumulated income and expenses resulting from cash flow hedges	Treasury stock	**Subtotal**	Non-controlling interests	**Total**
	(6.0)	**(4.4)**	**6.9**	**(60.1)**	**439.0**	**44.3**	**483.3**
	–	–	–	–	77.4	7.8	85.2
	19.5	2.1	(6.9)	–	34.8	0.4	35.2
	19.5	**2.1**	**(6.9)**	**–**	**112.2**	**8.2**	**120.4**
	–	–	–	–	64.9	4.0	68.9
	19.5	**2.1**	**(6.9)**	**–**	**177.1**	**12.1**	**189.3**
	–	–	–	–	(15.4)	(6.1)	(21.5)
	13.5	**(2.3)**	**–**	**(60.1)**	**600.7**	**50.3**	**651.0**
	–	–	–	–	76.6	4.0	80.6
	6.1	–	1.8	–	156.2	2.6	158.8
	6.1	**–**	**1.8**	**–**	**232.8**	**6.6**	**239.4**
	6.1	**–**	**1.8**	**–**	**232.8**	**6.6**	**239.4**
	–	–	–	–	–	18.0	18.0
	–	–	–	–	(23.8)	(10.5)	(34.3)
	19.6	**(2.3)**	**1.8**	**(60.1)**	**809.7**	**64.4**	**874.1**

Consolidated statement of cash flows

for the years ended December 31, 2022 and 2021

EUR million	2022	2021
Cash flows from operating activities		
Earnings before interest and income taxes	168.2	165.9
Adjustments to reconcile earnings before interest and income taxes to cash provided by operations		
(Increase)/decrease in inventories, net	(107.8)	11.0
Increase/(decrease) in accounts payable trade and other accounts payable	41.5	(60.8)
(Increase)/decrease in prepayments	(79.5)	55.7
(Increase)/decrease in accounts receivable trade and other accounts receivable, net	(1.6)	85.0
(Increase)/decrease in contract assets	68.7	(26.6)
Increase/(decrease) in contract liabilities	72.6	(26.5)
Change in working capital	**(6.1)**	**37.8**
Depreciation, amortization and impairment/recoveries	128.5	139.5
(Gain)/loss on sale and disposal of intangible assets and property, plant and equipment	(4.6)	(0.7)
Undistributed earnings in associated companies and joint ventures excluding dividend payments	(1.6)	1.0
Dividends received from associated companies and joint ventures	0.8	1.8
(Increase)/decrease in investments in trading securities	8.0	0.4
(Increase)/decrease in prepaid expenses and other assets	(14.1)	(7.0)
Increase/(decrease) in provisions	(32.9)	16.3
Increase/(decrease) in pensions and related liabilities	(10.5)	(10.2)
Increase/(decrease) in other liabilities	1.1	19.7
Income taxes paid, net	(76.9)	(59.6)
Interest received	2.6	1.9
Interest paid	(9.2)	(9.4)
Changes in other operating activities	(8.8)	93.7
Net cash provided by operating activities	**153.3**	**297.4**

EUR million	2022	2021
Cash flows from investing activities		
(Increase)/decrease in short-term investments	51.4	(51.1)
Additions to and prepayments on intangible assets	(23.3)	(27.6)
Additions to and prepayments on property, plant and equipment	(60.3)	(60.5)
Capital increase in investments in related companies	(1.8)	(3.2)
Acquisitions, net of cash acquired	(90.4)	(22.7)
Proceeds from the sale of available-for-sale securities	21.3	(20.9)
Purchase of available-for-sale securities	(20.0)	–
Loans to related parties	(5.2)	(21.0)
Payments received on loans to related parties	20.0	4.5
Proceeds from sale of intangible assets	0.4	0.1
Proceeds from sale of property, plant and equipment	7.7	2.4
Net cash used in investing activities	**(100.2)**	**(200.0)**
Free Cashflow[1]	**53.1**	**97.4**
Cash flows from financing activities		
Investment in subsidiaries under common control	–	67.0
Proceeds from issuance of long-term debt	223.2	0.4
Repayment of long-term debt	(17.9)	(137.0)
Payments on lease obligations	(23.9)	(22.8)
Net (decrease)/increase in short-term debt and borrowings	(0.5)	(5.0)
Dividends paid to shareholders	(23.8)	(15.4)
Cash received from non-controlling interests	10.0	–
Dividends paid to non-controlling interests	(10.5)	(6.1)
Net cash provided by/used in financing activities	**156.6**	**(118.9)**
Effect of exchange rates on cash and cash equivalents	(0.8)	9.8
Net increase/(decrease) in cash and cash equivalents	208.9	(11.7)
Cash and cash equivalents at beginning of the year	401.1	412.8
Cash and cash equivalents at end of the year	**610.0**	**401.1**

[1] Free cash flow consists of net cash provided by operating activities less net cash used in investing activities.

The accompanying notes to the financial statements are an integral part of these statements.

Notes to the consolidated financial statements

for the years ended december 31, 2022 and 2021

(in EUR million, except where otherwise stated)

1 Summary of Significant Accounting Policies and Practices

A Description of Business

Giesecke+Devrient Gesellschaft mit beschränkter Haftung and subsidiaries ("G+D" or "Giesecke+Devrient") is in the business of printing banknotes and securities, as well as the development and production of security paper and currency automation equipment. Giesecke+Devrient also develops and manufactures magnetic stripe cards and smartcards mainly for the telecommunications, banking and health services industries. A further field of business includes security-related solutions for governments and public authorities, ranging from ID cards and travel documents to e-government solutions. New technologies comprise network solutions and secure mobile transaction solutions as well as a software system for mobile devices.

Giesecke+Devrient, headquartered in Prinzregentenstraße 161, 81677 Munich, Germany, is entered in the Commercial Register of the Munich District Court Dept. B under the number 4619. G+D has a strong international orientation with Germany being one of its major markets. Other key markets include the United States, Canada and China. As of December 31, 2022, G+D had subsidiaries in 33 countries and 12,594 employees (for simplification purposes the term "employee / employees" represents individuals of all genders) worldwide, including 7,969 outside Germany.

The consolidated financial statements were approved by the Management Board on March 21, 2023.

B Basis of Presentation

The consolidated financial statements as of December 31, 2022 have been prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the EU, and the applicable supplementary German statutory requirements in accordance with Section 315e no. 1 German Commercial Code (HGB).

MC Familiengesellschaft mbH was founded in 2012. MC Familiengesellschaft mbH based in Munich became the Group parent company and prepared statutory consolidated financial statements in accordance with IFRS as of December 31, 2022.

Some figures may not precisely add up in total due to rounding differences.

C Consolidated Group and Principles of Consolidation

Consolidated Group

All material G+D subsidiaries, joint ventures and associated companies are included in the consolidated financial statements.

Affiliated companies are companies that are controlled by the Group. The Group controls a company if it is exposed to or has rights to variable returns from its involvement in the company and has the ability to affect the amount of these returns by using its power. Financial statements of subsidiaries are included from the time the Group obtains control and ceases when the Group loses control. Non-controlling interests are valued at the respective share of the net assets of the company acquired that can be identified at the date of acquisition. Changes in the ownership interest in a subsidiary that do not result in loss of control are accounted for as equity transactions.

Group interests that are accounted for in accordance with the equity method comprise shares in associated companies and joint ventures. Associated companies are companies in which the Group has significant influence but does not control or jointly control with respect to financial and business policies. A joint venture is an arrangement whereby the Group has joint control of the arrangement and has rights to the net assets instead of rights to the assets and obligations for the liabilities of the arrangement.

The consolidated Group comprises 26 domestic and 65 foreign subsidiaries which are fully consolidated. Giesecke+Devrient has had a holding structure since January 2017, in which the divisions are fully consolidated as legally independent subgroups. As Giesecke+Devrient has more than half of the voting rights in Veridos Matsoukis S.A. Security Printing, Athens at each level, management has determined that G+D controls the company. This assessment is on the basis that G+D owns the majority of the voting rights in Veridos GmbH, Berlin, which in turn holds the majority of the voting rights in Veridos Matsoukis S.A. Security Printing, Athens. Additionally, eight joint ventures and / or associated companies are accounted for under the equity method.

Principles of consolidation
The financial statements of the companies included in the consolidated financial statements are prepared using uniform accounting policies in accordance with IFRS.

Income and expenses, receivables, payables and provisions, as well as intragroup profits between companies included in the consolidated financial statements are eliminated.

A subsidiary is deconsolidated from the date it is no longer controlled by G+D.

Investments in joint ventures and associated companies accounted for using the equity method are initially recognized at cost and adjusted accordingly in subsequent periods. Intragroup profits from transactions with these companies are eliminated in proportion to the acquirer's interest.

Under IFRS, all business combinations are accounted for using the acquisition method. The acquirer allocates the cost of a business combination by recognizing the acquiree's identifiable assets, liabilities, and contingent liabilities that satisfy the recognition criteria at their fair value on the date control over the entity is obtained (acquisition date). The full amounts of identifiable assets and liabilities and contingent liabilities irrespective of the company's ownership interest are recognized at their fair values. Any excess of the purchase price over the fair value of the identifiable assets, liabilities, and contingent liabilities less any minority interests is recognized as goodwill. Where the fair value exceeds the purchase price, the resulting amount is recorded in the income statement.

Non-controlling interests are measured at the fair value of the proportionate identifiable net assets. In a business combination achieved in stages, interests held at the time of transfer of control are revalued and the resulting gain or loss is recognized in profit or loss. An adjustment of conditional purchase price components that were reported as a liability at the acquisition date is recognized in profit or loss for business combinations. Transaction costs are recognized as expenses at the time they are incurred.

After having gained control of a subsidiary, the difference between the purchase price and the proportionate share of equity for additional shares acquired is charged against retained earnings. Transactions which do not result in loss of control have no impact on the income statement and are recorded as equity transactions.

Remaining interests are measured at fair value at the time of loss of control. In the case of non-controlling interests, reporting negative balances are permitted, i.e. future losses are allocated in proportion to the participation without restriction.

D Use of Estimates

Preparation of the financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent amounts and liabilities as of the date of the financial statements and reported amounts of revenues and expenses during the reporting period.

Information about estimation uncertainties and where critical judgment in applying accounting policies that have the most significant effect on the amounts recognized in the consolidated financial statements and those through which a considerable risk can arise or a material adjustment will be required within the fiscal year ending on December 31, 2022 is included in the following notes:

- Note 1 (j) "Goodwill and Other Intangible Assets"
- Note 1 (n) "Provisions"
- Note 19 "Income Taxes"
- Note 24 "Business Combinations"

Interpretation 23 of the IFRS Interpretation Committee (IFRIC) clarifies the application of the recognition and measurement under International Accounting Standards (IAS) 12 if there is uncertainty regarding the income tax treatment. Estimates and assumptions must be made for recognition and measurement, e.g. whether an assessment is made independently or together with other uncertainties, whether a probable or expected value is used for the uncertainty and whether changes have occurred compared to the previous period. The risk of detection is irrelevant for the accounting of uncertain balance sheet items. The accounting is based on the assumption that the tax authorities are investigating the matter in question and that they have all the relevant information.

For G+D, this has no material impact on the consolidated financial statements.

E Foreign Currency Translation

Transactions in foreign currency are translated into euros using the exchange rate on the date of the transaction. At the balance sheet date, monetary assets and liabilities are remeasured using the period-end exchange rate. Non-monetary assets and liabilities denominated in foreign currency are translated using the historical exchange rates as of the date of the transaction.

The individual functional currency for each of the Group companies is the currency in the primary economic environment in which the entity operates. The assets and liabilities of foreign subsidiaries with functional currencies other than the euro are translated using period-end exchange rates, while the revenues and expenses are translated using average exchange rates during the period. Differences arising from the translation of assets and liabilities in comparison with the translation of the prior periods are included in cumulative translation adjustment and reported as a separate component of equity.

The average and closing rates for significant currencies for the fiscal years ended December 31 are as follows (1 euro equals X units of foreign currency):

1 euro equals X units of foreign currency	Rates – December 31, 2022		Rates – December 31, 2021	
	Average	Closing	Average	Closing
US dollar – USD	1.0538	1.0666	1.1835	1.1334
British pound – GBP	0.8528	0.8869	0.8602	0.8393
Chinese renminbi – RMB	7.0799	7.3582	7.6340	7.2230
Canadian dollar – CAD	1.3703	1.4440	1.4835	1.4481
Indian rupee – INR	82.7087	88.5950	87.4861	84.1410
South African rand – ZAR	17.2100	18.0986	17.4795	18.0173

F Financial Instruments

A financial instrument is a contract that gives rise to a financial asset in one entity and a financial liability or equity instrument in another entity.

Financial assets include, in particular, cash and cash equivalents, accounts receivable trade, loans, other receivables, marketable securities, and derivative financial instruments.

For regular-way purchases and sales of all categories of financial assets, with the exception of derivative financial instruments, the date of initial recognition in the balance sheet or of derecognition is the settlement date, i.e. the date on which an asset is delivered to or by an entity. The trade date is determinant for derivative financial instruments.

Financial liabilities include accounts payable trade, liabilities to financial institutions, finance lease obligations, and derivative financial liabilities.

Financial assets and liabilities are generally measured at fair value at initial recognition. Accounts receivable trade that do not have a significant financing component are initially recognized at their transaction price. The fair value is the estimate of the price at which an orderly transaction to sell an asset or to transfer a liability would take place between market participants at the measurement date under current market conditions (i.e. to estimate an exit price). This is the price within a defined market which could be achieved in selling an asset or should be paid for a liability.

After initial recognition, financial assets are classified at either amortized cost, at fair value through other comprehensive income (FVOCI) or at fair value through profit or loss (FVTPL) under IFRS 9. A financial asset is derecognized when the contractual rights to the cash flows relating to the financial asset expire, that is, when the asset is realized, forfeited or is no longer under the control of the company. G+D did not record interest income on impaired financial assets.

The Group designates the spot element of forward foreign exchange contracts to hedge its currency risk and applies a hedge ratio of 1:1. The forward elements of forward exchange contracts are excluded from the designation of the hedging instrument. The Group's policy is to align the critical terms of the forward exchange contracts with the hedged item.

The Group assumes that the credit risk on a financial asset, unless specified otherwise, has increased significantly if it is more than 30 days past due. Lastly, the Group considers that its cash and cash equivalents based on the external ratings of the selected banks and financial institutions and the internal monitoring and limits per institutions ensures a low default risk („low credit risk exemption").

The creditworthiness of a financial asset is impaired when one or more events occur that adversely affect expected future cash flows. Indicators for this are, for example, significant financial difficulties of the debtor or the probability that the debtor will go into insolvency or other restructuring proceedings.

The Group considers a financial asset to be in default if the debtor is unlikely to pay its credit obligations in full to the Group without recourse by the Group with actions such as realizing collaterals (if any are held) or the financial asset is more than 90 days past due.

The Group defines a financial asset based on trade receivables as default by 360 days or more past due.

Derivative financial instruments
Derivative financial instruments are used to manage the foreign currency exposure incurred in the normal course of business in the form of forward exchange contracts. In addition, interest rate swaps are used to hedge the interest rate risk on long-term loans with variable interest rates.

G+D has made use of the option to continue applying hedge accounting requirements of IAS 39.

Hedging of major projects by applying Cash Flow Hedge Accounting (CFH)
Currency risks from contracts with a nominal volume exceeding EUR 8.0 million are generally secured and verified in applying and presenting cash flow hedge accounting in the balance sheet.

In these individual transactions, fluctuations in earnings are avoided by the pro rata temporis accounting of the valuation effects of the derivatives in equity.

The Group designates the spot element of forward foreign exchange contracts to hedge its currency risk and applies a hedge ratio of 1:1. The forward elements of forward exchange contracts are excluded from the designation of the hedging instrument and are separately accounted for as hedging costs in financial result, shown analogously to free-standing derivatives. The Group's policy is to align the critical terms of the forward exchange contracts with the hedged item.

There are stringent requirements related to the underlying transaction in applying cash flow hedge accounting. They are constantly monitored at inception date of the project as well as during the applicable period. If, during the term of the project, the criteria are no longer met, the cash flow hedge account is dissolved and any effects are continuously reported in profit and loss. The commercial part remains in force.

In connection with the prospective effectiveness test, the Group specifies that there is a high balance between expected cash flows initiated by the hedging instrument and the hedged underlying transaction based on currency, amount and term of the corresponding cash flows (critical terms match). Retrospectively, the Group assesses whether the hedging instrument of the designated derivate was offset by the changes of cash flows of the secured transaction were effective using the hypothetical derivative approach.

In these hedging relationships, sources of ineffectiveness can arise from:
- the effect of the counterparties' and the Group's own credit risk on the fair value of the forward foreign exchange contracts, which is not reflected in the fair value change of the hedged cash flows attributable to the change in exchange rates; and
- mainly based on changes in the value of the hedged transactions.

Hedging of major projects by applying Fair Value Hedge Accounting (FVH)
G+D does not otherwise apply hedge accounting in managing foreign currency exposure. These derivative financial instruments therefore qualify as held-for-trading and are recorded at fair value at the balance sheet date as either an asset or a liability. Changes in fair value are recognized in the income statement as financial income or expense. The fair market values of forward exchange contracts are calculated on the basis of the applicable spot market rates as well as the forward contract premium or discount compared to the contracted forward contract rate.

Giesecke+Devrient identifies derivative instruments embedded in host contracts of financial liabilities and accounts for them separately in accordance with the provisions of IFRS 9 Financial Instruments: Recognition and Measurement. Financial derivatives that are embedded in financial contracts of financial assets are recognized at fair value. These derivatives consist solely of foreign currency derivatives embedded in certain firm sales and purchase contracts denominated in a currency that is neither the functional currency of G+D nor of the contractual counterparty and which is also not a currency in which transactions are commonly denominated in the jurisdiction in which the transaction is to occur.

The fair values of the external and embedded foreign currency derivatives are recorded as current financial assets and liabilities in the balance sheet.

Hedging of interest rate risk
Giesecke+Devrient has entered into interest rate hedging transactions for long-term bank loans. A hedging relationship was designated between the loan and the interest rate swaps and accounted for in the form of a cash flow hedge.

Cash and cash equivalents/ Short-term investments
Giesecke+Devrient considers all highly liquid investments with an original maturity of three months or less to be cash equivalents. These are valued at amortized cost.

Highly liquid commercial paper with an original maturity up to three months is also classified as cash and cash equivalents and is measured at fair value.

Short-term investments with a duration between three months and one year are classified as current financial assets.

Cash and cash equivalents as of December 31, 2022 include cash and bank balances in Russia with restrictions amounting to EUR 0.6 million.

Accounts receivable trade and other accounts receivable, net
Accounts receivable trade and other accounts receivable, net are allocated to the category “at amortized cost”. They are measured at their transaction price at the time of initial recognition. The valuation at subsequent balance sheet dates at G+D is carried out on the basis of the business model for managing receivables and characteristics of contractual cash flows using amortized cost.

For doubtful accounts, credit risk impairments in the form of specific allowances are carried out. Specific defaults lead to derecognition of the receivables affected. In addition, according with IFRS 9, lifetime expected credit losses are calculated on a collective basis on the remaining balance on accounts receivable trade third party balances not subject to specific allowances. G+D first records impairments on an individual basis and then on a collective basis on the remaining balance of estimated credit losses in accordance with IFRS 9. Allowances on accounts receivable trade and other accounts receivable are recorded in separate allowance accounts.

The Group uses the simplified approach to calculate expected credit losses on accounts receivable trade using a provision matrix that includes an analysis of historical data over the past five years and current observable and future orientated data. Default risks within each default risk rating are segmented based on industry. Based upon the analysis of historical data as well as reasonable and supportable information regarding accounts receivable more than one-year past-due, G+D has assumed rebuttable rates equal to 90.0 % for all subgroup HUBs. The analysis therefore assumes a non-rebuttable rate of 10.0 % – being those receivables not expected to be recovered. The non-rebuttable rate is then reduced by a recovery rate of 25.0 % which represents the write-off portion expected to be collected in the event of insolvency proceedings. The calculation of collective allowances for the individual G+D companies incorporates the customer payment patterns which have been derived from the average ageing of accounts receivable trade third parties over the last five years as of December 31.

Income and expenses in connection with the recognition and reversal of specific allowances and allowances on a collective basis, as well as direct derecognitions of receivables are recorded in a separate line item in the income statement as a result of IFRS 9. Non- and low-interest-bearing non-current receivables are recorded at the present value of the expected future cash flows when the interest impact is material. For such amounts, the subsequent valuation is made applying the effective interest method. Assets are classified as non-current when the remaining duration at the balance sheet date exceeds 12 months.

Marketable securities and investments
G+D's marketable securities are classified as trading securities or as held-to-collect and sell securities. The classification under IFRS 9 is based on the business model in which a financial asset is managed and its contractual cash flow characteristics. IFRS 9 contains three general classification categories for financial assets: measured at amortized cost, at fair value through other comprehensive income (FVOCI) and at fair value through profit or loss (FVTPL).

G+D has designated the financial assets to the business model "Other" and therefore measures them at fair value through profit or loss. Investment funds classified as held-to-collect and sell do not meet the cash flow criteria and are therefore measured at fair value through profit or loss.

The equity instruments include investments in other related parties. These include the investments in Brighter AI Technologies GmbH with 8.1 % of the shares, FINANCIAL NETWORK ANALYTICS LTD with 6.5 % of the shares, IDnow GmbH with 5.1 % of the shares, Metaco SA with 3.9 % of shares, SALV TECHNOLOGIES OÜ with 3.0 % of the shares and Verimi GmbH with 0.6 % of the shares. These investments are measured at fair value through other comprehensive income (FVOCI) and are shown in a separate line item in the balance sheet "Investments in other related parties". Trading securities include shares in a closed and fully consolidated special fund which invests in publicly traded equity and debt securities. These trading securities are measured at fair value through profit or loss as determined by the most recently traded price of each security at the balance sheet date. Highly liquid commercial paper with an original maturity of up to three months is classified as cash and cash equivalents and is measured at amortized cost.

Unrealized gains and losses on trading securities and held-to-collect and sell securities (investment securities) are included in net income on a current basis.

If, in a subsequent period, the fair value increases and the increase can be objectively related to an event occurring after the impairment loss was recognized, the impairment loss shall be reversed in the income statement.

Other financial assets
With the exception of derivative financial instruments, other financial assets recognized as assets are allocated to the measurement category "at amortized cost". The valuation is in accordance with the explanation provided for accounts receivable trade and other receivables, net. Impairments on financial assets are recognized using the impairment model for expected credit losses. An impairment is reversed when the reasons for the impairment recorded no longer prevail.

Financial liabilities
With the exception of derivative financial instruments, financial liabilities recorded as liabilities are allocated to the measurement category "financial liabilities measured at amortized cost". The initial valuation of these financial liabilities is at fair value and in subsequent periods at amortized cost using the effective interest method. Transaction costs are deducted from the acquisition costs to the extent to which they are directly attributable. Liabilities are classified as non-current when the remaining maturity as of the balance sheet date exceeds 12 months.

The valuation of accounts payable trade is in accordance with the procedures noted previously for financial liabilities.

A financial liability is derecognized when the underlying obligation relating to the liability is fulfilled, terminated or extinguished.

Giesecke+Devrient has not made use of the option to designate financial liabilities as financial liabilities measured at fair value through profit or loss at the time of initial recognition in the balance sheet.

Financial instruments that give rise to a right for the holder to repay the capital made available to the company must be classified as liabilities in accordance with IAS 32. In the case of companies in the legal form of a commercial partnership, the partner may demand repayment of the capital provided by exercising a statutory right of termination which cannot be excluded by the articles of association. This regulation also includes other comparable termination rights with severance agreements of minority shareholders. Liabilities from shares in commercial partnerships and minority interests with comparable termination rights are measured at amortized cost. Changes in liability due to valuation are recognized in net interest income in the consolidated income statement.

G Risk Management and Foreign Currency Exposure Policies

Risk management for the entire Group is coordinated centrally. Policies for risk management, foreign currency exposure, and documentation requirements are set forth in guidelines and procedures issued by the corporate treasury department. These guidelines are examined and updated on a regular basis. The approval of the guidelines is the responsibility of management.

Derivative financial instruments are used by G+D solely to reduce the risks inherent within its global business. As such, Giesecke+Devrient does not hold or issue derivative financial instruments for speculative purposes.

Refer to Note 22 “Financial Risk” and section 4.3 of the Group management report, “Summarized Risk Report” for additional related disclosures.

H Inventories

Inventories are carried at cost. Cost is determined using the weighted average, FIFO (first-in first-out) or standard cost method. Finished goods and work-in-progress inventories include direct material, labor, and manufacturing overhead costs which are based on the normal capacity of the production facilities. Items in inventory are written down at the balance sheet date if their net realizable value is lower than their carrying amount.

I Non-current Assets Held for Sale

Non-current assets are classified as held for sale if they are available for immediate sale in their present condition, subject only to terms that are usual and customary for sales of such assets and their sale is highly probable. They are measured at the lower of their carrying amount and fair value less costs to sell.

J Goodwill and Other Intangible Assets

Intangible assets consist of purchased intangible assets, such as standard software, licenses, patents, water rights, know-how, customer base, brands, goodwill, and internally developed intangible assets.

Intangible assets with definite useful lives are valued at cost and are amortized on a straight-line basis over their estimated economic useful lives.

Development costs are capitalized when the requirements of IAS 38 “Intangible Assets” are fulfilled. Capitalized development costs recognized include production costs less accumulated depreciation and impairments. Production costs comprise direct material and personnel costs as well as directly attributable material and manufacturing overhead costs and production-related depreciation. Such costs are amortized on a straight-line basis over the estimated economic useful lives. Research costs are expensed in the period in which they are incurred.

The useful lives of intangible assets with definite useful lives are generally as follows:

	Years
Capitalized development costs/Technology	3–10
Software, rights, customer base, brands etc.	2–15

Goodwill is not amortized but rather tested at least annually for impairment. Reversals of impairments on goodwill are not permitted.

At least once a year, Giesecke+Devrient evaluates the recoverability of goodwill at the cash-generating unit (CGU) level or group of CGUs applying a one-step impairment test. Where the recoverable amount (value in use equal to the present value of future cash flows) of the CGU or group of CGUs, to which the goodwill was allocated, is less than the carrying amount, an impairment loss is recognized. If the impairment loss exceeds the goodwill of the CGU, the excess is allocated to the other assets (generally property, plant and equipment and intangible assets) of the CGU or group of CGUs pro rata on the basis of the carrying amount of each asset.

The most critical assumptions in the calculation of the fair value less costs to sell and the calculation of the value in use are based upon include estimated growth rates, weighted average capital costs and tax rates. Such assumptions, as well as the underlying methodology, can materially influence the respective values and therefore impact the determination of a potential impairment of the goodwill. Where property, plant and equipment and intangible assets are included in the goodwill impairment tests, the determination of the recoverable amount is based on management estimates.

K Property, Plant and Equipment

Property, plant and equipment are valued at cost less accumulated depreciation. Depreciation of property, plant and equipment is calculated on a straight-line basis over the estimated economic useful lives of the assets. Depreciation of an asset commences once it has been placed in service.

The cost of self-constructed property, plant and equipment comprises the direct cost of materials and direct manufacturing expenses plus appropriate allocations of material and manufacturing overheads as well as production and output-related general and administrative costs.

Acquisition or manufacturing costs also include estimated dismantling and removal costs as well as costs relating to the restoration of the location to its original state.

Any investment allowances or grants received reduce the acquisition or manufacturing costs of the assets for which they were granted.

If an item of property, plant and equipment is comprised of several components with differing useful lives, the separate components are depreciated over their individual useful lives. Expenses for the day-to-day repair and maintenance of property, plant and equipment are normally charged against income.

Estimated economic useful lives of G+D's property, plant and equipment are as follows:

	Years
Buildings	up to 50
Technical equipment and machinery	2–25
Other plant and office equipment	2–23

L Impairment of Intangible Assets and Property, Plant and Equipment

Impairment of other intangible assets and items of property, plant and equipment is identified by comparing the carrying amount with the recoverable amount (the higher of fair value less costs to sell and value in use). If no future cash flows generated independently of other assets can be allocated to the individual assets, recoverability is tested on the basis of the cash-generating unit to which the assets can be allocated. With the exception of goodwill, impairment losses are reversed if the reasons for recognizing the original impairment loss no longer apply.

M Leasing

When concluding an agreement, the Group determines whether such an agreement is or contains a lease in accordance with the regulations of IFRS 16.

IFRS 16 defines a lease as a contract that conveys the right to control the use of an identified asset for a period of time in exchange for consideration. The contract conveys the right to control the use of an identified asset if the lessee has the right to obtain substantially all of the economic benefits from the use of the identified asset and has the right to direct the use of that asset.

Applying IFRS 16, as a lessee the Group records right-of-use assets and lease obligations in the amount of the present value of the payment obligations for all identified leases. According to the new regulations of IFRS 16 the Group does not distinct between operating and finance leases anymore. No right-of-use assets or lease obligations are recorded in the balance sheet for short-term leases with a lease term of up to twelve months as well as leases for which the underlying asset is of low value (the original price of the underlying asset is below 5,000 EUR). The lease payments from these contracts are recorded as expenses in the amount of the monthly lease payments. The lease components of a contract are accounted for separately from the non-lease components on the basis of the stand-alone selling price.

Applying IFRS 16, the principal portion of lease payments on lease obligations is shown in the cash flows from financing activities. Corresponding interest payments as well as lease payments for short-term leases and leases for which the underlying asset is of low value are still recorded in the cash flows from operating activities.

Lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be readily determined, the Group's incremental borrowing rate is used for discounting.

At initial recognition, right-of-use assets are measured at cost. The cost of the right-of-use assets comprise the lease liabilities as well as any lease payments made at or before the commencement date, initial direct costs and asset retirement obligations, less lease incentives received.

The subsequent measurement is carried out at amortized cost, deducting accumulated depreciation and accumulated impairment losses, in accordance with the cost model. Right-of-use assets are depreciated on a straight-line basis over the term of the lease.

If the lessee has a favorable extension option, so that it is reasonably certain that the lessee will exercise that option, the lease payments from the extension period are to be considered in the measurement of the lease obligation.

N Provisions

Pension provisions and similar obligations
Obligations for pensions and other postretirement benefits and related expenses and income are determined in accordance with actuarial measurements. These measurements are based on key assumptions, including discount rates, salary trends, pension trends, biometric probabilities and assumptions about the trend of health insurance benefits. The discount factors applied reflect the interest rates achieved at the balance sheet date for senior, fixed-interest bonds with commensurate maturities. As a result of a fluctuating market and economic situation, the underlying assumptions may deviate from the actual development, which can have a significant impact on the obligations for pensions and other postretirement benefits upon termination of employment.

Pension provisions under defined benefit plans are measured in accordance with the projected unit credit method. Thereby, not only the pensions and acquired expectancies known at the reporting date but also increase in compensation and pensions expected in the future are taken into account. Actuarial gains or losses and other remeasurements of the net obligation are determined at the reporting date and recorded through other comprehensive income (changes in equity not affecting profit or loss for the period).

In order to determine the discount rate for the measurement of the pension provisions and similar obligations, Giesecke+Devrient uses the Mercer Pension Discount Yield Curve Method. This is a method for determining the interest rate that conforms with IAS 19. The new method is based on a selection of AA-rated corporate bonds in accordance with Bloomberg analyses. Net interest expense, i.e. the interest portion of the allocation to the provision less the expected return on plan assets, is reported in interest expense. The amount payable in conjunction with defined contribution plans is reported as an expense.

When the benefits of a plan change or a plan is curtailed the resulting change in the relevant past service performance or the gain or loss from the curtailment is immediately recognized in the income statement. The Group recognizes gains and losses from the settlement of a defined benefit pension plan at the time of settlement.

Pre-retirement part-time work agreements
An obligation for pre-retirement part-time working arrangements is recognized from the point in time at which the employee is entitled under an individual agreement to the premature termination of employment. For pre-retirement part-time working arrangements in connection with the block model, the outstanding obligation for work performed by the employee during the work phase and the obligation to pay top-up amounts are measured separately. Both obligations are recorded in instalments applying actuarial principles from the start of the active phase until the end of the employment phase. In the passive phase, the present value of the future payments is provided. The net interest portion included in the pre-retirement part-time working arrangement expenses is reported as interest expense.

Product warranties
A provision for the expected warranty-related costs is established when the product is sold. Estimates of accrued warranty costs are primarily based on historical experience.

In 2022, there was a change in the methodology for estimating the amount and probability of possible warranty claims. In particular, thanks to new technologies for quality assurance already in the production process, the Group's management estimates the level and risk of warranty claims occurring in the production of banknote paper and the printing of banknotes as being significantly lower. In 2022, this assessment led to a reversal of warranty provisions in the amount of EUR 27.3 million. This income reduces the cost of sales for the 2022 financial year in the consolidated income statement.

Provision for restructuring costs
A provision for restructuring costs is recorded where a legal or constructive obligation exists. A constructive obligation for restructuring costs arises only when there is a detailed formal plan identifying key features of the plan and its implementation and a valid expectation on the part of those affected, either by starting to implement the plan or announcing its main features to those affected by it. A restructuring provision should include only the direct expenditures arising from the restructuring, which are those that are both necessarily entailed by the restructuring and not associated with the ongoing activities of G+D.

Provision for onerous contracts
The calculation of provisions for onerous contracts is to a great extent based on estimates. Such estimates are mainly related to the status of the projects, the fulfillment of the services requested, changes regarding the volume of the projects, the update of budgeted costs as well as applied customized and runtime-specific discount rates.

Giesecke+Devrient records provisions for onerous contracts for contracts in which the unavoidable costs of meeting the obligations exceed the expected benefits. The unavoidable costs under a contract reflect the minimum net costs of exiting from the contract, which is the lower of the cost of fulfilling it and any compensation or penalties arising from failure to fulfill it. Before a separate provision for an onerous contract is established, any impairment loss that has occurred on assets dedicated to that contract is recognized.

Other provisions
Other provisions are recognized where there are legal or constructive obligations to third parties on the basis of past transactions or events that will probably require an outflow of resources to settle, and this outflow can be reliably measured. They are recorded at their expected settlement amount, taking into account all identifiable risks, and may not be offset against potential reimbursements, for example, via insurance claims. The settlement amount is calculated on the basis of the best estimate. Non-current provisions are discounted where the effect of the time value of money is material.

Changes in the interest rate or the amount and timing of payments applied in measuring provisions for decommissioning, restoration, and similar obligations are recognized in the same amount as the related assets to be considered. Where the decrease in the amount of a provision is greater than the carrying amount of the related asset, the excess is recognized immediately in profit or loss.

O Recognition of Revenue, Interest and Dividends

In accordance with IFRS 15, revenue is recognized when the customer gains control of the asset. In several contracts for the sale of customer specific products, especially in the cards, passports and ID business, the Group transfers control during the production phase. Revenues relating to such contracts are realized based upon the percentage of completion of the products and therefore before the delivery of the assets to the customer.

In certain instances, G+D is the general contractor concerning the construction of paper mills, special facilities (e.g. production of security products), and personalization centres. The fulfillment of these types of contracts usually extends over a long period and can last up to several years until final completion. For construction contracts, the revenue is recorded over time provided that the revenue and expenses can be estimated reliably. The percentage of completion is generally determined using the output method (e.g. agreed milestones) or the cost-to-cost method. Profit recognized in the period is calculated by multiplying the contract revenues and costs by the percentage of completion less the results recognized in prior periods.

For long-term customer contracts in which the major components consist of the production, modification, or customizing of software, revenue is generally recognized upon customer acceptance as the percentage of completion cannot be reliable determined.

Giesecke+Devrient has contractual arrangements in which it performs multiple revenue-generating activities, for example, the delivery of card bodies and personalization services. Revenue allocation is based upon the relative stand-alone selling prices of the individual components of the total arrangement.

Across all business units, the increased scope of estimations referring to variable consideration affects the amount and the timing of revenue recognition.

Interest is recognized using the effective interest method. Dividends are recognized when the shareholder’s right to receive payment is established.

P Grants

Where grants are received for certain assets, they are offset against the acquisition or manufacturing costs of the related assets and therefore reduce the acquisition costs. The grants/allowances are released to the income statement in instalments in the form of a reduction of depreciation expense.

Other types of grants are recorded in the income statement in the period in which the entitlement arises.

Q Deferred Taxes

Deferred tax assets and liabilities are recognized on temporary differences between the carrying amounts in the consolidated balance sheet and the tax base, as well as for tax loss carryforwards that are expected to reduce tax expense in future periods in accordance with the liability method.

R Statement of Cash Flows

The statement of cash flows is prepared in accordance with IAS 7 and indicates the cash inflows and outflows during the fiscal year classified by cash flows from operating activities, investing activities and financing activities. Cash flows from operating activities are presented using the indirect method, in which earnings are adjusted for non-cash transactions. Moreover, items attributable to cash flows from investing activities and financing activities are eliminated. Cash flows from interest received and interest paid, as well as dividends received, are allocated to cash flows from operating activities. Cash outflows for the acquisition of additional shares in affiliated companies under common control are classified as cash flows from financing activities.

The cash flow funds comprise the balance sheet line item “cash and cash equivalents”. Cash and cash equivalents include cash on hand and cash at banks, as well as cash from funds and investments with an original maturity of up to three months.

S Change in Accounting and Valuation Policies

The IASB has published a series of pronouncements that were applied for the first time in fiscal year 2021. These had no major impact on the consolidated financial statements of G+D.

T New and Changed Accounting Pronouncements

The IASB has published further standards, interpretations and amendments to existing standards whose application is not yet mandatory and which have not been early adopted in the consolidated financial statements. These new standards and amendments are expected to have no material impact on the net assets, financial position, and results of operations of the Group.

IFRS 17 Insurance Contracts, including amendments to IFRS 17	IFRS 17 establishes principles for the identification, recognition, measurement, presentation and disclosure in the notes of insurance contracts. The amendments to IFRS 17 primarily included a deferral of the effective date.	Periods beginning on or after January 1, 2023
Amendments to IFRS 17 Insurance Contracts	First-time application of IFRS 17 and IFRS 9 – Comparative information: The minor ("narrow scope") amendment to IFRS 17 introduced the option to apply a "classification overlay approach" if certain criteria are met. This can increase the informative value of the comparative information on financial instruments in the year prior to the first-time application of IFRS 17.	Periods beginning on or after January 1, 2023
Amendments to IAS 1 Presentation of Financial Statements	Improvement in consistency regarding the classification of liabilities as current or non-current. Specifically, the intention is to provide rules on the classification of liabilities with an uncertain settlement date.	Periods beginning on or after January 1, 2024
Amendments to IAS 1 Presentation of Financial Statements, Practice Statement 2 and Amendments to IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors	Clarification that in future information only has to be provided on "material" and no longer on "significant" accounting policies. Furthermore, the term "accounting estimate" used in IAS 8 has been redefined.	Periods beginning on or after January 1, 2023
Amendments to IAS 12 Income Taxes	The amendments relate to an exemption from the initial recognition exemption in closely specified cases. These lead to a situation where deferred taxes, for instance on leases recognized at the lessee and on decommissioning obligations, must be recognized.	Periods beginning on or after January 1, 2023

2 Financial Assets

Financial assets are comprised of the following as of December 31, 2022 and 2021:

EUR million	Dec 31, 2022	Dec 31, 2021
Current		
Short-term investments (> 3 months and < 1 year)	0.2	51.6
Trading securities	86.8	74.8
Investment securities	9.1	30.5
Derivative financial instruments	2.8	0.2
Loans receivable from shareholders	5.2	–
Loans receivable from related parties	–	20.0
	104.1	**177.1**
Non-current		
Cash surrender value of reinsurance	20.1	19.8
Loans receivable from related parties	0.2	–
Loans to third parties	0.5	0.9
Investment securities	1.9	1.8
Derivative financial instruments (interest swap)	2.6	–
	25.3	**22.5**

Investment securities have been recorded at fair value in the amount of EUR 11.0 million as of December 31, 2022 and EUR 32.3 million as of December 31, 2021. The fair value represents the fair market value.

3 Accounts Receivable Trade and Other Accounts Receivable, net

Accounts receivable trade and other accounts receivable, net comprise the following as of December 31, 2022 and 2021:

EUR million	Dec 31, 2022	Dec 31, 2021
Current		
Accounts receivable trade	554.3	431.2
Accounts receivable from joint ventures and associated companies	3.5	0.9
Accounts receivable from related parties	0.2	0.1
Accounts receivable from shareholders	0.2	–
Other	27.1	17.9
Prepayments	49.9	45.4
	635.2	**495.5**
Allowance for doubtful accounts	(71.9)	(53.9)
	563.3	**441.6**
Non-current		
Accounts receivable trade	4.1	9.7
Prepayments on property, plant and equipment	9.5	3.6
	13.6	**13.3**

Aging structure of accounts receivable trade and other accounts receivable (excluding prepayments) as of December 31, 2022:

EUR million	Not past due	past due 1–30 days	past due 31–90 days	past due 91–180 days	past due 181–360 days	past due more than 360 days	Total
Accounts receivable trade and other accounts receivable	382.8	59.4	49.0	14.6	14.9	68.7	589.4
Less allowance for doubtful accounts on accounts receivable trade and other accounts receivable	(9.0)	(0.2)	(0.3)	(0.2)	(0.5)	(61.7)	(71.9)
Accounts receivable trade and other accounts receivable, net	**373.8**	**59.2**	**48.7**	**14.4**	**14.4**	**7.0**	**517.5**
Average credit losses in %	2.4	0.3	0.6	1.4	3.4	89.8	12.2

Aging structure of accounts receivable trade and other accounts receivable (excluding prepayments) as of December 31, 2021:

EUR million	Not past due	past due 1–30 days	past due 31–90 days	past due 91–180 days	past due 181–360 days	past due more than 360 days	Total
Accounts receivable trade and other accounts receivable	323.4	44.1	22.7	13.6	10.1	45.9	459.8
Less allowance for doubtful accounts on accounts receivable trade and other accounts receivable	(8.7)	(0.6)	(0.2)	(0.4)	(0.6)	(43.4)	(53.9)
Accounts receivable trade and other accounts receivable, net	**314.7**	**43.5**	**22.5**	**13.2**	**9.5**	**2.5**	**405.9**
Average credit losses in %	2.7	1.4	0.9	2.9	5.9	94.6	11.7

The allowances for expected credit losses for accounts receivable trade and other accounts receivable are as follows:

EUR million			2022			2021
	Estimated credit losses (impaired)	Estimated credit losses (not impaired)	Total	Estimated credit losses (impaired)	Estimated credit losses (not impaired)	Total
Balance as of January 1	**50.9**	**3.0**	**53.9**	**27.9**	**5.1**	**33.0**
Additions (through profit or loss)	22.8	1.1	23.9	25.9	0.2	26.1
Recoveries (through profit or loss)	(4.1)	(0.3)	(4.4)	(1.9)	(2.3)	(4.2)
Write-offs	(1.4)	–	(1.4)	(1.3)	–	(1.3)
Transfers	(0.2)	–	(0.2)	0.1	–	0.1
Foreign currency effects	0.1	–	0.1	0.2	–	0.2
Balance as of December 31	**68.1**	**3.8**	**71.9**	**50.9**	**3.0**	**53.9**

The allowances for expected credit losses (impaired) relate to several customers that disclosed that they would not be able to settle the outstanding balances due to their economic circumstances (such as change in credit rating or breach of contract or financial problems or similar).

Accounts receivable trade and other accounts receivable which have neither been impaired nor are past due as of the balance sheet date amounted to EUR 373.8 million and EUR 314.7 million as of December 31, 2022 and 2021. G+D anticipates that the full amount of accounts receivable which have neither been impaired nor are past due are collectible. There is no indication that the debtors will not be able to meet their payment obligations. This estimate is based on the payment history as well as extensive analysis relating to the customer default risk.

Allowances for doubtful accounts on accounts receivable from joint ventures, associated companies, as well as related parties were not recorded.

In 2015, the Group entered into a service concession arrangement with a foreign authority for the construction and operation of a common factory for the production of identification cards and passports (BOT model = Build-Operate-Transfer). In addition to the one-year construction phase, it also provides for a ten-year operational phase. The recognized accounts receivable from the service concession agreement as of December 31, 2021 in the amount of EUR 12.3 million were recorded as non-current contract assets, since the revenues cannot be realized until the operational phase. These accounts receivable, which now amount to EUR 12.8 million, were fully written off as of December 31, 2022. In fiscal year 2022, G+D did not record any net income or expense as the revenues were equal to the corresponding expenses.

4 Inventories, net

Inventories are comprised of the following as of December 31, 2022 and 2021:

EUR million	Dec 31, 2022	Dec 31, 2021
Raw materials	231.3	127.6
Work in process	83.7	91.9
Finished goods	17.9	9.2
Merchandise	76.0	54.0
Spare parts, modules, sensors - Currency Management Solutions	68.2	55.7
	477.1	**338.4**

In fiscal years 2022 and 2021, write-downs on inventory amounted to EUR 15.1 million and EUR 20.0 million, respectively.

There is no inventory which serves as collateral for financial liabilities as of December 31, 2022 and 2021, respectively.

5 Other Current Assets

EUR million	Dec 31, 2022	Dec 31, 2021
Taxes receivable (other than income taxes)	32.7	26.0
Restricted cash	10.6	9.6
Other	5.5	5.3
	48.8	**40.9**

6 Investments

Investments include the following:

EUR million	Dec 31, 2022	Dec 31, 2021
Investments accounted for under the equity method	45.5	43.4
Investments in other related parties	12.6	10.8
	58.1	**54.2**

The following investments (see Note 1c “Consolidated Group and Principles of Consolidation“) are accounted for using the equity method of accounting:

	Interest in the company
Name of the joint venture	
Podsystem MX SAPI de CV, León	51.0 %
Shenzen Giesecke & Devrient Currency Automation Systems Co. Ltd., Shenzen	50.0 %
E-Kart Elektronik Kart Sistemleri Sanayi ve Ticaret Anonim Sirketi, Gebze	50.0 %
UGANDA SECURITY PRINTING COMPANY (USPCL) LIMITED, Entebbe	29.4 %
Name of the associated company	
Netcetera Group AG, Zurich	30.0 %
Netset Global Solutions d.o.o., Belgrade	24.0 %
Build38 GmbH, Munich[1]	20.9 %
Relief Validation Ltd, Dhaka	15.0 %

[1] The shares were reduced

Joint Ventures

Podsystem MX SAPI de CV serves as a sales office for the Pod Group.

Shenzen Giesecke & Devrient Currency Automation Systems Co. Ltd. sells and installs banknote processing systems.

E-Kart Elektronik Kart Sistemleri Sanayi ve Ticaret Anonim Sirketi manufactures and sells cards, card systems, and card-based solutions.

UGANDA SECURITY PRINTING COMPANY (USPCL) LIMITED., Uganda is manufacturing passports and identity documents for the local market.

Associated companies

Netcetera Group AG is engaged in IT related services as well as in the distribution of products of the IT business.

Netset Global Solutions d.o.o. develops specialized information systems with integrated information protection for electronic identification, for large national registers, for smart card applications and cryptographic solutions.

The purpose of the company Build38 GmbH is the development and distribution of software solutions as service provider for third parties, including related consulting services.

Effective November 3, 2022 Veridos acquired 25.0 % of the shares in Relief Validation Ltd. As G+D holds 60 % of the shares of Veridos, 15.0 % in the shares of Relief Validation Ltd. are held by G+D. Relief Validation Ltd. provides digital certificates and electronic signatures to the local market in Bangladesh. Thus, the company offers modern and digital solutions for authorities (i.e. online applications for government documents and tax returns) as well as private companies (i.e. KYC for commercial banks) with the highest security standards.

Effective December 16, 2022 G+D liquidated the investment in Emirates German Security Printing L.L.C., Abu Dhabi, United Arab Emirates. The liquidation proceeds were recorded within share in earnings from equity investments using the equity method.

Investments in other related parties

G+D owns 8.1 % of the shares Brighter AI Technologies GmbH, Berlin, 6.5 % of the shares in FINANCIAL NETWORK ANALYTICS LTD, London, 5.1 % of the shares in IDnow GmbH, Munich, 3.9 % of the shares in Metaco SA, Lausanne, 3.0 % of the shares in SALV TECHNOLOGIES OÜ, Tallinn, and 0.6 % of the shares in Verimi GmbH, Frankfurt am Main. As G+D classifies its influence on these investments as not significant, these investments are classified as investments in other related parties. The investments are classified as held-to-collect and sell and measured at fair value through other comprehensive income.

Joint Ventures and associated companies

The following table summarizes the financial information for material joint ventures and associated companies based on their financial statements prepared in accordance with IFRS. This information is adjusted for fair value adjustments at acquisition and differences in the Group accounting policies:

EUR million	Joint Venture Shenzhen Giesecke & Devrient Currency Automation Systems Co. Ltd.	
	2022	**2021**
Revenues	12.8	15.1
Profit from continuing operations	4.6	–
thereof depreciation and amortization	(0.5)	(0.7)
thereof interest income/(expense)	0.1	(0.1)
thereof income taxes	(0.3)	(0.9)
Other comprehensive income	0.6	0.2
Total comprehensive income	**5.2**	**0.2**
Group's share of total comprehensive income	2.6	0.1
Elimination of intercompany profits	(0.2)	0.2
Group's share of total comprehensive income	**2.4**	**0.3**
Dividends received during the year	**(0.4)**	**(1.8)**
Current assets	16.7	12.1
thereof cash and cash equivalents	12.5	9.0
Non-current assets	2.5	3.3
Current liabilities	(6.4)	(3.0)
Non-current liabilities	–	(3.9)
thereof non-current financial liabilities	–	(3.7)
Net assets	**12.8**	**8.5**
Group's share of net assets	6.4	4.2
Elimination of intercompany profits	(0.3)	(0.1)
Carrying amount of interest in joint venture at year end	**6.1**	**4.1**

Non-material joint ventures

The following table summarizes the financial information for the Group’s share in non-material joint ventures based on the amounts as reported in the Group’s financial statements:

EUR million	**Dec 31, 2022**	**Dec 31, 2021**
Carrying amount of interest in non-material joint ventures	**7.9**	**5.6**
Share of		
Gain/(Loss) from continuing operations	1.9	1.3
Other comprehensive income	0.4	–
Total comprehensive income	**2.3**	**1.3**

Non-material associated companies

The following table summarizes the financial information for the Group's share in non-material associated companies based on the amounts as reported in the Group's financial statements:

EUR million	Dec 31, 2022	Dec 31, 2021
Carrying amount of interest in non-material associated companies[1]	**31.5**	**33.7**
Share of		
Capital increase	0.6	2.1
Gain/(Loss) from continuing operations	(2.6)	(2.3)
Dividends received during the year	(0.4)	–
Other comprehensive income	0.2	–
Total comprehensive income	**(2.8)**	**(2.3)**

[1] The associated company Netcetera Group AG is classified as non-material.

7 Intangible Assets

A summary of the activity for goodwill and other intangible assets is as follows:

EUR million	Customer base/ Rights	Development costs/ Technology	Software	Goodwill	**Total**
Costs					
January 1, 2021	**38.4**	**142.0**	**187.3**	**69.7**	**437.4**
Additions	0.2	16.4	11.1	–	27.7
Transfers	0.1	(0.9)	0.9	–	0.1
Changes in consolidation structure	3.5	2.2	4.4	17.9	28.0
Disposals	(1.8)	(3.4)	(8.8)	–	(14.0)
Foreign currency effects	1.3	(0.2)	1.6	(0.3)	2.4
December 31, 2021	**41.7**	**156.1**	**196.5**	**87.3**	**481.6**
January 1, 2022	**41.7**	**156.1**	**196.5**	**87.3**	**481.6**
Additions	–	12.4	11.1	–	23.5
Changes in consolidation structure	25.6	–	7.4	37.3	70.3
Disposals	(0.3)	–	(8.9)	–	(9.2)
Foreign currency effects	–	(1.2)	0.1	(2.3)	(3.4)
December 31, 2022	**67.0**	**167.3**	**206.2**	**122.3**	**562.8**

The additions in 2022 and 2021 comprise self-constructed intangible assets in the amount of EUR 15.6 million and EUR 19.8 million, respectively.

EUR million	Customer base/ Rights	Development costs/ Technology	Software	Goodwill	**Total**
Accumulated amortization					
January 1, 2021	**28.3**	**98.2**	**141.1**	**1.7**	**269.3**
Additions	2.8	10.1	15.4	–	28.3
Transfers	–	(0.4)	0.4	–	–
Impairment losses	–	5.0	2.6	–	7.6
Disposals	(1.8)	(3.4)	(8.7)	–	(13.9)
Foreign currency effects	1.2	(0.3)	0.9	–	1.8
December 31, 2021	**30.5**	**109.2**	**151.7**	**1.7**	**293.1**
January 1, 2022	**30.5**	**109.2**	**151.7**	**1.7**	**293.1**
Additions	3.8	13.4	15.6	–	32.8
Disposals	(0.1)	–	(8.6)	–	(8.7)
Foreign currency effects	0.2	(1.1)	(0.1)	–	(1.0)
December 31, 2022	**34.4**	**121.5**	**158.6**	**1.7**	**316.2**
Carrying value					
January 1, 2021	10.1	43.8	46.2	68.0	168.1
December 31, 2021	11.2	46.9	44.8	85.6	188.5
December 31, 2022	**32.6**	**45.8**	**47.6**	**120.6**	**246.6**

The amounts of amortization of intangible assets recorded in the functional areas of the income statement are as follows:

EUR million	**2022**	**2021**
Cost of goods sold	26.0	20.7
Selling expenses	0.8	1.2
Research and development expenses	0.5	0.7
General and administrative expenses	5.5	5.7
	32.8	**28.3**

In fiscal year 2022, no impairment losses were recorded. In the prior year, impairment losses in the amount of EUR 2.6 million were recorded on software and EUR 0.4 million on development costs within cost of goods sold, EUR 1.5 million were recorded within research and development expenses, EUR 2.5 million were recorded within general and administration expenses and EUR 0.6 million were recorded within selling expenses.

The goodwill from CI Tech Components AG in the amount of EUR 14.0 million (prior year EUR 14.0 million), as well as the goodwill from Giesecke+Devrient Currency Technology Netherlands B.V. in the amount of EUR 4.8 million (prior year EUR 4.8 million), were allocated to the CGU "Currency Management Solutions". As the CGU "Currency Management Solutions" business is mainly conducted in Euro, these goodwills are recorded in Euro. The goodwill from secunet AG in the amount of EUR 48.2 million (prior year EUR 10.9 million) was assigned to the "secunet" CGU. In fiscal year 2022, there was an increase in goodwill in the amount of EUR 37.3 million. This increase results from acquired shares as part of a share deal in the associated company SysEleven GmbH. In fiscal year 2021, there was an increase in goodwill in the amount of EUR 5.7 million. This increase resulted from acquired shares as part of a share deal in the associated company stashcat GmbH. Sensitivity analyses are not required since the recoverability of these goodwills is not deemed to be critical.

The goodwill from Veridos Matsoukis S.A. Security Printing in the amount of EUR 2.1 million (prior year EUR 2.1 million) and the goodwill from Veridos GmbH in the amount of EUR 4.4 million (prior year EUR 4.4 million), as well as the goodwill from E-SEEK Inc. in the amount of EUR 4.1 million (prior year 3.9 EUR million), recognized within the acquisition of the companies were allocated to the "Veridos" CGU. The goodwill from Giesecke+Devrient Mobile Security Sweden AB in the amount of EUR 26.4 million (prior year EUR 28.5 million) was assigned to the business sector "Mobile Security" and thereby to the divisional CGUs "Secure Transactions + Services " in the amount of EUR 7.5 million (prior year EUR 8.1 million), and "Trusted Connected Devices" in the amount of EUR 18.9 million (prior year EUR 20.4 million). The goodwill acquired in the connection with the purchase of C.P.S. Technologies S.A.S. in the amount of EUR 0.5 million (prior year EUR 0.5 million) was allocated to the CGU "Secure Transactions + Services" . The goodwill from the acquisition of the Crédit Agricole's personalization business in the amount of EUR 4.3 million (prior year EUR 4.3 million) was also allocated to the CGU "Secure Transactions + Services". The goodwill from the acquisition of the Pod Group in the amount of EUR 11.8 million (prior year EUR 12.2 million) was allocated to the CGU "Trusted Connected Devices".

In performing the impairment tests for goodwill, the recoverable amount of the CGU is based on the value in use. The value in use is the present value of the future cash flows expected to be derived from the CGU. Since 2014, the cash flow projections are based upon G+D's five-year plans. The cash flows for the CGU "secunet" were determined using the planning assumptions of an average EBITDA margin of 21.5 % (prior year 18.3 %) during the planning period and perpetual growth rate of 1.0 % (prior year 1.0 %). The cash flows for the CGU "Veridos" were determined using the planning assumptions of an average EBITDA margin of 11.0 % (prior year 11.3 %) during the planning period and perpetual growth rate of 1.0 % (prior year 1.0 %). The cash flows for the CGUs "Secure Transactions + Services" und "Trusted Connected Devices" were determined using the planning premises of average EBITDA margins of 11.9 % and 9.9 % (prior year 12.1 % and 11.0 %) during the planning period and perpetual growth rate of 1.0 % (prior year 1.0 %). The cash flows for the CGU "Currency Management Solutions" were determined using the planning premises of average EBITDA margin of 12.3 % (prior year 11.4 %) during the planning period and perpetual growth rate of 1.0 % (prior year 1.0 %).

In discounting the cash flows of the "secunet" CGU, pre-tax interest rate of 12.6 % was used in 2022 and 11.2 % in 2021. For the CGU "Currency Management Solutions", a pre-tax interest rate of 12.2 % was applied in 2022 and 11.3 % in 2021. In discounting the cash flows of the "Veridos" CGU, a pre-tax interest rate of 14.1 % was applied in 2022 and 12.8 % in 2021. In discounting the cash flows of the "Secure Transactions + Services" and "Trusted Connected Devices" CGUs, a pre-tax interest rate of 13.0 % was used in 2022 and 12.0 % in 2021. Impairments on goodwill were not recorded in fiscal years 2022 and 2021.

A sensitivity analysis was carried out for the goodwill in the CGU "Veridos". An increase in the interest rate from 14.1 % to 18.2 % ceteris paribus as of December 31, 2022 would result in a first time impairment loss. A reduction in the cash flows for the terminal value ceteris paribus from EUR 31.3 million to EUR 19.1 million as of December 31, 2022 would result in an impairment loss. The headroom amounted to EUR 51.1 million as of December 31, 2022.

A sensitivity analysis was carried out for the goodwill in the CGUs "Secure Transactions + Services" and "Trusted Connected Devices". An increase in the interest rate ceteris paribus from 13.0 % to 22.4 % for "Secure Transactions + Services" as of December 31, 2022, from 13.0 % to 14.2 % for "Trusted Connected Devices" would result in a first time impairment loss. A reduction in the cash flows for the terminal value ceteris paribus from EUR 54.8 million to EUR 14.2 million for "Secure Transactions + Services" as of December 31, 2022, from EUR 26.0 million to EUR 22.2 million for "Trusted Connected Devices" would result in an impairment loss. The headroom amounted to EUR 213.1 as of December 31, 2022.

No intangible assets serve as collateral for financial liabilities (see Note 13 "Financial Liabilities") as of December 31, 2022 and 2021, respectively.

8 Property, Plant and Equipment

A summary of the activity for property, plant and equipment[1] is as follows:

EUR million	Land and buildings[1]	Technical equipment and machinery[1]	Other plant and office equipment[1]	Construction in process	Total
Costs					
January 1, 2021	**580.5**	**812.9**	**224.6**	**15.0**	**1,633.0**
Additions	12.7	21.0	22.4	12.9	69.0
Transfers	0.2	10.2	5.8	(11.8)	4.4
Changes in consolidation structure	–	0.1	0.1	–	0.2
Disposals	(8.3)	(14.2)	(13.2)	–	(35.7)
Foreign currency effects	6.9	15.4	3.6	0.1	26.0
December 31, 2021	**592.0**	**845.4**	**243.3**	**16.2**	**1,696.9**
January 1, 2022	**592.0**	**845.4**	**243.3**	**16.2**	**1,696.9**
Additions	25.2	22.6	22.2	10.5	80.5
Transfers	0.1	7.3	2.4	(11.2)	(1.4)
Changes in consolidation structure	17.3	10.8	2.6	0.1	30.8
Disposals	(37.1)	(13.0)	(14.6)	–	(64.7)
Foreign currency effects	1.5	3.7	1.3	0.1	6.6
December 31, 2022	**599.0**	**876.8**	**257.2**	**15.7**	**1,748.7**

[1] Including assets under leases (see Note 9 "Leasing").

EUR million	Land and buildings[1]	Technical equipment and machinery[1]	Other plant and office equipment[1]	Construction in process	Total
Accumulated amortization					
January 1, 2021	**306.6**	**630.4**	**166.9**	**–**	**1,103.9**
Additions	32.4	43.3	23.8	–	99.5
Transfers	0.1	(0.1)	2.8	–	2.8
Impairment losses	1.6	3.0	–	–	4.6
Disposals	(7.5)	(14.0)	(12.8)	–	(34.3)
Foreign currency effects	4.3	12.3	3.0	–	19.6
December 31, 2021	**337.5**	**674.9**	**183.7**	**–**	**1,196.1**
January 1, 2022	**337.5**	**674.9**	**183.7**	**–**	**1,196.1**
Additions	30.6	41.3	24.1	–	96.0
Impairment losses	–	0.2	–	–	0.2
Disposals	(35.3)	(12.9)	(13.0)	–	(61.2)
Foreign currency effects	0.8	2.7	0.7	–	4.2
December 31, 2022	**333.6**	**706.2**	**195.5**	**–**	**1,235.3**
Carrying value					
January 1, 2021	273.9	182.5	57.7	15.0	529.1
December 31, 2021	254.5	170.5	59.6	16.2	500.8
December 31, 2022	**265.4**	**170.6**	**61.7**	**15.7**	**513.4**

In fiscal years 2022 and 2021, Giesecke+Devrient recorded impairments amounting to EUR 0.2 million (previous year EUR 4.6 million) on property, plant and equipment in cost of goods sold.

The carrying value of property, plant and equipment which serves as collateral for financial liabilities (see Note 13 “Financial Liabilities”) amounted to EUR 1.0 million and EUR 2.7 million as of December 31, 2022 and 2021, respectively.

Commitments for the purchase of property, plant and equipment amounted to EUR 15.4 million and EUR 20.0 million as of December 31, 2022 and 2021, respectively.

9 Leasing

As a lessee, Giesecke+Devrient rents various lease objects. This includes land and buildings, manufacturing facilities, electronic data processing equipment, motor vehicles and other office equipment. Lease contracts are negotiated for different terms and may include extension or cancellation options. The conditions are negotiated individually and include various conditions.

The Group includes right-of-use assets within property, plant and equipment in the consolidated balance sheet. A summary of the activity for right-of-use assets is as follows:

EUR million	Land and buildings	Technical equipment and machinery	Other plant and office equipment	**Total**
January 1, 2021	**73.7**	**1.8**	**4.7**	**80.2**
Additions	7.7	1.2	3.0	11.9
Disposals	(0.4)	–	(0.2)	(0.6)
Depreciation	(19.9)	(0.9)	(2.9)	(23.7)
Foreign currency effects	1.7	0.1	0.1	1.9
December 31, 2021	**62.8**	**2.2**	**4.7**	**69.7**
January 1, 2022	**62.8**	**2.2**	**4.7**	**69.7**
Additions	23.0	0.5	2.9	26.4
Disposals	(1.4)	–	(0.1)	(1.5)
Changes in consolidation structure	11.7	1.4	–	13.1
Depreciation	(20.1)	(1.5)	(3.0)	(24.6)
Foreign currency effects	0.1	0.1	–	0.2
December 31, 2022	**76.1**	**2.7**	**4.5**	**83.3**

The lease obligations are recorded as current lease obligations and non-current lease obligations in the consolidated balance sheet.

The following expenses were recorded in the income statement due to leases:

EUR million	**2022**	**2021**
Depreciation on right-of-use assets	(24.6)	(23.7)
Interest expense from lease obligations	(1.2)	(1.4)
Expenses for short-term leases	(0.6)	(0.5)
Expenses from leases for low value assets	(0.8)	(0.5)
	(27.2)	**(26.1)**

The total cash outflows for leases in 2022 amounted to EUR 26.5 million (prior year EUR 25.2 million).

The future cash outflows from lease payments amount to:

EUR million	
Less than one year	24.1
Between one and five years	57.5
More than five years	12.1
Total minimum lease payments	93.7
Less amount representing interest	(4.0)
Present value of net minimum lease payments	**89.7**

The present value of net minimum lease payments is as follows:

EUR million	
Less than one year	22.8
Between one and five years	55.0
More than five years	11.9
Present value of net minimum lease payments	**89.7**

Potential future cash outflows in the amount of EUR 17.9 million EUR (prior year EUR 30.8 million) were not included in the lease obligations as it is not reasonably certain that the leases will be extended or not cancelled.

Regarding the summary of the activity for lease obligations, refer to Note 13 “Financial Liabilities”.

10 Accounts Payable Trade and Other Accounts Payable

EUR million	Dec 31, 2022	Dec 31, 2021
Current		
Accounts payable trade due to third parties	375.7	322.1
Accounts payable due to associated companies and joint ventures	1.5	0.9
Deposits received/deferred income	5.8	–
	383.0	**323.0**

11 Provisions

EUR million	Warranties	Personnel related costs	Licenses and patent infringements	Onerous contracts	Restructuring	Other	Total
January 1, 2022	**63.0**	**15.9**	**1.0**	**13.1**	**3.8**	**26.0**	**122.8**
Additions	9.7	5.4	0.3	13.5	1.0	14.6	44.5
Transfers	(0.3)	–	(0.1)	1.0	–	–	0.6
Changes in consolidation structure	–	–	–	–	–	1.8	1.8
Interest component	–	0.1	–	–	–	–	0.1
Utilization	(3.7)	(7.2)	(0.1)	(5.6)	(1.9)	(8.7)	(27.2)
Release	(35.7)	(0.4)	–	(5.6)	(1.0)	(6.3)	(49.0)
Foreign currency effects	0.1	–	–	(0.1)	–	(0.2)	(0.2)
December 31, 2022	**33.1**	**13.8**	**1.1**	**16.3**	**1.9**	**27.2**	**93.4**
thereof current	33.1	8.2	1.1	15.5	1.9	17.0	76.8
thereof non-current	–	5.6	–	0.8	–	10.2	16.6

Personnel-related provisions include obligations for pre-retirement part-time working arrangements and long-service awards. The interest component on pre-retirement part time working arrangements and long-service awards in the amount of EUR 0.1 million is included in interest expense.

Provisions for restructuring mainly consist of provisions relating to personnel measures.

Other provisions include, in particular, provisions for penalties, asset retirement obligations and litigation.

Refer to Note 1(n) “Provisions” for the release of warranty provisions.

12 Other Current Liabilities

EUR million	Dec 31, 2022	Dec 31, 2021
Payroll and social security taxes	117.6	119.9
Sales and other taxes	31.4	28.7
Other liabilities	25.7	10.3
	174.7	**158.9**

13 Financial Liabilities

Financial liabilities consist of the following as of December 31, 2022 and 2021:

EUR million	Dec 31, 2022	Dec 31, 2021
Current		
Short-term borrowings due to financial institutions	–	0.5
Current portion of debt due to other third parties	3.2	–
Current portion of debt due to financial institutions	86.6	15.5
Current portion of debt due to Giesecke+Devrient Foundation	21.0	4.3
Current portion of debt due to Giesecke+Devrient Foundation Geldscheinsammlung	0.4	–
Accrued interest on debt to financial institutions	1.8	1.4
Derivative financial instruments	0.5	0.7
Total current portion of financial liabilities	**113.5**	**22.4**
Non-current		
Unsecured notes payable to financial institutions, interest rates 0.81 % to 5.72 %, due through July 29, 2029	502.0	298.0
Unsecured notes payable to Giesecke+Devrient Foundation, interest rate 1.20 %, due through February 28, 2023	21.0	21.0
Unsecured notes payable to Giesecke+Devrient Foundation Geldscheinsammlung, interest rate 1.00 %, due through November 17, 2023	0.4	0.4
Unsecured notes payable to other third parties, interest rates 0.00 % to 3.00 %, due through September 30, 2026	23.0	27.1
Mortgage notes payable to financial institutions, interest rates 1.03 % to 1.55 %, due through June 30, 2024	1.0	2.7
Total	**547.4**	**349.2**
Less current portion of non-current financial liabilities	(111.2)	(19.8)
Total non-current portion of financial liabilities	436.2	329.4
Total financial liabilities	**549.7**	**351.8**

The aggregate maturities of financial liabilities for each of the following years are as follows:

EUR million	
2023	113.5
2024	18.1
2025	131.7
2026	154.5
2027	65.0
thereafter	66.9
	549.7

A summary of the activity for financial liabilities is as follows as of December 31, 2022 and 2021:

EUR million	Non-current borrowings (incl. short-term portion)	Current borrowings	Derivative financial instruments	Sum of financial liabilities	Lease obligations[1]	Total
Carrying value January 1, 2021	**481.9**	**7.2**	**0.5**	**489.6**	**82.4**	**572.0**
Repayments during the period	(137.0)	(5.5)	–	(142.5)	(22.8)	(165.3)
New borrowings	0.4	0.5	–	0.9	–	0.9
Total change in cash flow from financing activities	**(136.6)**	**(5.0)**	**–**	**(141.6)**	**(22.8)**	**(164.4)**
New lease contracts	–	–	–	–	11.2	11.2
Termination of lease contracts	–	–	–	–	(0.5)	(0.5)
Acquisitions	3.6	–	–	3.6	–	3.6
Other changes	–	(0.3)	–	(0.3)	–	(0.3)
Fair value changes	–	–	0.2	0.2	–	0.2
Currency effects	0.3	–	–	0.3	2.1	2.4
Carrying value December 31, 2021	**349.2**	**1.9**	**0.7**	**351.8**	**72.4**	**424.2**
Fair value December 31, 2021	**351.5**	**1.9**	**0.7**	**354.1**	**72.4**	**426.5**
Carrying value January 1, 2022	**349.2**	**1.9**	**0.7**	**351.8**	**72.4**	**424.2**
Repayments during the period	(17.9)	(0.5)	–	(18.4)	(23.9)	(42.3)
New borrowings	223.2	–	–	223.2	–	223.2
Total change in cash flow from financing activities	**205.3**	**(0.5)**	**–**	**204.8**	**(23.9)**	**180.9**
New lease contracts	–	–	–	–	26.4	26.4
Termination of lease contracts	–	–	–	–	(1.5)	(1.5)
Acquisitions	0.6	–	–	0.6	16.1	16.7
Other changes	–	0.4	–	0.4	–	0.4
Fair value changes	(0.2)	–	(0.2)	(0.4)	–	(0.4)
Transfers	(8.0)	–	–	(8.0)	–	(8.0)
Currency effects	0.5	–	–	0.5	0.2	0.7
Carrying value December 31, 2022	**547.4**	**1.8**	**0.5**	**549.7**	**89.7**	**639.4**
Fair value December 31, 2022	**476.9**	**1.8**	**0.5**	**479.2**	**89.7**	**568.9**

[1] For additional information regarding lease obligations refer to Note 9 “Leasing”.

The transfers in 2022 relate to a waiver of receivables of a non-controlling interest.

Lines of credit

Giesecke+Devrient maintains global credit facilities in the amount of EUR 943.8 million (prior year EUR 1,027.6 million). As of December 31, 2022, G+D used EUR 328.0 million (prior year EUR 262.6 million) of these facilities for bank guarantees, EUR 4.0 million (prior year EUR 4.5 million) for credit orders and EUR 0.0 million (prior year EUR 0.0 million) due to other third parties. Thus, EUR 611.9 million (prior year EUR 760.5 million) in credit lines were not used as of the reporting date.

14 Pensions and Related Liabilities

Description of the plans

Giesecke+Devrient maintains defined benefit pension plans for a considerable number of employees in Germany and at a few subsidiaries abroad. These defined benefit pension plans charge the Group with actuarial risks such as longevity risks, currency exchange risks and interest rate risks.

In addition to the number of years of service, the defined benefit pension plans are based on the current salary received or are dependent on the final salary. For most of the employees who had employment contracts from January 1, 2002 onwards with a German Group company, the pension plan is based on pension components whose benefits are adjusted each year by 1.0 %. Furthermore, employees in German Group companies are granted the right to use particular salary components for future pension payments.

The measurement date for the calculation of the DBO for the principal pension plans and the other key postretirement benefits is December 31.

Payment obligations exist for defined contribution state pension plans in Germany and abroad.

For new employees joining G+D after January 1, 2014, the existing defined contribution plan was terminated. For employees joining the company from January 1, 2014 on, an externally financed pension obligation was introduced.

Total provisions for pensions and related liabilities

Obligations under the Giesecke+Devrient pension plans and other postretirement benefit plans are comprised of the following:

EUR million	Dec 31, 2022	Dec 31, 2021
Pension benefits	461.2	680.6
Other postretirement benefits	4.0	3.5
Other	1.0	0.9
Total accrual for pension and related liabilities	**466.2**	**685.0**

Pensions and other postretirement benefits

Details of the changes in the defined benefit obligation, the current value of plan assets and the other postretirement benefits are summarized in the following tables:

EUR million	Pension benefit plans		Other postretirement benefit plans	
	Dec 31, 2022	**Dec 31, 2021**	**Dec 31, 2022**	**Dec 31, 2021**
Change in defined benefit obligation				
Defined benefit obligation at beginning of year	**690.0**	**716.4**	**3.5**	**3.7**
Foreign currency exchange rate differences	0.1	0.1	(0.1)	(0.1)
Service cost	6.9	7.6	0.4	0.4
Interest cost	9.6	8.0	0.1	0.2
Past service cost	0.1	(0.4)	0.7	–
Plan amendments	0.1	(0.4)	0.7	–
Plan participants' contributions	–	–	0.1	–
Changes in consolidation structure	(0.1)	(0.1)	–	–
Actuarial (gains)/losses	(218.0)	(25.0)	(0.5)	(0.5)
due to demographic parameter changes	–	–	–	(0.1)
due to financial parameter changes	(223.2)	(23.4)	0.1	(0.4)
due to experience adjustments	5.2	(1.6)	(0.6)	–
Benefits paid	(19.5)	(16.6)	(0.2)	(0.2)
Defined benefit obligation at end of year	**469.1**	**690.0**	**4.0**	**3.5**
Change in plan assets				
Fair value of plan assets at beginning of year	**9.4**	**9.0**	**–**	**–**
Expected interest income	0.2	–	–	–
Divestment	(1.0)	–	–	–
Employer contributions	0.6	0.4	–	–
Other	(1.1)	–	–	–
Benefits paid	(0.2)	–	–	–
Fair value of plan assets at end of year	**7.9**	**9.4**	**–**	**–**
Net amount recognized at end of year	**461.2**	**680.6**	**4.0**	**3.5**

Net liability recorded

The development of the net liability recorded in fiscal years ended December 31, 2022 and 2021 is as follows:

EUR million	Pension benefit plans		Other postretirement benefit plans	
	Dec 31, 2022	Dec 31, 2021	Dec 31, 2022	Dec 31, 2021
Net liability at beginning of year	**680.6**	**707.4**	**3.5**	**3.7**
Service cost	6.9	7.6	0.4	0.4
Past service cost	0.1	(0.4)	0.7	–
Plan amendments	0.1	(0.4)	0.7	–
Interest expense/(income)	9.4	8.0	0.1	0.2
Changes in consolidation structure	0.9	(0.1)	–	–
Actuarial (gains)/losses	(218.0)	(25.0)	(0.5)	(0.5)
due to demographic parameter changes	–	–	–	(0.1)
due to financial parameter changes	(223.2)	(23.4)	0.1	(0.4)
due to experience adjustments	5.2	(1.6)	(0.6)	–
Benefits paid (excluding plan settlements)	(19.3)	(16.6)	(0.2)	(0.2)
Employer contributions	(0.6)	(0.4)	–	–
Plan participants’ contributions	–	–	0.1	–
Other	1.1	–	–	–
Foreign currency exchange rate differences	0.1	0.1	(0.1)	(0.1)
Net liability at end of year	**461.2**	**680.6**	**4.0**	**3.5**

Plan assets

The plan assets were invested in the following classes of assets:

Information as % of plan assets	Dec 31, 2022	Dec 31, 2021
Cash surrender value of reinsurance	92.4	93.3
Equity securities	7.3	6.2
Money market funds	0.3	0.5
	100.0	**100.0**

The majority of the plan assets are invested in the form of cash surrender value of reinsurance policies and shares in mutual funds for German companies. The management and reinvestment are controlled by defined investment policies which foresee investment in high quality and diversified investment classes.

The additions to plan assets planned for fiscal year 2023 amount to EUR 0.5 million (prior year EUR 0.0 million). There are no minimum funding requirements.

Actuarial assumptions

The discount rates and percentages for salary and pension increases assumed in the determination of the future pension obligations fluctuate in accordance with the economic situation in the countries in which the pension plans exist. The weighted average assumptions for the calculation of the actuarial amounts are as follows:

in %	Pension benefit plans		Other postretirement benefit plans	
	Dec 31, 2022	**Dec 31, 2021**	**Dec 31, 2022**	**Dec 31, 2021**
Discount rate/expected return on plan assets	4.2	1.4	8.7	7.6
Rate of compensation increase	2.3	2.2	9.0	7.7
Rate of pension progression	2.0	1.6	–	–
Mortality tables				
Germany	RT Heubeck 2018 G	RT Heubeck 2018 G		

The rate of the expected long-term return on plan assets corresponds with the discount rate. The rate of pension progression only amounts to 2.0 % for years starting 2025. The effects of 2023 and 2024 are 3.5 % and 2.25 %. The weighted average term for pension obligations amounts to 14.7 years (prior year 18.0 years) and 8.5 years for other benefit obligations (prior year 9.3 years).

Sensitivity analysis

The results of the sensitivity analyses for the significant actuarial assumptions for pension obligations as of December 31, 2022 and December 31, 2021 are as follows:

EUR million	**Dec 31, 2022**	**Dec 31, 2021**
Discount rate + 50 basis points	(35.3)	(79.4)
Discount rate – 50 basis points	38.2	89.0
Rate of pension progression + 25 basis points	9.9	34.3
Rate of pension progression – 25 basis points	(9.4)	(32.8)
Increase of 2 years in life expectancy	33.1	70.7

The assumptions for all sensitivity calculations were not performed jointly, but rather individually for each calculation assumption examined.

Contributions to pension plans

Contributions to state pension plans in the amount of EUR 30.5 million and EUR 30.4 million were recorded in 2022 and 2021, respectively. Payments amounting to EUR 3.3 million and EUR 2.6 million were made for the newly established company pension plans in 2022 and 2021, respectively.

15 Revenue

Revenue is comprised of the following categories:

EUR million	2022	2021
Sales of goods	2,032.4	2,101.5
Rendering of services	438.3	209.4
Royalties	56.4	65.7
	2,527.1	**2,376.6**

The following table contains the revenue separated in subgroups, divisions and the time of revenue recognition:

EUR million	2022	2021
Currency Technology	1,004.2	1,052.9
Banknote Solutions	496.3	552.6
Currency Management Solutions	507.8	500.3
Mobile Security	1,013.3	811.3
Veridos	192.3	197.7
secunet	347.2	337.6
Group internal	(29.9)	(22.9)
	2,527.1	**2,376.6**

In the division Banknote Solutions and in the subgroups Veridos and secunet, revenue is mainly recognized over time, whereas in the subgroup Mobile Security, revenue is largely recognized at a point in time. In the division Currency Management Solutions, revenue is also increasingly recognized over time, but still, predominantly, at a point in time.

16 Income and Expenses Relating to Other Periods

EUR million	2022	2021
Income relating to other periods	62.9	31.2
Expenses relating to other periods	(14.3)	(28.6)
	48.6	**2.6**

Income relating to other periods consists primarily of releases of warranty provisions, provisions for onerous contracts and other provisions included in cost of goods sold, as well as reversals of allowances (see Note 3 “Accounts Receivable Trade and Other Accounts Receivable, net”) recorded in selling expenses. For the most part, expenses relating to other periods comprise tax expenses for prior years recorded in income tax expense.

17 Other Financial Income, net

EUR million	2022	2021
Gains/(losses) from trading securities, net	(9.4)	6.8
Foreign currency exchange gains/(losses), net	(12.9)	5.7
Gains/(losses) from derivative financial instruments, net	12.7	(12.5)
Other financial income/(expenses), net	0.2	–
	(9.4)	**–**

The changes in net unrealized gains and losses on trading securities included in earnings during the fiscal years ending December 31, 2022 and 2021 were EUR –10.7 million and EUR 4.5 million, respectively.

18 Interest Income and Interest Expense

EUR million	2022	2021
Interest income		
Loans and receivables	0.4	0.1
Cash and cash equivalents/short-term investments	1.4	0.5
Trading securities	0.5	0.5
Taxes receivable	–	0.6
Other	0.3	0.2
	2.6	**1.9**
Interest expense		
Loans and receivables	0.4	0.6
Financial liabilities and lease obligations	8.8	8.3
Other provisions	0.1	–
Provisions for pensions	9.6	8.0
Taxes payable	0.1	–
Other	0.2	0.2
	19.2	**17.1**

Interest income and expense relating to financial assets and financial liabilities that are not valued at fair value are as follows:

EUR million	2022	2021
Interest income		
Loans and receivables	0.4	0.1
Cash and cash equivalents/short-term investments	1.4	0.5
	1.8	**0.6**
Interest expense		
Loans and receivables	0.4	0.6
Financial liabilities measured at amortized cost	8.8	8.3
	9.2	**8.9**

19 Income Taxes

Income tax expense

Income tax expense for fiscal years 2022 and 2021 is comprised of:

EUR million	2022	2021
Current income tax		
Current year income tax expense	(56.8)	(34.7)
Income tax expense for prior periods	(11.3)	(26.9)
	(68.1)	**(61.6)**
Deferred income tax		
Gross expenditure from origination and reversal of temporary differences and tax loss carryforwards	2.8	5.0
Income tax expense from changes in tax rates and introduction of new taxes	(0.9)	0.5
Change in usability of tax loss carryforwards	(4.8)	(9.4)
	(2.9)	**(3.9)**
Income tax expense, net	**(71.0)**	**(65.5)**

In fiscal year 2022, G+D was subject to German federal corporate tax at a base rate of 15.0 % for the parent company plus a solidarity surcharge of 5.5 % on federal corporate taxes payable. Hence, the statutory rate consisted of a federal corporate tax rate of 15.83 % and trade tax of 15.67 %, resulting in a combined tax rate of 31.5 %.

Reconciliation between the expected and actual income tax expense

Following is a reconciliation of the expected income tax expense to the actual income tax expense which was recorded. The calculation of the expected income tax expense is based on the multiplication of income before income tax at the German corporate combined statutory rate of 31.5 % and 31.43 % in 2022 and 2021, respectively.

EUR million	2022	2021
Expected income tax expense	(47.8)	(47.4)
Foreign taxation differential	7.5	7.5
Non-deductible expenses	(9.6)	(3.3)
Changes in tax rates	(0.9)	0.5
Tax-free income	0.2	0.2
Additions due to tax risks and tax payments (refunds) for prior years	(11.3)	(5.6)
Changes in tax loss carryforwards	(4.8)	(9.4)
Withholding taxes	(4.4)	(5.6)
Deferred taxes relating to prior periods	–	(2.1)
Other	0.1	(0.3)
Actual income tax expense	**(71.0)**	**(65.5)**

Deferred tax assets and liabilities

The gross values of deferred tax assets and liabilities as of December 31, 2022 and 2021 are attributable to the following balance sheet line items:

EUR million

	Assets		Liabilities		Net	
	Dec 31, 2022	Dec 31, 2021	Dec 31, 2022	Dec 31, 2021	Dec 31, 2022	Dec 31, 2021
Financial assets	2.5	3.7	(0.2)	–	2.3	3.7
Accounts receivable trade and other receivables, net	2.5	0.8	(2.2)	(0.5)	0.3	0.3
Contract assets	6.9	0.3	(39.2)	(10.6)	(32.3)	(10.3)
Inventories, net	58.5	63.5	–	–	58.5	63.5
Other assets	2.2	0.9	(0.3)	(43.1)	1.9	(42.2)
Intangible assets	12.9	14.1	(32.9)	(25.7)	(20.0)	(11.6)
Property, plant and equipment (excluding Right-of-Use)	2.9	1.5	(14.0)	(19.0)	(11.1)	(17.5)
Right-of-Use	–	–	(20.2)	(9.4)	(20.2)	(9.4)
Accounts payable trade and other accounts payable	1.9	4.4	–	–	1.9	4.4
Contract liabilities	1.0	2.2	(30.1)	(0.6)	(29.1)	1.6
Provisions	16.1	22.3	(1.6)	(2.2)	14.5	20.1
Financial liabilities	1.1	0.7	–	–	1.1	0.7
Lease obligations	21.6	17.3	–	–	21.6	17.3
Deposits received/deferred income	0.2	0.1	(0.4)	(0.4)	(0.2)	(0.3)
Pensions and related liabilities	46.4	116.1	–	–	46.4	116.1
Other liabilities	3.9	2.1	(3.0)	(18.3)	0.9	(16.2)
Tax loss carryforwards	25.1	20.0	–	–	25.1	20.0
Deferred tax assets/(liabilities), gross	205.7	270.0	(144.1)	(129.8)	61.6	140.2
Set-off of tax	(117.1)	(114.5)	117.1	114.5	–	–
Deferred tax assets/(liabilities), net	**88.6**	**155.5**	**(27.0)**	**(15.3)**	**61.6**	**140.2**

[1] Changes in consolidation structure contain changes from intangible assets in the amount of EUR –8,3 million.

As of December 31, 2022 and December 31, 2021 net deferred tax assets relating to leases in the amount of EUR 1.4 million and EUR 7.9 million were recorded, respectively.

The changes in deferred tax assets, net included in net income or other comprehensive income for fiscal years 2022 and 2021 are included in the following summary:

EUR million	2022	2021
Deferred tax assets, net as of January 1	**140.2**	**154.6**
Changes affecting net income	(2.8)	(3.9)
Changes not affecting net income		
Changes in consolidation structure	(8.2)	(2.7)
Changes in net deferred tax assets recognized in other comprehensive income resulting from deferred tax assets on actuarial gains and losses, cash flow hedges and foreign currency translations	(67.6)	(7.8)
Deferred tax assets, net as of December 31	**61.6**	**140.2**

	Net Change	Recorded in Income Statement	Changes in consolidation structure[1]/ Recorded in Other Comprehensive Income	Net Change	Recorded in Income Statement	Changes in consolidation structure[1]/ Recorded in Other Comprehensive Income
	2022	**2022**	**2022**	**2021**	**2021**	**2021**
	(1.4)	(0.6)	(0.8)	1.0	1.0	–
	–	–	–	(4.1)	(4.1)	–
	(22.0)	(22.0)	–	(5.4)	(5.2)	(0.2)
	(5.0)	(5.0)	–	(63.4)	(63.6)	0.2
	44.1	44.1	–	(7.7)	(7.7)	–
	(8.4)	(0.1)	(8.3)	(2.5)	0.2	(2.7)
	6.4	6.5	(0.1)	4.5	4.5	–
	(10.8)	(10.8)	–	(1.1)	(1.1)	–
	(2.5)	(2.5)	–	0.6	0.6	–
	(30.7)	(30.7)	–	1.7	1.7	–
	(5.6)	(5.6)	–	1.3	1.3	–
	0.4	0.4	–	0.6	0.6	–
	4.3	4.3	–	(3.7)	(3.8)	0.1
	0.1	0.1	–	(0.5)	(0.5)	–
	(69.7)	(2.9)	(66.8)	(9.4)	(1.4)	(8.0)
	17.1	16.9	0.2	84.8	84.8	–
	5.1	5.1	–	(11.1)	(11.2)	0.1
	(78.6)	(2.8)	(75.8)	(14.4)	(3.9)	(10.5)
	–	–	–	–	–	–
	(78.6)	**(2.8)**	**(75.8)**	**(14.4)**	**(3.9)**	**(10.5)**

Deferred tax assets not recorded in the balance sheet

The amount of deductible timing differences and tax loss carryforwards for which deferred tax assets were not recorded are as follows:

EUR million	2022		2021	
	Gross amount	Tax effect	Gross amount	Tax effect
Deductible temporary differences	4.1	1.1	9.2	3.0
Unused tax losses	165.7	46.0	162.4	43.0
	169.8	**47.1**	**171.6**	**46.0**

The unused tax losses expire as follows:

EUR million	2022		2021	
	Gross amount	Expiration date	Gross amount	Expiration date
Limited	4.5	2027 – 2031	14.3	2022 – 2031
Unlimited	161.2	–	148.1	–

Furthermore, deferred tax assets in the amount of EUR 25.1 million and EUR 20.0 million on tax loss carryforwards in the amount of EUR 85.8 million and EUR 73.2 million were recorded as of December 31, 2022 and 2021, respectively.

The determining factor in recognizing deferred tax assets is the probability of the reversal of the temporary differences which resulted in the recognition of the deferred tax assets and future taxable profit against which the unused tax losses can be offset. This is dependent on future taxable profits arising in those periods in which taxable temporary differences reverse and tax losses carryforwards may be utilized. As of December 31, 2022, significant deferred tax assets were recorded on tax loss carryforwards by the following companies: Giesecke+Devrient GmbH, Munich, EUR 19.4 million, Giesecke+Devrient Mobile Security Sweden AB, Stockholm, EUR 2.5 million and Veridos GmbH, Berlin, EUR 1.1 million. Expected taxable profits based on the forecasts for the next five years are recognized by the respective companies. Based upon the level of historical taxable income and projections of future taxable income, G+D believes that it is not probable that the benefits of deductible timing differences and carryforward tax losses in the amount of EUR 169.8 million and EUR 171.6 million will be realized and therefore has not recognized deferred tax assets for these amounts in 2022 and 2021.

Due to the sustained positive earnings expectations in the G+D tax group in Germany, deferred tax assets in the amount of EUR 19.4 million on tax loss carryforwards and the excess of deferred tax assets in the amount of EUR 32.2 million due temporary differences were recorded in 2022 although a negative tax result was achieved in the fiscal year. As of December 31, 2022, the G+D tax group recorded deferred tax assets in the amount of EUR 51.6 million since the company expects profits as a result of positive business developments.

Income tax on dividends

As of December 31, 2022 and 2021, G+D recorded deferred tax liabilities on cumulative earnings in subsidiaries and investments that are intended for distribution. Furthermore, deferred taxes were recorded on the taxable temporary differences relating to investments in associated companies and joint ventures. As of December 31, 2022 and 2021, the amount of these obligations was EUR 3.1 million and EUR 1.2 million, respectively.

Temporary differences relating to investments in subsidiaries for which deferred tax liabilities were not recorded amounted to EUR 4.3 million and EUR 1.9 million as of December 31, 2022 and 2021, respectively. Deferred tax liabilities were not recognized here, as G+D is able to control the timing of the reversal and the temporary differences will not be reversed in the foreseeable future.

Global minimum tax

To address concerns about uneven profit distribution and tax contributions of large multinational corporations, various agreements have been reached at the global level, including an agreement by over 135 jurisdictions to introduce a global minimum tax rate of 15 %. In December 2021, the Organization for Economic Co-operation and Development (OECD) released a draft legislative framework, followed by detailed guidance released in March 2022, that is expected to be used by individual jurisdictions that signed the agreement to amend their local tax laws. Once changes to the tax laws in any jurisdictions in which the Group operates are enacted or substantively enacted, the Group may be subject to the top-up tax. At the date when the financial statements were authorized for issue, none of the jurisdictions in which the Group operates had enacted or substantively enacted the tax legislation related to the top-up tax. The Group may be potentially subject to the top-up tax because it has a subsidiary in Dubai where the statutory tax rate is 0 %. Giesecke+Devrient is closely monitoring the progress of the legislative process in each jurisdiction the Group operates in. At December 31, 2022, the Group did not have sufficient information to determine the potential quantitative impact.

20 Equity

As of December 31, 2022 and 2021, the nominal value of the treasury stock amounted to EUR 4.3 million, respectively.

Unappropriated reserves amounted to EUR 749.9 million and EUR 565.0 million as of December 31, 2022 and 2021, respectively.

With respect to capital management, the main objective of Giesecke+Devrient is to secure its continuation as well as generate shareholder value, i.e. in the form of dividend payments. As of December 31, 2022 and 2021, the equity ratio amounted to 29.2 % and 24.8 %, respectively. G+D is not subject to external minimum capital requirements.

21 Financial Instruments

The following tables incorporate the carrying amounts and fair values of G+D's financial instruments. The pure exit price is thereby understood as the fair value of a financial instrument. This is the price at which a transaction to sell an asset or to transfer a liability would take place under current market conditions.

The tables do not contain information relating to fair values of financial assets or liabilities that are not valued at fair value if the carrying amount represents a reasonable approximation of the fair value.

Furthermore, the following tables contain an allocation of the fair value measurement of classes of financial assets and liabilities to levels in accordance with IFRS 13 as of December 31, 2022 and 2021:

EUR million		Dec 31, 2022				
	Classification	Carrying amount	Fair value	Level 1	Level 2	Level 3
Financial assets						
Loans and receivables[1]	Amortized cost	523.4	–	–	–	–
Financial assets held for trading[2]						
Derivative financial assets	FVTPL	2.8	2.8	–	2.8	–
Derivative financial assets (interest swap)	FVOCI	2.6	2.6	–	2.6	
Trading securities	FVTPL	86.8	86.8	86.8	–	–
Total		**92.2**				
Investment securities	FVTPL	11.0	11.0	11.0	–	–
Investments in other related parties[3]	FVOCI	12.6	12.6	–	–	12.6
Special classes						
Cash and cash equivalents[4]	Amortized cost	610.0	–	–	–	–
Short-term investments	Amortized cost	0.2	–	–	–	–
Total financial assets		**1,249.4**				

[1] Amount does not include prepayments in the amount of EUR 59.4 million and EUR 49.0 million as of December 31, 2022 and 2021, respectively, as these are not included in the scope of IFRS 7.
[2] Amount does not include cash surrender value of reinsurance in the amount of EUR 20.1 million and EUR 19.8 million as of December 31, 2022 and 2021, respectively, as this is not included in the scope of IFRS 7.
[3] The changes includes only investments in capital.
[4] Cash and cash equivalents include cash in the amount of EUR 0.1 million and EUR 0.1 million, cash in banks in the amount of EUR 595.5 and EUR 390.3 million as well as short-term investments in the amount of EUR 14.4 million and EUR 10.7 million, as of December 31, 2022 and 2021, respectively.

EUR million		Dec 31, 2022				
	Classification	Carrying amount	Fair value	Level 1	Level 2	Level 3
Financial liabilities						
Financial liabilities	Other financial liabilities	549.2	478.7	–	478.7	–
Accounts payable	Amortized cost	383.0	–	–	–	–
Purchase price consideration[1]	Amortized cost	15.7	–	–	–	–
Conditional purchase price consideration[1]	Other financial liabilities	11.0	11.0	–	–	11.0
Total		**958.9**				
Derivative financial liabilities	Fair value – hedging instrument	0.5	0.5	–	0.5	–
Special class						
Lease obligations	N/A	89.7	–	–	–	–
Total financial liabilities		**1,049.1**				

[1] Purchase price considerations as of December 31, 2022 in the amount of EUR 15.7 million is reported under other current liabilities.
Conditional purchase price consideration as of December 31, 2022 in the amount of EUR 11.0 million is reported under other non-current liabilities. (refer to Note 24 “Business Combinations”).

					Dec 31, 2021
	Carrying amount	Fair value	Level 1	Level 2	Level 3
	426.8	–	–	–	–
	0.2	0.2	–	0.2	–
	–	–	–	–	–
	74.8	74.8	74.8	–	–
	75.0				
	32.3	32.3	32.3	–	–
	10.8	10.8	–	–	10.8
	401.1	–	–	–	–
	51.6	–	–	–	–
	997.6				

					Dec 31, 2021
	Carrying amount	Fair value	Level 1	Level 2	Level 3
	351.1	353.4	–	353.4	–
	323.0	–	–	–	–
	–	–	–	–	–
	–	–	–	–	–
	674.1				
	0.7	0.7	–	0.7	–
	72.4	–	–	–	–
	747.2				

In the tables, financial instruments measured at fair value are allocated to levels in accordance with IFRS 7, "Financial Instruments: Disclosures". Thereby, the fair value measurement of a financial instrument is allocated in its entirety to the level for which inputs are material to determine its fair value. At level 1, fair values are mainly determined by using quoted prices from active markets for identical financial assets or liabilities. The fair values at level 2 are determined via market comparison procedures based on observable quoted prices for similar financial assets or liabilities. The discounted cash flow model is used here, in which the future cash flows are discounted with a risk-adjusted interest rate. Fair value measurements at level 3 are mainly based on unobservable market data. In 2022, Giesecke+Devrient determined fair values of financial instruments based at level 1, level 2 and level 3. In 2022 and 2021, no material reclassifications between the levels were recorded.

The fair value of foreign currency forward contracts is based on mark-to-market since similar contracts are being traded on active markets. As of December 31, 2022 and 2021, these derivative financial instruments are stated at fair value and recorded on the balance sheet under current financial assets in the amount of EUR 2.8 million and EUR 0.2 million and under current financial liabilities in the amount of EUR 0.5 million and EUR 0.7 million, respectively.

The nominal volume of foreign currency forward contracts entered into by Giesecke+Devrient as of December 31, 2022 amounted to:

in million foreign currency units	Purchase contracts	Sales contracts
US dollar	–	137.2
Australian dollar	–	9.0
Brazilian real	–	39.0
British pound	–	6.0
Chinese renminbi	–	205.0
Indian rupee	–	1,000.0
Canadian dollar	–	5.0
Hong Kong dollar	–	31.0
South African rand	–	140.0
Swiss franc	25.0	–

Prior Year 2021

in million foreign currency units	Purchase contracts	Sales contracts
US dollar	25.6	85.8
Australian dollar	–	9.5
Brazilian real	–	25.0
British pound	–	3.0
Chinese renminbi	–	200.0
Indian rupee	–	200.0
Canadian dollar	16.5	–
South African rand	–	135.0

Financial instruments not valued at fair value

Cash and cash equivalents, short-term investments, as well as the current portion of accounts receivable, other assets, loans, trade accounts payable and other accounts payable, and other liabilities.
The carrying amounts of these financial instruments are considered to approximate fair value because of the relatively short period of time between origination and their expected realization.

Financial instruments valued at fair value

The fair values of non-derivative financial instruments for the individual classes are as follows:

Marketable securities
Debt and equity securities are carried at fair value, which is based on quoted market prices at the balance sheet date.

Investments
If the fair value cannot be readily determined, acquisition cost are used as the best estimate of the fair value.

Non-current financial assets and financial liabilities
The fair value is determined based on the expected future cash flows discounted using the prevailing market rate as of the balance sheet date for similar maturities and contracts.

As of December 31, 2022 and 2021, there were no significant differences between the fair values and the carrying values of non-current financial assets.

Impairment losses and reversals of impairment losses during fiscal years 2022 and 2021 related solely to financial assets in the class “loans and receivables”.

EUR million	2022	2021
Impairment losses	(26.6)	(26.7)
Reversals of impairment losses	5.0	4.6
	(21.6)	**(22.1)**

Net gains and losses from financial assets and liabilities by measurement category amounted to:

EUR million	2022	2021
Financial assets measured at amortized cost	(31.1)	(19.0)
Financial assets and financial liabilities held for trading, at fair value through profit or loss	(4.0)	(10.7)
Financial assets held for trading, at fair value through other comprehensive income	2.6	2.1
Financial liabilities measured at amortized cost	(0.3)	(3.1)
	(32.8)	**(30.7)**

Net gains and losses on loans and receivables consist of results from impairments, reversals of impairments and foreign currency exchange effects.

Net gains and losses on financial assets and liabilities measured at fair value through profit and loss contain results from changes in fair market values and adjustments on settlement of these financial instruments.

Net gains and losses on financial assets and liabilities measured at fair value through other comprehensive income contain changes in fair market values of these financial instruments.

Net gains and losses from financial liabilities measured at amortized cost comprise foreign currency exchange effects.

22 Financial Risk

Due to the global scope of its operations, the Group is exposed to a variety of financial risks, notably counterparty default risks, liquidity risks as well as market price risks through fluctuations of exchange rates, interest rates and securities. Risks on the procurement side arise from the increase in purchase prices. The financial situation as well as the Group's profitability may be adversely affected by these risks. Giesecke+Devrient manages these risks predominantly within its current business and finance activities as well as based on specific written guidelines. The aim of the financial risk management is the transparency of the risks for the Group and their limitation by suitable countermeasures.

All of the above risks are monitored by risk management procedures. Financial risks are part of the monthly risk reporting for management as well as part of the regular reports to the Supervisory and Advisory Boards.

Counterparty Default Risk

The counterparty default risk is the risk of financial losses in the event that a customer or a contracting partner of a financial instrument fails to meet its contractual obligations. The risk of default generally refers to cash and cash equivalents, trade receivables, contract assets as well as to debt instruments held as financial assets by the Group.

The Group's exposure to counterparty default risk is determined mainly by the individual characteristics of each customer. Giesecke+Devrient handles the risk of default by using an internal evaluation method relating to the solvency of the customer. Factors which are taken into account include those risks of default which may influence the customer base such as country default risk and regions in which the customer operates. Based on the determined internal rating, a classification is undertaken in credit rating categories A to C. Doubtful positions are strictly limited and agreed payment terms are closely monitored. Where customer creditworthiness is an issue, measures to secure payment, such as confirmed and unconfirmed letters of credit, are – wherever possible - requested to minimize the credit risk. To fulfill reporting requirements in accordance with IFRS 9, the maximum exposure to credit risk with regard to financial assets corresponds with the carrying value of these financial assets.

With regard to the exposure of counterparty risks in the financial sector, Giesecke+Devrient ensures that the investment volume is spread widely in order to reduce default risks and excessive dependence on individual financial institutions. The banks with which Giesecke+Devrient conducts financial transactions are selected and regularly reviewed according to various criteria, particularly with regard to creditworthiness.

Liquidity Risk

Liquidity risk is the risk that the Group is potentially unable to fulfill its external financial obligations as contractually agreed in delivering cash or other financial assets. The objective of the Group liquidity management is to ensure, as far as possible, that sufficient liquidity is available to meet its liabilities whenever due under both normal and strained conditions without incurring unacceptable expenses or damaging the Group's reputation.

Securing liquidity therefore has the highest priority and is managed by holding a disposable liquidity reserve appropriate to the size of the company. This means maintaining sufficient cash and unused credit lines with banks. Additionally, appropriate financial instruments such as annual planning for all Group companies and short-term liquidity planning for all major Group companies are used. These planning instruments are complemented by a contractually agreed centralized cash management agreement in which all the main German and foreign Group companies participate.

In addition to sufficient cash deposits, the Group held cash credit lines of EUR 365.5 million (prior year EUR 330.9 million) as of December 31, 2022 to ensure adequate liquidity to cover fluctuations in operating activities. The principal part thereof is a long-term credit line of EUR 280.0 million provided by a consortium to Giesecke+Devrient GmbH running until October 2026. All lenders are banks with an investment grade. As of December 31, 2022, EUR 0.0 million of the total available credit line were drawn (previous year EUR 0.5 million).

In addition, loans incl. accrued interest and excluding charges amounted to EUR 552.2 million (previous year EUR 350.7 million). These consisted of EUR 120.0 million in syndicated loans, EUR 44.5 million in loans from the European Investment Bank EIB and EUR 300.0 million promissory note loans. The remaining amount includes loans from other third parties (including Bundesdruckerei, G+D Stiftung, G+D Stiftung Geldscheinsammlung, KfW development loan in favor of Veridos) as well as local loans for subsidiaries.

The following tables show the carrying amounts of all G+D Group liabilities (from financing, trade payables and leasing) with the contractually agreed (undiscounted) interest and redemption payments, as well as derivative financial instruments with negative fair values:

Information on Liquidity Risk as of December 31, 2022

EUR million					Up to 1 year		1–2 years		2–3 years		3–4 years		4–5 years		over 5 years	
	Nominal value	Effects from effective interest method	Carrying value	Gross out-flows	Repay-ment	Inter-est	Repay-ment	Inter-est	Repay-ment	Inter-est	Repay-ment	Inter-est	Repay-ment	Inter-est	Repay-ment	Inter-est
Original financial liabilities																
Accounts payable trade and other liabilities			383.0	383.0	383.0											
Financial liabilities	552.2	3.0	549.2	592.6	111.2	12.9	18.1	10.6	131.7	10.3	154.5	6.7	65.0	3.6	66.9	1.1
Other liabilities	26.7	–	26.7	26.7	15.7		11.0									
Lease obligations			89.7	93.7	22.9	1.2	19.6	1.0	15.5	0.7	11.4	0.5	8.5	0.3	11.8	0.3
Derivative financial liablities																
Derivative financial instruments			0.5	(84.1)	(84.1)											
(gross inflow derivates)				83.6	83.6											
Total			**1,049.1**	**1,095.5**	**532.3**	**14.1**	**48.7**	**11.6**	**147.2**	**11.0**	**165.9**	**7.2**	**73.5**	**3.9**	**78.7**	**1.4**

Information on Liquidity Risk as of December 31, 2021

EUR million					Up to 1 year		1–2 years		2–3 years		3–4 years		4–5 years		over 5 years	
	Nominal value	Effects from effective interest method	Carrying value	Gross out-flows	Repay-ment	Inter-est	Repay-ment	Inter-est	Repay-ment	Inter-est	Repay-ment	Inter-est	Repay-ment	Inter-est	Repay-ment	Inter-est
Primary financial liabilities																
Accounts payable trade and other liabilities			323.0	323.0	323.0											
Financial liabilities	351.1	–	351.1	370.4	20.3	4.7	87.3	4.5	18.0	3.7	104.2	3.4	43.1	2.0	76.8	2.4
Lease obligations	–		72.4	75.3	19.0	1.0	17.0	0.7	12.9	0.4	8.0	0.3	4.7	0.2	10.8	0.3
Derivative financial liabilities																
Derivative financial instruments			0.7	(84.8)	(84.8)											
(gross inflow dervatives)				84.8	84.8											
Total			**747.2**	**768.7**	**362.3**	**5.7**	**104.3**	**5.2**	**30.9**	**4.1**	**112.2**	**3.7**	**47.8**	**2.2**	**87.6**	**2.7**

All financial instruments held as of December 31, 2022 and December 31, 2021 for which payments were already contractually agreed have been included. Plan figures for future liabilities were not included. Amounts in foreign currencies were translated at the respective closing rate. Variable interest payments from financial instruments were determined by applying the last fixed interest rates before December 31, 2022 or December 31, 2021, respectively and can change with market interest rates. Financial liabilities that are repayable at any time are always assigned to the earliest time period.

The available cash liquidity is held in bank accounts. The aim was to avoid negative interest charges. For this reason, time deposits and deposits at notice were made with the core banks. The decision on the investment period was based on short-term liquidity planning. There were no deposits at notice as of December 31, 2022 (previous year EUR 50.0 million). In addition, cash investments with a term of more than three months in the amount of EUR 0.3 million (previous year EUR 1.6 million) were held by foreign subsidiaries.

Market Risk

Market risk is the risk that market prices such as exchange rates, interest rates or stock prices change, and thereby affect the Group's earnings or the value of the financial instruments held.

A Currency Risk

Due to its international focus, Giesecke+Devrient has both import and export deliveries and payment flows in various currencies. Currency risks arise from future transactions including both purchasing and selling activities. Recognized assets and liabilities as well as highly probable forecasted cashflows in foreign currency are considered. Furthermore, risk exposure occurs due to financing in foreign currency.

Risk exposure can occur at the level of Giesecke+Devrient GmbH as well as on the subsidiary level. For risk control reasons, these currency exposures can be concentrated at group level to Giesecke+Devrient GmbH by using internal foreign currency transactions with corresponding subsidiaries.

The objective of the hedging strategy is to reduce risks from exchange rate fluctuations. Apart from the ongoing endeavor to avoid currency risk or to mitigate the effects naturally, forward exchange contracts, options and swaps with financial institutions with high credit ratings are used to hedge group-wide currency exposures.

Forward exchange contracts as well as options are used exclusively for hedging and not for speculative purposes. In accordance with the risk management standards applicable to international banks, all trading activities are subject to financial controls (back office) that are independent from corporate finance.

Currency risks, which are solely driven by the consolidation effects in the balance sheet and profit and loss statements of foreign subsidiaries (translation risks) are generally not hedged against exchange rate fluctuations.

Giesecke+Devrient uses a multi-level process for its currency hedging:

1. In the hedging of recognized assets and liabilities (economic exposure), the net position for each foreign currency (reporting date) is ideally statically secured to 100 %. It applies to all currencies and includes outstanding trade receivables, outstanding trade payables as well as intercompany loans issued to subsidiaries.

2. In the hedging of forecasted transactions (from major projects) on unrecorded risks, hedging is performed on a case-by-case basis and, if possible, hedge accounting is applied (according to IAS 39).

3. In hedging forecasted transactions (from other projects) the remaining exposure relating to currencies such as USD and RMB is hedged in phases based on a 12 months net position. The economic exposure of the self-contained portion of a natural hedge can also be temporally hedged.

The following table shows expected intercompany and third party receivables and payables in foreign currency as well as financial derivatives entered into for hedging purposes (net exposure or nominal value of financial derivatives > EUR 5.0 million), as of December 31, 2022:

Net Currency Exposure as of December 31, 2022

Foreign currency risk in EUR million		AUD		BRL		CAD		CHF
	2022	2021	2022	2021	2022	2021	2022	2021
Hedging of booked transactions								
Net exposure	8.0	7.4	6.0	4.1	6.8	(18.0)	0.8	0.6
Firm Comittment	–	–	–	–		–		–
Financial derivatives	(5.7)	(6.0)	(6.9)	(3.8)	(3.5)	11.4	–	–
Hedging of expected transactions (Cash Flow Hedge)								
Financial derivatives (FX Forwards)	–	–	–	–	–	–	–	–
Hedging of expected transactions (other projects)								
Financial derivatives (FX Forwards)	–	–	–	–	–	–	25.5	–
Financial derivatives (FX Options)	–	–	–	–	–	–	–	–
Net exposure Netting								
Financial derivatives (FX Forwards)	–	–	–	–	–	–	–	–

Net Currency Exposure as of December 31, 2022

Foreign currency risk in EUR million		GBP		HKD		INR		RMB
	2022	2021	2022	2021	2022	2021	2022	2021
Hedging of booked transactions								
Net exposure	7.9	5.2	0.9	–	12.2	5.0	28.5	40.4
Firm Comittment	–	–	–	–	–	–	–	–
Financial derivatives	(6.8)	(3.5)	–	–	(11.3)	(2.3)	(27.9)	(27.6)
Hedging of expected transactions (Cash Flow Hedge)								
Financial derivatives (FX Forwards)	–	–	–	–	–	–	–	–
Hedging of expected transactions (other projects)								
Financial derivatives (FX Forwards)	–	–	(4.0)	–	(7.9)	–	–	–
Financial derivatives (FX Options)	–	–	–	–	–	–	–	–
Net exposure Netting								
Financial derivatives (FX Forwards)	–	–	–	–	–	–	–	–

Net Currency Exposure as of December 31, 2022

Foreign currency risk in EUR million		SEK		USD		ZAR
	2022	2021	2022	2021	2022	2021
Hedging of booked transactions						
Net exposure	(5.0)	(3.6)	82.1	13.3	11.8	11.5
Firm Comittment	–	–	–	–	–	–
Financial derivatives	3.3	–	(120.0)	0.9	(7.7)	(7.5)
Hedging of expected transactions (Cash Flow Hedge)						
Financial derivatives (FX Forwards)	–	–	–	(3.7)	–	–
Hedging of expected transactions (other projects)						
Financial derivatives (FX Forwards)	–	–	(8.7)	(50.2)	–	–
Financial derivatives (FX Options)	–	–	–	(4.0)	–	–
Net exposure Netting						
Financial derivatives (FX Forwards)	–	–	–	–	–	–

AUD = Australian Dollar, BRL = Brasilian Real, CAD = Canadian Dollar, CHF = Swiss Franc, GBP = British Pound, HKD = Hong Kong Dollar, INR = Indian Rupie, RMB = Chinese Renminbi, SEK = Swedish Krona, USD = US-Dollar, ZAR = South African Rand

The valuation effects of the net exposures as of the balance sheet date influence the consolidated income statement.

Sensitivity analyses are used to determine the effects of hypothetical changes of the respective risk variable and their effects on the profits/losses and on the equity of the company as of the balance sheet date. Only major foreign currencies are considered.

The following shows the impacts of primary and derivative financial instruments exceeding EUR 2.0 million on equity as well as the profit and loss statement (without consideration of tax effects), assuming that the EUR had risen or fallen by 10.0 % against the specified foreign currencies as of December 31, 2022 and December 31, 2021, respectively:

Primary Financial Instruments as of December 31, 2022 (Impact > EUR 2.0 million)

Impact in EUR million

				Equity				Profit/Loss
		2022		2021		2022		2021
	−10.0 %	+10.0 %	−10.0 %	+10.0 %	−10.0 %	+10.0 %	−10.0 %	+10.0 %
RMB	–	–	–	–	2.8	(2.8)	4.2	(4.2)
USD	–	–	–	–	8.2	(8.2)	1.3	(1.3)

Derivative Financial Instruments as of December 31, 2022 (Impact > EUR 2.0 million)

Impact in EUR million

				Equity				Profit/Loss
		2022		2021		2022		2021
	−10.0 %	+10.0 %	−10.0 %	+10.0 %	−10.0 %	+10.0 %	−10.0 %	+10.0 %
CHF	–	–	–	–	(2.8)	2.3	–	–
RMB	–	–	–	–	(3.1)	2.5	(3.1)	2.5
USD	–	–	(0.4)	0.3	(14.3)	11.7	(5.6)	4.5

Global netting agreement and similar agreements

The Group enters into derivative contracts in accordance with the German Master Agreement (GMA). In certain cases – for example, if a payment default occurs – all outstanding transactions are terminated under this agreement, the value determined, and only the net amount is paid.

The German Master Agreement (GMA) does not fulfill the netting criteria for the balance sheet due to the fact that the Group currently has no legal right to net the recorded amounts. Only on future events such as a delay on bank loans or other credit events a legal right to net is enforceable.

The following chart reflects the carrying amount of financial instruments which are included in the described agreements.

December 31, 2022

EUR million	Gross amounts of financial instruments in the statement of financial position	Related financial instruments that are not offset	Net amount
Financial assets			
Other investments, including derivatives			
Forward exchange contracts used for hedging	1.1	(0.4)	0.7
Other forward exchange contracts	–	–	–
Interest rate derivatives	2.6	–	2.6
Sum of financial assets	**3.8**	**(0.4)**	**3.3**
Financial liabilities			
Trade and other payables	(0.4)	0.4	–
Forward exchange contracts used for hedging	–	–	–
Other forward exchange contracts	–	–	–
Interest rate derivatives	–	–	–
Sum of financial liabilties	**(0.4)**	**0.4**	**–**

December 31, 2021

EUR million	Gross amounts of financial instruments in the statement of financial position	Related financial instruments that are not offset	Net amount
Financial assets			
Other investments, including derivatives			
Forward exchange contracts used for hedging	0.2	(0.2)	–
Other forward exchange contracts	–	–	–
Interest rate derivatives	–	–	–
Sum of financial assets	**0.2**	**(0.2)**	**–**
Financial liabilities			
Trade and other payables	(0.7)	0.2	(0.5)
Forward exchange contracts used for hedging	–	–	–
Other forward exchange contracts	–	–	–
Interest rate derivatives	–	–	–
Sum of financial liabilties	**(0.7)**	**0.2**	**(0.5)**

Hedging of major projects applying "Cash Flow Hedge Accounting" (CFH)

As a matter of principle, contracts with a volume of > EUR 8.0 million are hedged via a forward exchange contract and checked whether they can be accounted for using cash flow hedge accounting.

As such, fluctuations in valuations of the derivatives can be avoided in the equity due to proportionate accounting of these individual transactions.

The Group designates the spot element of forward foreign exchange contracts to hedge its currency risk and applies a hedge ratio of 1:1. The forward elements of forward exchange contracts are excluded from the designation of the hedging instrument and are separately accounted for as cost of hedging in the financial result in the same way as for standalone derivatives. The Group's policy is to align the critical terms of the forward exchange contracts with the hedged item.

There are strict requirements in order to apply cash flow hedge accounting. These are checked on initiation of the project as well as on an ongoing basis. If the criteria during the term of validity are no longer met, the cash flow hedge accounting is terminated and the effects are subsequently reported in the profit and loss statement. The economic hedge remains in force.

Within the framework of an effectiveness test the Group determines the existence of an economic relationship between the hedging instrument and hedged item based on the currency, amount and timing of their respective cash flows (critical terms match). The Group assesses whether the derivative designated in each hedging relationship has been effective in offsetting changes in cash flows of the hedged item using the hypothetical derivative method.

In these hedging relationships, ineffectiveness can arise from:
- the effect of the counterparties' and the Group's own credit risk on the fair value of the forward foreign exchange contracts which is not reflected in the change in the fair value of the hedged cash flows attributable to the change in exchange rates; and
- to a greater extent changes in the value of the hedged transactions.

Hedging of the cash flows using Cash Flow Hedge Accounting

No new hedges were entered into in 2022 using cash flow hedge accounting. All hedges in place at the beginning of 2022 expired during the year.

As of December 31, 2022 and December 31, 2021 respectively, the Group maintained the following instruments to hedge foreign exchange fluctuations:

2022

	Maturity	
	< 1 year	> 1 year
Foreign currency risk		
Forward exchange contracts		
Net exposure (in millions of euro)	–	–
Average EUR/USD forward contract rate	–	–

2021

	Maturity	
	< 1 year	> 1 year
Foreign currency risk		
Forward exchange contracts		
Net exposure (in millions of euro)	3.7	–
Average EUR/USD forward contract rate	1.1848	–

As of December 31, 2022 and December 2021 respectively the amounts related to positions designated to the hedged underlying transactions are following:

Dec 31, 2022

EUR million	Change in value used for calculating hedge ineffectiveness	Cash flow hedge reserve	Balances remaining in the cashflow hedge reserve from hedging relationships for which hedge accounting is no longer applied
Foreign currency risk			
Sales (receivables)	0.3	–	–
Purchases (liabilities)	–	–	–

Dec 31, 2021

EUR million	Change in value used for calculating hedge ineffectiveness	Cash flow hedge reserve	Balances remaining in the cashflow hedge reserve from hedging relationships for which hedge accounting is no longer applied
Foreign currency risk			
Sales (receivables)	(2.8)	(0.3)	(0.1)
Purchases (liabilities)	–	–	–

Amounts referring to designated hedging instruments and their inefficiencies in relation to the hedging relationship are as follows:

2022

EUR million	Nominal amount	Carrying amount: Assets	Carrying amount: Liabilities	Balance sheet account in which hedging instrument included	Changes in the value of the hedging instrument recognised in OCI	Amount reclassified from hedging reserve to profit or loss	Profit and loss account which is affected by the reclassification
Foreign currency risk							
Forward exchange contracts – sales (receivables)	–	–	–	Other investments and other payables (liabilities)	(0.3)	(0.4)	Revenue
Forward exchange contracts - purchases (liabilities)	–	–	–	–	–	–	–

2021

EUR million	Nominal amount	Carrying amount: Assets	Carrying amount: Liabilities	Balance sheet account in which hedging instrument included	Changes in the value of the hedging instrument recognised in OCI	Amount reclassified from hedging reserve to profit or loss	Profit and loss account which is affected by the reclassification
Foreign currency risk							
Forward exchange contracts - sales (receivables)	3.7	–	0.1	Other investments and other payables (liabilities)	2.5	0.3	Revenue
Forward exchange contracts – purchases (liabilities)	–	–	–	–	–	–	–

The following table contains a reconciliation of the equity component risk categories and the analysis of the positions reported in other comprehensive income after tax, resulting from the reporting of cash flow hedges:

2022

EUR million	**Hedging reserve**
Balance at January 1, 2022	(0.3)
Cashflow hedges	
Foreign currency risk - inventory purchases	–
Foreign currency risk - other items	0.3
Amount reclassidied to profitor loss:	
Foreign currency risk - other items	(0.3)
Balance at December 31, 2022	**–**

2021

EUR million	Hedging reserve
Balance at January 1, 2021	2.5
Cashflow hedges	
Foreign currency risk – inventory purchases	–
Foreign currency risk – other items	(2.5)
Amount reclassidied to profitor loss:	
Foreign currency risk – other items	(0.3)
Balance at December 31, 2021	**(0.3)**

B Interest Rate Risk

Giesecke+Devrient's interest rate risks mainly arise from bank loans and the promissory note loans with their respective fixed interest rates until maturity.

Financial instruments with variable interest rates are subject to cash flow risks which consist of uncertainty regarding the amount of future interest payments. This risk also exists for financial instruments with fixed interest rates when they are due to be reinvested or refinanced.

As of December 31, 2022, the values were as follows:

Interest rate risk financial instruments as of December 31, 2022

EUR million	Average rate of interest		Total amount		Up to 1 year		1–2 years		2–5 years		Over 5 years	
	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021
Fixed-interest financial instruments												
Financial liabilities (current and non-current)	2.2	1.4	494.7	327.1	107.5	18.4	29.0	67.5	291.3	164.2	66.9	77.0
Lease obligations	1.4	1.9	89.7	72.4	22.8	19.0	19.6	17.0	35.5	25.6	11.8	10.8
Variable-interest financial instruments												
Financial liabilities	1.8	0.7	79.4	22.7	19.4	1.8	0.1	19.8	59.9	1.1	–	–

Interest rate risk financial instruments as of December 31, 2021

EUR million	Average rate of interest		Total amount		Up to 1 year		1–2 years		2–5 years		Over 5 years	
	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020
Fixed-interest financial instruments												
Financial liabilities (current and non-current)	1.4	1.4	327.1	338.9	18.4	12.1	67.5	15.0	164.2	192.7	77.0	119.1
Lease obligations	1.9	2.1	72.4	82.4	19.0	19.9	17.0	16.0	25.6	32.4	10.8	14.1
Variable-interest financial instruments												
Financial liabilities	0.7	1.4	22.7	148.6	1.8	6.8	19.8	121.2	1.1	19.6	–	1.0

There were no interest rate derivatives in 2021. New interest rate derivatives were concluded for the first time again in the course of 2022 for a volume of EUR 60.0 million to hedge part of the variable interest loan provided by a banking syndicate. The interest rate swaps have a floating leg based on the 3-month Euribor. A hedging relationship was designated between the loan and the interest rate swap and this was accounted for in the form of a cash flow hedge.

An interest rate risk sensitivity analysis shows the effect of a 100 basis point (one percentage point) change in market interest rates on the income statement (excluding tax effects) and on equity (excluding tax effects). It is assumed that all other variables remain constant. However, as part of the sensitivity analysis required by IFRS 7, only the impact on net income and equity is considered and not the impact on future cash flows. Therefore, accrued interest payments carried as a liability are recalculated using the hypothetical market interest rate applicable at the reporting date.

The measurement of the interest rate swap designated in cash flow hedge accounting would result in an increase or decrease in equity of EUR 2.1 million (2021: EUR 0.0 million) or EUR –2.1 million as of December 31, 2022 (2021: EUR 0.0 million).

The existing cash liquidity is invested in overnight money and time deposits. The decision on the investment period is made on the basis of liquidity planning, partly in short-term investments with terms of < three months (liquid funds) and partly in investments with terms of > three months (current financial assets). With all investments, the security of the counterparty and the lowest possible price risk are paramount. The cash and cash equivalents item is not considered here.

C Special Investment Fund

In addition to money deposited directly at banks, assets as of December 31, 2022 of EUR 98.1 million (previous year EUR 84.4 million) are managed by a well-known German asset management company in a special investment fund. In 2022, a second segment was opened under the umbrella of the special investment fund, which is managed separately by a second asset manager. The investments consists of two portfolios of first-grade bonds (government bonds, corporate bonds and fixed income bonds) investment funds and equities (first-grade companies), as well as commodities and cash.

The risk of this investment is determined monthly using the Value-at-Risk (VaR) indicator. The Value-at-Risk indicates the loss amount that will not be exceeded in a period of ten days with a probability of 99.0 %.

The following values arise for the special investment fund as of December 31, 2022 (VaR and assets):

Segment 1

EUR million	2022
Marketvalue fund (incl. derivatives)	78.6
99 % VaR	2.5
Assets	
Equities incl. equityfunds	34.1
Bonds incl. bondfunds	31.2
Derivatives	0.3
Commodityfunds	6.3
Cash	6.6
Other Assets	0.1

Segment 2

EUR million	2022
Marketvalue fund (incl. derivatives)	19.5
99 % VaR	0.7
Assets	
Equities incl. equityfunds	5.4
Bonds incl. bondfunds	6.0
Derivatives	3.6
Commodityfunds	–
Cash	4.5
Other Assets	–

The following values arise for the special investment fund as of December 31, 2021 (VaR and assets):

Segment 1

EUR million	2021
Marketvalue fund (incl. derivatives)	84.4
99 % VaR	2.4
Assets	
Equities incl. equityfunds	41.5
Bonds incl. bondfunds	26.5
Derivatives	(0.1)
Commodityfunds	6.8
Cash	9.7
Other Assets	–

Segment 2

EUR million	2021
Marketvalue fund (incl. derivatives)	–
99 % VaR	–
Assets	
Equities incl. equityfunds	–
Bonds incl. bondfunds	–
Derivatives	–
Commodityfunds	–
Cash	–
Other Assets	–

In addition to the special investment fund, Giesecke+Devrient holds securities that are classified as available-for-sale securities. The market value of the short-term investments as of December 31, 2022 was EUR 9.1 million (previous year EUR 30.5 million), the market value of the long-term investments as of December 31, 2022 was EUR 1.9 million (previous year 1.8 million euros). This includes, in particular, investments in investment funds that serve to secure pension and semi-retirement obligations against insolvency. Due to minor fluctuations in the value of these shares, no sensitivity analysis is performed. G+D has not identified any concentration of risk as defined in IFRS 7.34.

The information in this section is disclosed in accordance with IFRS 7, Financial Instruments: Disclosures.

23 Contract balances

Descriptions of significant changes in contract assets and contract liabilities:

EUR million	2022	2021
Contract assets at the beginning of the period	**269.2**	**236.6**
Currency differences	1.4	6.0
Transfers from contract assets to accounts receivable trade at the beginning of the year	(250.4)	(191.5)
Impairment losses on contract assets	(0.6)	(1.5)
Changes in the measure of progress	182.2	219.9
Changes in consolidation structure	–	(0.3)
Contract assets at the end of the period	**201.8**	**269.2**
Contract liabilities at the beginning of period	**213.0**	**235.1**
Currency differences	0.9	4.5
Revenue recognized that was included in the contract liability balance at the beginning of the period	(176.7)	(199.3)
Prepayments received excluding revenue during the period	245.3	171.7
Changes in consolidation structure	–	1.0
Other changes	(0.1)	–
Contract liabilities at the end of the period	**282.4**	**213.0**

The Group does not make use of the exemption option of IFRS 15.121. The transaction prices reported in accordance with IFRS 15.120 were not reduced by components that represent consideration from customer contracts.

24 Business Combinations

G+D recognizes the results of operations of the acquired business starting from the date of acquisition for business combinations. The net assets acquired are recorded at fair value at the date of acquisition. The excess of the purchase price over the fair value of tangible and identifiable intangible net assets acquired is recorded as goodwill in the accompanying consolidated balance sheet. In addition, gains and losses on disposals or liquidations are recorded on the exit date of the affiliated company.

In March 2018, Veridos acquired shares in the company E-SEEK Inc., San Diego/USA. The acquisition date was March 27, 2018. Initially, Veridos acquired 75.0 % of the shares at a purchase price of EUR 6.4 million. In addition, the parties agreed on conditional consideration for a maximum amount of USD 1.5 million for a period of two years. The conditional consideration was dependent on the achievement of certain key figures (net sales, gross profit). Veridos maintained a call option and the non-controlling shareholders had a put option for the remaining 25.0 % of the shares. G+D had a call option and the shareholder had a put option for the remaining 25.0 % shares in E-SEEK. In accordance with the anticipated acquisition method, the present value of the exercise price was recorded as a financial liability and represented part of the consideration. As of April 1, 2021, G+D exercised the call option for a price of EUR 1.6 million and as a result derecognized the financial liability. As G+D holds 60.0 % in the shares of Veridos, G+D in turn holds 60.0 % in the shares of E-SEEK Inc. Thus, G+D assumed control over E-SEEK Inc. in 2018 and since then consolidated the company in full.

E-SEEK Inc. develops and markets high definition verification devices for ID cards and driver's licenses. The portfolio of products of E-SEEK Inc. represents an excellent enrichment for the business sector Veridos in the field of verification solutions. Veridos thereby offers customers complete solutions which allows for an efficient identification of citizens. These are in place for instance for border control systems, for example at airports. Reading devices developed and marketed by E-SEEK Inc. are a significant component of the solution in connection with the documents and background systems developed by Veridos. Moreover, the business combination broadens the presence of Veridos in the North American market directly which is considered to be of strategic importance due to the high market volume.

On February 12, 2021 G+D sold 3.8 % of the shares held in secunet Security Networks AG, Essen for a purchase price of EUR 71.0 million. This amount less the apportionable taxes in the amount of EUR 1.1 million as well as the effects from the changes of the corresponding shares were directly recorded in equity (see statement of shareholder's equity). G+D still holds 75.5 % in the shares in secunet Security Networks AG and thus retains control.

Effective May 7, 2021 (time of acquisition) secunet acquired 100% in the shares in stashcat GmbH, Hanover, a German provider of secure communication and collaboration. With the takeover, secunet Security Networks AG is expanding its portfolio in secure and flexible communication and collaboration for companies, administration and security authorities. The consideration transferred for the shares in stashcat GmbH amounted to EUR 10.0 million and was paid in cash. As G+D holds 75.5 % in the shares of secunet, G+D in turn holds 75.5 % in the shares of stashcat GmbH. Thus, G+D assumed control over stashcat GmbH and consolidates the company in full since May 2021.

The difference between the fair value of the consideration in the amount of EUR 10.0 million and the fair value of the identifiable net assets of stashcat GmbH amounting to EUR 4.3 million at the time of acquisition was recorded as goodwill and amounted to EUR 5.7 million. The goodwill is essentially attributable to the skills of the stashcat workforce and the expected synergies. The goodwill recorded is not deductible for tax purposes.

The identifiable assets acquired and liabilities assumed consist of (in EUR million):

EUR million	
Other assets	0.3
Intangible assets	6.5
Property, plant and equipment	0.2
Deferred tax liabilities	2.1
Other liabilities	0.6

In the period between May 7, 2021 and December 31, 2021, stashcat contributed EUR 1.3 million in net sales and net losses in the amount of EUR 1.0 million to the Group result. If the acquisition had occurred on January 1, 2021, the changes to these values would have been immaterial.

Effective July 7, 2021 Giesecke+Devrient acquired 100% in the shares in the British IoT provider Pod Group and assumed control. Thereby, G+D complements its product and solution portfolio in the field of the secure network accesses for IoT devices as well as the management, billing and protection of data traffic. As a first step, the consideration transferred amounted to EUR 11.9 million and was paid in cash. As a second step, G+D paid an additional amount of EUR 0.8 million nine months after the acquisition date.

The difference between the fair value of the consideration in the amount of EUR 12.7 million and the fair value of the identifiable net assets of the Pod Group amounting to EUR 0.5 million at the time of acquisition was recorded as goodwill and amounted to EUR 12.2 million. The goodwill is essentially attributable to the skills of the Pod Group workforce and the expected synergies. The goodwill recorded is not deductible for tax purposes.

The identifiable assets acquired and liabilities assumed consist of:

EUR million	
Other assets	1.0
Accounts receivable trade and other receivables, net (carrying value = fair value)	1.9
Intangible assets	3.6
Accounts payable trade and other accounts payable	1.1
Financial liabilities	3.4
Deferred tax liabilities	0.9
Other liabilities	0.6

In the period between July 7, 2021 and December 31, 2021, the Pod Group contributed EUR 4.7 million in net sales and net losses in the amount of EUR 0.7 million to the Group result. If the acquisition had occurred on January 1, 2021, the changes to these values would have been immaterial.

As of September 22, 2021, Giesecke+Devrient Currency Technology Switzerland AG, Burgdorf, was liquidated. The company was a holding company. No disposal gain was reported.

Effective May 17, 2022 (time of acquisition) secunet acquired 100 % in the shares in SysEleven GmbH, Berlin, a German provider of hosting and cloud services. The purpose of the acquisition was to provide the customers of secunet with an additional option for a secure cloud infrastructure. The consideration of EUR 61.3 million comprises two components, a cash payment in the amount of EUR 50.3 million as well as a conditional consideration in the amount of EUR 11.0 million. The incidental acquisition costs amounted to EUR 1.5 million and were recorded within general and administrative expenses. The conditional consideration is recorded as other non-current liabilities. The maximum amount of the conditional consideration is EUR 15.0 million and depends on qualitative and quantitative objectives for fiscal years 2022 and 2023. The quantitative objectives are based on the cumulated minimum sales and the EBITDA for fiscal years 2022 and 2023. The qualitative objectives are composed of criteria of operations of SysEleven GmbH. If the objectives are not met, no payment will be due. As G+D holds 75.5 % in the shares of secunet, G+D in turn holds 75.5 % in the shares of SysEleven GmbH. Thus, G+D assumed control over SysEleven GmbH and consolidates the company in full since May 2022.

The difference between the fair value of the consideration in the amount of EUR 61.3 million and the fair value of the identifiable net assets of SysEleven GmbH amounting to EUR 24.0 million at the time of acquisition was recorded as goodwill and amounted to EUR 37.3 million. The goodwill is essentially attributable to the strong market position of SysEleven GmbH in the sector of DSVGO conforming cloud platforms as well as the expansion of the service portfolio and the expected synergies in the public sector that result from the business combination. The goodwill recorded is not deductible for tax purposes.

The identifiable assets acquired and liabilities assumed consist of:

EUR million	
Cash and cash equivalents	1.5
Accounts receivable trade and other receivables, net	1.9
Intangible assets	31.2
Property, plant and equipment	6.5
Accounts payable trade and other accounts payable	2.3
Provisions	0.6
Lease obligations	4.2
Financial liabilities	0.6
Deferred tax liabilities	9.4

In the period between May 17, 2022 and December 31, 2022, SysEleven contributed EUR 8.4 million in net sales and net losses in the amount of EUR 2.1 million to the Group result. If the acquisition had occurred on January 1, 2022, the Group net income in fiscal year 2022 would have amounted to EUR 82.2 million and the Group sales revenues would have amounted to EUR 2,534.8 million.

Effective December 1, 2022, G+D acquired the payment and identity business of VALID USA Inc. and Valid Identity Solutions, LLC in the USA. The consideration of EUR 56.5 million comprises two components, a cash payment in the amount of EUR 40.8 million as well as an additional consideration in the amount of EUR 15.7 million. The additional consideration was recorded in other current liabilities. The incidental acquisition costs in the amount of EUR 2.7 million were recorded within general and administrative expenses. G+D takes over the local production and personalization facilities as well as their employees. Consequently, the transaction was classified as a business combination in accordance with IFRS 3.

Thus, G+D accelerates growth in one of the largest global markets for payment and identity and expands its existing business in regards to drivers' licenses.

The difference between the fair value of the consideration in the amount of EUR 56.5 million and the fair value of the identifiable net assets amounting to EUR 56.5 million at the time of acquisition amounted to EUR 0.0 million.

The identifiable assets acquired and liabilities assumed were determined based on a preliminary purchase price allocation and consist of:

EUR million	
Accounts receivable trade and other receivables, net	26.1
Inventories, net	29.9
Deferred tax assets	3.4
Intangible assets	1.8
Property, plant and equipment	24.3
Accounts payable trade and other accounts payable	12.0
Provisions	1.2
Lease obligations	12.6
Deferred tax liabilities	2.2
Other liabilities	1.0

In the period between December 1, 2022 and December 31, 2022, Valid contributed EUR 13.5 million in net sales and net income in the amount of EUR 1.0 million to the Group result. If the acquisition had occurred on January 1, 2022, the Group net income in fiscal year 2022 would have amounted to EUR 91.2 million and the Group sales revenues would have amounted to EUR 2,675.6 million.

Acquisitions after the balance sheet date

Effective January 16, 2023 Veridos acquired additional 27.0 % of the shares in NetSeT Global Solutions d.o.o., Belgrade at a price of EUR 2.3 million in cash on the basis of a contract from November 24, 2022. Veridos now holds 67.0 % of the shares in this company. The fair value of the net assets as of December 31, 2022 amounted to EUR 3.0 million. As of December 31, 2022, the fair value of 40.0 % of the shares amounts to EUR 3.4 million. As a result of increasing the shares, Veridos expands the global R&D team by about 80 FTE, gains additional control over the R&D activities and IP rights as well as establishes a sales base in the Balkans. As G+D holds 60 % in the shares of Veridos, G+D in turn holds 40.2 % in the shares of NetSeT Global Solutions d.o.o. Thus, G+D assumes control over NetSeT Global Solutions d.o.o. and consolidates the company in full. No further information is available at this time.

On February 10, 2023 G+D acquired an additional 31.5 % of the shares in Netcetera Group AG, Zurich at a price of EUR 56.4 million in cash and thus, holds 61.5 % of the shares in this company. G+D exercised a contractually agreed upon call option for the acquisition of an additional 30.0 % of the shares eleven months in advance in order to support and influence the strategic direction of Netcetera Group via a more efficient control structure. Simultaneously, existing shareholders sold 1.5 % of the shares to G+D by exercising a put option. Thus, G+D assumes control over Netcetera Group AG in 2023 and consolidates the company in full. In October and November 2023, the non-controlling shareholders can exercise an additional put option and as a consequence, sell additional shares to G+D. No further information is available at this time.

25 Disclosures on Material Non-controlling Interests

The disclosures on material non-controlling interests (NCI) are as follows:

EUR million	Giesecke & Devrient Malaysia SDN BHD, Kuala Lumpur		Giesecke & Devrient Kabushiki Kaisha, Tokyo		Veridos Matsoukis S.A. Security Printing, Athens	
	Dec 31, 2022	**Dec 31, 2021**	**Dec 31, 2022**	**Dec 31, 2021**	**Dec 31, 2022**	**Dec 31, 2021**
Capital shares NCI	20.0 %	20.0 %	49.0 %	49.0 %	64.0 %	64.0 %
Voting rights NCI	20.0 %	20.0 %	49.0 %	49.0 %	64.0 %	64.0 %
Profit/(loss) attributable to NCI	1.1	0.5	1.9	2.0	0.9	1.4
Dividend paid to NCI	–	(0.7)	(1.9)	(1.1)	–	–
Share of equity relating to NCI	9.3	8.2	4.4	4.7	8.4	7.5
Assets[1]	54.6	53.1	11.0	12.2	58.1	44.7
thereof cash and cash equivalents[1]	7.1	1.2	6.3	7.9	8.0	2.9
Liabilities[1]	5.8	9.8	4.0	4.6	44.6	32.5
Revenues[1]	40.6	41.6	23.7	24.6	43.7	40.1
Other comprehensive income[1]	–	–	(0.4)	(0.2)	–	–
Comprehensive income[1]	5.4	2.4	3.4	3.9	1.4	1.8

[1] Before elimination of group transactions; aggregated (not proportional)

EUR million	Veridos GmbH, Berlin[2]		secunet Security Networks AG, Essen including subsidiaries	
	Dec 31, 2022	**Dec 31, 2021**	**Dec 31, 2022**	**Dec 31, 2021**
Capital shares NCI	40.0 %	40.0 %	24.5 %	24.5 %
Voting rights NCI	40.0 %	40.0 %	24.5 %	24.5 %
Profit/(loss) attributable to NCI	(8.0)	(5.6)	7.7	10.5
Dividend paid to NCI	–	–	(8.5)	(4.0)
Share of equity relating to NCI	9.1	(3.5)	31.8	32.3
Assets[1]	179.3	171.7	311.8	271.4
thereof cash and cash equivalents[1]	37.5	16.6	21.5	119.5
Liabilities[1]	150.7	160.4	184.0	141.6
Revenues[1]	140.8	153.9	347.2	337.6
Other comprehensive income[1]	6.1	0.9	1.5	0.5
Comprehensive income[1]	(15.7)	(14.3)	32.8	43.5

[1] Before elimination of group transactions; aggregated (not proportional)
[2] The non-controlling shareholders also hold shares in Veridos Canada Ltd., Veridos Brasil Comércio de Smart Cards e Soluções para Identificação Segura e Autenticação Ltda., Veridos México S.A. de C.V., Veridos FZE, Firdaus Al Aman for general Trading, E-SEEK Inc., VERIDOS IDENTITY SOLUTIONS UGANDA SMC LIMITED and VERIDOS TRADING AND SERVICES L.L.C. via Veridos GmbH

The cashflows in material non-controlling interests (NCI) as of December 31, 2022 are as follows:

EUR million	Giesecke & Devrient Malaysia SDN BHD, Kuala Lumpur	Giesecke & Devrient Kabushiki Kaisha, Tokyo	Veridos Matsoukis S.A. Security Printing, Athens	Veridos GmbH, Berlin	secunet Security Networks AG, Essen including subsidiaries
Net cash provided by operating activities	9.8	3.2	–	(3.4)	(3.9)
Net cash used in investing activities	(1.8)	(0.2)	(2.2)	(5.2)	(54.5)
Net cash used in/provided by financing activities	(2.1)	(4.0)	7.2	29.7	(39.6)

26 Related Party Disclosures

Transactions with MC Familiengesellschaft mbH

Since 2012, MC Familiengesellschaft mbH is the Group parent company of Giesecke+Devrient GmbH.

In fiscal year 2020, G+D issued a loan to MC Familiengesellschaft mbH in the amount of EUR 3.5 million with a duration until December 2021, which was fully redeemed in September 2021. In fiscal year 2022, G+D issued a loan in the amount of EUR 5.2 million due in September 2023 to MC Familiengesellschaft mbH. As of December 31, 2022, there is a receivable from MC Familiengesellschaft mbH in the amount of EUR 0.2 million. As of December 31, 2022 and December 31, 2021, no further material transactions involving receivables and payables or income and expenses with MC Familiengesellschaft mbH existed.

Giesecke+Devrient GmbH entered into a service contract with MC Familiengesellschaft mbH. G+D renders accounting/taxes, finance and IT-system services. The allocated fee is immaterial.

Transactions with DER bogen GmbH & Co. KG

In fiscal year 2021, G+D issued a loan to DER bogen GmbH & Co. KG in the amount of EUR 20.0 million with a duration until March 2022. As of December 31, 2022, there is a guarantee to DER bogen GmbH & Co. KG in the amount of EUR 30.0 million with a term until June 2024. As of December 31, 2022 and December 31, 2021, no further material transactions involving receivables and payables or income and expenses with DER bogen GmbH & Co. KG existed. The interest expenses amounted to EUR 0.3 million in December 31, 2022 and EUR 0.1 million in December 31, 2021.

Giesecke+Devrient GmbH entered into a service contract with DER bogen GmbH & Co. KG. G+D renders accounting/taxes, finance and IT-system services. The fee charged as of December 31, 2022 and December 31, 2021 was EUR 1.1 million and EUR 1.0 million, respectively.

Transactions with Giesecke+Devrient Foundation and Giesecke+Devrient Foundation Geldscheinsammlung

In fiscal year 2010, G+D established the Giesecke+Devrient Foundation. The company maintained a loan from the Giesecke+Devrient Foundation in the amount of EUR 21.0 million and EUR 21.0 million as of December 31, 2022 and 2021, respectively. The loan is due at maturity on February 28, 2023. Interest expense amounted to EUR 0.3 million and EUR 0.3 million in 2022 and 2021, respectively (see Note 13 "Financial Liabilities"). The grants amounted to EUR 0.3 million and EUR 0.2 million in fiscal years 2022 and 2021, respectively.

Additionally in fiscal year 2021, the newly established Giesecke+Devrient Foundation Geldscheinsammlung took out a loan in the amount of EUR 0.4 million as of December 31, 2022 and December 31, 2021, respectively. The loan is due at maturity on November 17, 2023. The grants amounted to EUR 0.1 million and EUR 0.1 million in fiscal years 2022 and 2021, respectively.

Transactions between affiliated companies and joint ventures and associated companies

Transactions were carried out between affiliated companies and joint ventures as well as associated companies. The following summary presents these transactions from the viewpoint of the affiliated companies:

EUR million	Services rendered		Services received	
	2022	**2021**	**2022**	**2021**
Joint ventures				
Goods and services	16.6	9.9	0.5	0.9
	16.6	9.9	0.5	0.9
Associated companies				
Goods and services	3.0	–	0.3	2.9
	3.0	–	0.3	2.9
	19.6	**9.9**	**0.8**	**3.8**

Accounts receivable and accounts payable from joint ventures and associated companies are comprised of the following:

EUR million	Dec 31, 2022	Dec 31, 2021
Joint ventures		
Accounts receivable from joint ventures	3.5	0.8
Accounts payable to joint ventures	–	0.1
Associated companies		
Accounts receivable from associated companies	–	0.1
Accounts payable to associated companies	1.5	0.8

None of the balances from joint ventures and associated companies are secured.

Refer to Note 31 "Commitments and Contingent Liabilities" for commitments and contingent liabilities from joint ventures.

Transactions with members of key management personnel

The members of key management personnel include the members of the management board of Giesecke+Devrient GmbH, the chairmen of the management boards of Giesecke+Devrient Currency Technology GmbH, Giesecke+Devrient Mobile Security GmbH and Veridos GmbH, the chairman of the board of directors of secunet Security Networks AG (equal to Group Executive Committee – GEC) as well as the members of the supervisory board and the advisory board of Giesecke+Devrient GmbH since these bodies are responsible for planning, managing and monitoring the Group activities.

Compensation of key management personnel
The total compensation for active members of key management personnel amounted to EUR 9.9 million and EUR 10.4 million in 2022 and 2021, respectively.

In 2022 and 2021, the short-term benefits amounted to EUR 7.1 million and EUR 7.7 million, respectively. Thereof, EUR 6.2 million (prior year EUR 6.8 million) are attributable to the GEC, EUR 0.4 million (prior year EUR 0.4 million) to the supervisory board, and EUR 0.5 million (prior year EUR 0.5 million) to the advisory board.

The past service cost for pensions for the GEC (benefits after termination of employment contract) amounted to EUR 0.6 million and EUR 0.6 million in 2022 and 2021, respectively.

Furthermore, long term benefits for active members of the GEC amounted to EUR 2.2 million (prior year EUR 2.1 million).

In the current reporting year, members of the GEC, with exception of the chairman of the board of directors of secunet Security Networks AG, are entitled to receive 40.0 % of their variable salary at the end of two additional years (deferral) in so far as they already held their positions and obtained consent in the prior year. The payment is based on the achievement of target average ROCE (return on capital employed) for fiscal years 2022 and 2021 and each of the two following years. The right to deferral only exists if employment continues or is terminated because of specific predetermined reasons. The related expense is included in other long-term payments.

The consolidated financial statements include provisions for pensions for the GEC amounting to EUR 2.8 million and EUR 4.3 million as of December 31, 2022 and 2021, respectively, as well as provisions or payables relating to compensation for members of key management personnel in the amount of EUR 8.6 million and EUR 8.0 million, respectively.

Total remuneration of the supervisory board and the advisory board in accordance with commercial law equals the stated short-term benefits. Total remuneration of the active members of the management body of the parent company in accordance with commercial law are not disclosed according to Section 315e (1) in conjunction with Sections 314 (3) no. 2, 286 (4) no. 2 German Commercial Code (HGB).

Business transactions with members of key management personnel or other related parties
In the course of ordinary business activities, Giesecke+Devrient receives advisory and consultancy services from companies and personnel with connections to the members of the supervisory board and advisory board or to the shareholder as well as to the members of the supervisory board and the advisory board itself.

No prepayments or loans to members of key management personnel were granted in fiscal years 2022 and 2021.

Former key management personnel of Giesecke+Devrient GmbH
Compensation to former members of the management board of the parent company and their survivors amounted to EUR 1.4 million and EUR 2.4 million in 2022 and 2021, respectively.

Pension obligations to former members of the management board of the parent company and their survivors amounted to EUR 17.2 million and EUR 22.0 million as of December 31, 2022 and 2021, respectively.

27 Number of Employees

The average number of full-time equivalent employees (excluding trainees and employees on maternity leave):

	2022	2021
Production	7,744	7,411
Sales	1,407	1,448
Research and development	1,248	1,192
Administration	1,661	1,574
	12,060	**11,625**

28 Personnel Expenses

EUR million	2022	2021
Wages and salaries	697.3	652.9
Social security contributions	114.7	104.4
Pension entitlements	10.1	11.2
	822.1	**768.5**

29 Disclosure in accordance with Section 161 German Stock Corporations Act (AktG)

The consolidated financial statements include secunet Security Networks AG, a publicly traded company. In accordance with Section 161 AktG (German Stock Corporation Act), the management of secunet AG has filed the required declaration and made it permanently available to the public on their website (http://www.secunet.com).

30 Exemption from the disclosure of the annual financial statements and management report in accordance with Section 264/Section 264b HGB

The following companies will exercise their right not to prepare annual financial statements as well as not to prepare management reports in accordance with the regulations for corporate entities and certain registered partnerships as corporate entities (Section 264 (3) HGB) or partnerships that do not have an individual person either directly or indirectly as a general partner ("Kapitalgesellschaft und Co.") (Section 264b HGB). They also exercise their right not to have them audited or to disclose them:

- Giesecke+Devrient Mobile Security GmbH, Munich
- Giesecke+Devrient Currency Technology GmbH, Munich
- Papierfabrik Louisenthal GmbH, Gmund am Tegernsee
- Giesecke+Devrient Mobile Security Germany GmbH, Munich
- Giesecke+Devrient Secure Data Management GmbH, Neustadt near Coburg
- Giesecke+Devrient advance52 GmbH, Munich
- EPC Electronic Payment Cards GmbH & Co. KG, Munich
- Giesecke+Devrient Ventures GmbH, Munich
- Giesecke+Devrient Immobilien Management GmbH, Munich
- Giesecke+Devrient Grundstücksgesellschaft mbH & Co. KG, Gruenwald
- MC Holding GmbH & Co. KG, Gruenwald
- Giesecke+Devrient Group Services GmbH & Co. KG, Munich
- Giesecke+Devrient Ventures Management GmbH, Munich
- Giesecke+Devrient TrustTech Fund I GmbH & Co. KG, Munich

31 Commitments and Contingent Liabilities

Legal proceedings/contingent liabilities
Giesecke+Devrient is involved in pending claims and legal proceedings arising in the ordinary course of business. Provisions have been made for estimated liabilities for certain items. G+D believes the resolution of all such matters will not have a material impact on G+D's net assets, results of operations and financial position.

Contingent liabilities in the amount of EUR 22.0 million as of December 31, 2022 (as of December 31, 2021 EUR 17.9 million) relating to tax risks outside Germany exist. As of December 31, 2022, additional contingent liabilities relating to legal disputes amounting to EUR 0.2 million (December 31, 2021: EUR 0.1 million) as well as other contingent liabilities in the amount of EUR 0.2 million (December 31, 2021: EUR 0.0 million) exist. G+D believes claims relating to these tax risks, legal disputes and other contingent liabilities are improbable.

With regard to financial guarantees, the maximum credit risk is the maximum amount that the Group would have to pay.

Guarantees
Giesecke+Devrient does not hold material amounts of financial assets which serve as collateral for liabilities or contingent liabilities. Moreover, G+D does not hold collateral which it would be permitted to sell or repledge in the event of default by the owner of the collateral.

G+D has issued guarantees for deposits received in the amount of EUR 98.8 million as of December 31, 2022 and EUR 60.1 million as of December 31, 2021.

Giesecke+Devrient guarantees indebtedness of a joint venture concerning contractual performance to third parties. These arrangements cover credit lines of the joint venture in the amount of up to EUR 4.0 million in 2022 and 2021, respectively. Amounts relating to interest charges are also guaranteed. In the event of default of the joint venture, G+D is required to repay the borrowings covered by these guarantees. The maximum exposure relating to these guarantees amounted to EUR 4.0 million as of December 31, 2022 and December 31, 2021, respectively.

Furthermore, Giesecke+Devrient guarantees indebtedness for DER bogen GmbH & Co. KG in the amount of EUR 30.0 million in 2022 and EUR 0.0 million in 2021 as well as for a third party concerning contractual performance to third parties in the amount of up to EUR 1.0 million in 2022 and EUR 1.0 million in 2021. The guarantees secure credit lines used for DER bogen GmbH & Co. KG and other third-parties. Amounts relating to interest charges are also guaranteed. In the event of default, G+D is required to repay the borrowings covered by these guarantees. The maximum exposure relating to these guarantees amounted to EUR 31.0 million as of December 31, 2022 and EUR 1.0 million as of December 31, 2021, respectively.

Commitments
As of December 31, 2022, Giesecke+Devrient has material purchase commitments which mainly consist of short-term agreements that were entered into during the 2022 fiscal year for the purchase of supplies, inventories, property, plant and equipment, land and services.

The aggregate amount of required payments for commitments as of December 31, 2022 is allocated to the respective years as follows:

EUR million	
2023	615.8
2024	49.9
2025	27.3
2026	5.9
2027	3.1
thereafter	3.5
	705.5

32 Grants

In fiscal years 2022 and 2021, G+D received other miscellaneous grants for operational investments in the amount of EUR 0.9 million and EUR 0.0 million. In addition, G+D received grants for expenses of EUR 3.6 million and EUR 3.2 million in 2022 and 2021, respectively. At present, there is reasonable assurance that the attached conditions will be fulfilled.

33 Risks

Refer to section 4 of the Group management report, “Opportunities and Risk Report”, for the related disclosures.

34 Audit fees in accordance with Section 314 (1) no. 9 HGB

The audit fees for KPMG AG for the fiscal year ended 2022 amounted to EUR 2.1 million. The breakdown into categories is as follows: fees for audit services EUR 1.5 million, fees for audit-related services EUR 0.1 million, fees for tax-related services EUR 0.4 million and fees for all other services EUR 0.1 million.

35 Group to which the Company belongs

MC Familiengesellschaft mbH is the parent company of the Giesecke+Devrient Group (see Note 26 “Related Party Disclosures”). As of December 31, 2022, consolidated financial statements and a group management report will be prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the EU. The consolidated financial statements of MC Familiengesellschaft mbH will be published electronically in the German Federal Gazette.

36 Events after the Balance Sheet Date

In 2023, G+D will most likely sell 100.0 % of the shares in Giesecke+Devrient Mobile Security Russia, OOO at a price of RUB 25.0 million. A sales agreement has already been signed but the approval from the Russian authorities is outstanding. In conjunction with the planned sale, G+D recorded an impairment of the net assets in the amount of EUR 2.7 million as of December 31, 2022.

Refer to Note 24 “Business Combinations” for the acquisitions of Netcetera Group AG as well as NetSeT Global Solutions d.o.o.

There have been no further significant events after the balance sheet date which are expected to have a material impact on the net assets, financial position, and results of operations of the Group.

37 Shareholdings

Direct and indirect investments held by Giesecke+Devrient GmbH in affiliated companies

	Shareholding in %
Giesecke+Devrient Mobile Security GmbH, Munich	100.0
Giesecke+Devrient Currency Technology GmbH, Munich	100.0
MC Holding GmbH & Co. KG, Gruenwald	100.0
Giesecke & Devrient Grundstücksgesellschaft mbH & Co. KG, Gruenwald	100.0[1]
Giesecke & Devrient Immobilien Verwaltungsgesellschaft mbH, Gruenwald	100.0
Papierfabrik Louisenthal GmbH, Gmund am Tegernsee	100.0
Giesecke+Devrient Mobile Security Germany GmbH, Munich	100.0
Giesecke+Devrient Secure Data Management GmbH, Neustadt near Coburg	100.0
Giesecke+Devrient advance52 GmbH, Munich	100.0
Giesecke+Devrient Ventures GmbH, Munich	100.0
Giesecke+Devrient Immobilien Management GmbH, Munich	100.0
EPC Electronic Payment Cards GmbH & Co. KG, Munich	100.0
Giesecke+Devrient Group Sevices GmbH & Co. KG, Munich	100.0
Giesecke+Devrient Ventures Management GmbH i. G., Munich	100.0
Giesecke+Devrient Ventures GP GmbH, Munich	100.0
Giesecke+Devrient TrustTech Fund I GmbH & Co. KG, Munich	100.0
Giesecke+Devrient Ventures TrustTech Carry Pool GmbH & Co. KG, Munich	100.0
Giesecke + Devrient Mobile Security Iberia S.A., Barcelona	100.0
Giesecke + Devrient Mobile Security TCD Iberia, S.L., Barcelona	100.0
Giesecke + Devrient Currency Technology Iberia S.L., Madrid	100.0
Data Connectivity Podsystem SL, Seville	100.0
Giesecke+Devrient Mobile Security GB Ltd, Wembley/Middlesex	100.0
GIESECKE+DEVRIENT MOBILE SECURITY TCD UK LIMITED, Wembley/Middlesex	100.0
Giesecke+Devrient Currency Technology GB Ltd, Milton Keynes	100.0
Podsystem Limited, Buckingham	100.0
Luner.io Limited, Buckingham	100.0
Giesecke+Devrient Mobile Security Slovakia, s.r.o., Nitra	100.0
Giesecke+Devrient Mobile Security Italia S.R.L., Milan	100.0
Giesecke+Devrient Currency Technology Italia S.R.L., Rome	100.0
Giesecke+Devrient Mobile Security France S.A.S., Craponne	100.0
Giesecke+Devrient Mobile Security TCD France SASU, Craponne	100.0
Giesecke+Devrient Mobile Security Sweden AB, Stockholm	100.0
Giesecke+Devrient Mobile Security Finland Oy, Helsinki	100.0
Giesecke+Devrient Currency Technology Netherlands B.V., Amsterdam	100.0

[1] The general partner is Giesecke & Devrient Immobilien Verwaltungsgesellschaft mbH, Gruenwald

Direct and indirect investments held by Giesecke+Devrient GmbH in affiliated companies

	Shareholding in %
Giesecke+Devrient Currency Technology Istanbul Ticaret ve Servis Limited Sirketi, Istanbul	100.0
Giesecke+Devrient Mobile Security Russia, OOO, Moscow	100.0
Giesecke+Devrient Currency Technology FZE, Dubai	100.0
Giesecke+Devrient Holding FZE, Dubai	100.0
Giesecke & Devrient Egypt Ltd., Cairo	100.0
Giesecke & Devrient Saudi Arabia for Currency Technology, Riyadh	100.0
Giesecke and Devrient Currency Technology South Africa (Pty) Ltd, Johannesburg	100.0
GIESECKE AND DEVRIENT MOBILE SECURITY TCD SOUTH AFRICA (PTY) LTD, Johannesburg	100.0
Giesecke+Devrient Currency Technology Africa Ltd., Lagos	100.0
Giesecke+Devrient Currency Technology America, Inc., Dulles/Virginia	100.0
Giesecke+Devrient Mobile Security America, Inc., Dulles/Virginia	100.0
Giesecke+Devrient ePayments America, Inc., Dulles/Virginia	100.0
Podsystem Corporation, San Francisco/California	100.0
Giesecke+Devrient Mobile Security Canada, Inc., Toronto/Ontario	100.0
Giesecke y Devrient de México S.A. de C.V., Mexico City	100.0
GIESECKE+DEVRIENT MOBILE SECURITY TCD MÉXICO S.A. de C.V, Mexico City	100.0
Giesecke y Devrient Currency Technology de México, S.A. de C.V., Mexico City	100.0
Giesecke+Devrient Mobile Security Brasil Indústria e Comércio de Smart Cards S/A, São Paulo	100.0
GIESECKE+DEVRIENT MOBILE SECURITY TCD BRASIL LTDA, São Paulo	100.0
Giesecke+Devrient Currency Technology Brasil Serviços e Comércio de Soluções Tecnológicas Ltda., São Paulo	100.0
GyD Latinoamericana S.A., Buenos Aires	100.0
Giesecke and Devrient Mobile Security Australia Pty Ltd, Knoxfield/Victoria	100.0
GIESECKE+DEVRIENT MOBILE SECURITY TCD AUSTRALIA PTY LTD, Knoxfield/Victoria	100.0
Giesecke+Devrient Mobile Security Asia Pte. Ltd., Singapore	100.0
Giesecke & Devrient Asia Pacific Banking Systems (Shanghai) Co., Ltd., Shanghai	100.0
Giesecke+Devrient (China) Technologies Co., Ltd., Nanchang/Jiangxi	100.0
Giesecke & Devrient Asia Pacific Ltd., Hong Kong	100.0
Pod Group Asia Pacific Limited, Wan Chai	100.0
Giesecke & Devrient India Private Limited, New Delhi	100.0
Giesecke & Devrient MS India Private Limited, New Delhi	100.0
Giesecke and Devrient Currency Technology Korea Co., Ltd., Seoul	100.0
PT Giesecke & Devrient Indonesia, Jakarta	100.0
PT Giesecke and Devrient Mobile Security Indonesia i.L., Jakarta	100.0
Giesecke & Devrient Egypt Services LLC, Cairo	99.0
Giesecke & Devrient LOMO, ZAO, St. Petersburg	84.7
Giesecke and Devrient Mobile Security Southern Africa (Pty) Ltd, Johannesburg	84.0
Giesecke & Devrient Malaysia SDN BHD, Kuala Lumpur	80.0

Direct and indirect investments held by Giesecke+Devrient GmbH in affiliated companies

	Shareholding in %
secunet Security Networks AG, Essen	75.5
Secunet Inc., Austin/Texas (shell company)	75.5[1]
secunet International GmbH & Co.KG, Essen	75.5
secunet International Management GmbH, Essen	75.5
finally safe GmbH, Essen	75.5
stashcat GmbH, Hanover	75.5
SysEleven GmbH, Berlin	75.5
Veridos GmbH, Berlin	60.0
Veridos Canada Ltd., Toronto/Ontario	60.0
Veridos America Inc., Wilmington/Delaware	60.0
Veridos FZE, Dubai	60.0
VERIDOS IDENTITY SOLUTIONS UGANDA SMC LIMITED, Kampala	60.0
Firdaus Al Aman for general Trading, Baghdad	60.0
Veridos Brasil Comércio de Smart Cards e Soluções para Identificação Segura e Autenticação Ltda., São Paulo	60.0
Veridos México S.A. de C.V., Mexico City	60.0
E-SEEK Inc., San Diego/California	60.0
Giesecke & Devrient Kabushiki Kaisha, Tokyo	51.0
secustack GmbH, Dresden	38.5
Veridos Matsoukis. Security Printing S.A, Athens	36.0
VERIDOS TRADING AND SERVICES L.L.C., Abu Dhabi	29.4

[1] Not consolidated due to immateriality

Investments held by Giesecke+Devrient GmbH in associated companies and joint ventures

	Shareholding in %
Podsystem MX SAPI de CV, León, Gto	51.0
E-Kart Elektronik Kart Sistemleri Sanayi ve Ticaret Anonim Sirketi, Gebze	50.0
Shenzhen Giesecke & Devrient Currency Automation Systems Co. Ltd., Shenzhen	50.0
Netcetera Group AG, Zurich	30.0
UGANDA SECURITY PRINTING COMPANY (USPCL) LIMITED, Entebbe	29.4
Netset Global Solutions d.o.o., Belgrade	24.0
Build38 GmbH, Munich	20.9
Relief Validation Ltd, Dhaka	15.0

Investments held by Giesecke+Devrient GmbH in other related parties

	Shareholding in %
Brighter AI Technologies GmbH, Berlin	8.1
FINANCIAL NETWORK ANALYTICS LTD, London	6.5
IDnow GmbH, Munich	5.1
Metaco SA, Lausanne	3.9
SALV TECHNOLOGIES OÜ, Tallinn	3.0
Verimi GmbH, Frankfurt am Main	0.6

The affiliated company secunet s.r.o. i.L., Prague was deconsolidated in the 2022 financial year.

Munich, March 21, 2023

Giesecke+Devrient GmbH
The Management Board

[original German version signed by:]

Dr. R. Wintergerst
Group CEO

Dr. P. Zattler
Group CFO

Corporate Bodies

Supervisory Board

Prof. Klaus Josef Lutz
(Chairman) Munich

Eva Schäflein-Bohsewe[1]
(Deputy Chairman) Neubiberg

Achim Berg
Munich

Prof. Dr. Gabi Dreo Rodosek
Haar

Ralf Gerlach[1]
Gilching

Raimund Litters[1]
Rosenheim

Astrid Meier-Sikorski[1]
Munich

Horst Müller[1]
Ernsgaden

Claudia Scheck[1]
Königsmoos

Dr. Walter Schlebusch
Munich

Verena von Mitschke-Collande
Tutzing

Stefan Winners
Munich

Advisory Board

Prof. Klaus Josef Lutz
(Chairman) Munich

Verena von Mitschke-Collande
(Deputy Chairman) Tutzing

Achim Berg
Munich

Prof. Dr. Gabi Dreo Rodosek
Haar

Dr. Walter Schlebusch
Munich

Stefan Winners
Munich

Management Board

Dr. Ralf Wintergerst
(Group CEO, Giesecke+Devrient)

Dr. Peter Zattler
(Group CFO, Giesecke+Devrient)

[1] Employee representatives

Legal Notice

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Both versions can be found on the G+D website: www.gi-de.com

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