



Giesecke+Devrient

Annual Report 2020

**Creating
Confidence**

www.gi-de.com

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Secure solutions for turbulent times

The Covid-19 pandemic has caused widespread disruption. Like numerous other companies, Giesecke+Devrient is engaged in tackling the urgent challenges of the global health crisis, taking the best possible care of its employees, and continuing to deliver excellent service to its customers. We are also looking towards the future. Recent events and developments have magnified economic and social trends, thereby highlighting the need for viable, innovative solutions.

The aspects relevant to G+D revolve around one central theme: trust and security in the digitally networked world. Our contribution to a modern society is focused on finding answers to key questions in our four business areas of payment, connectivity, identities, and digital infrastructures. What payment systems are suitable for facilitating successful financial transactions in ever faster and more interconnected markets? How can the rapidly growing number of devices and machines that are connected via the Internet of Things communicate securely? How can protection of digital identities be guaranteed in order to enable trust-based cooperation? And how can individuals, businesses, public authorities, and governments build even better digital infrastructures that provide both fast connectivity and a high level of cyber security?

Ultimately, all these questions are about safeguarding assets – material assets such as money and intangible assets like personal data. Safeguarding assets is in G+D's DNA. When the company was founded nearly 170 years ago, its main activity was producing counterfeit-proof banknotes and securities. We are still doing that today – and a lot more besides. As a global technology provider with deep roots in Germany, our range is now much wider. Every day, our 11,500 employees across 33 countries ensure that billions of people enjoy greater security and convenience in their daily lives.

In our annual report, we showcase a few of our many activities. Read more about central bank digital currencies (CBDC), which will soon become a reality and combine the advantages of cash with those of existing electronic payment methods. Get to know our new partner Netcetera from Switzerland, with whom G+D has teamed up in order to become even more successful in the digital payment and banking market. Take us at our word when we say we are committed to implementing more climate-friendly working practices – for example, by making payment cards out of plastic recovered from the oceans. See for yourself how the breathtakingly fast-growing Internet of Things can be a safe place. Understand how human and increasingly also artificial intelligence are curbing digital identity fraud. And be impressed at how some employers have been much faster than others at providing secure homeworking environments during the Covid-19 lockdown.

As digital transformation and global interconnection continue to gather pace, security and trust are becoming ever more important and indispensable. That challenge motivates and drives us every day.

Giesecke+Devrient at a Glance

Giesecke+Devrient Group

EUR million	2020	2019	Change
Sales	2,312.8	2,447.0	-5.5 %
Capital expenditure	96.3	121.7	-20.8 %
Research and development	101.0	111.3	-9.3 %
EBITDA (adjusted)	266.0	276.0	-3.7 %
EBIT (adjusted)	131.1	147.8	-11.3 %
Net income	42.9	80.4	-46.7 %
Employees as of December 31	11,482	11,510	-0.2 %

Sales by Business Sectors

EUR million	2020	2019
Currency Technology	1,035	1,132
Mobile Security	786	877
Veridos	228	232
secunet	286	227

Company Structure

Giesecke+Devrient GmbH



Giesecke+Devrient Currency Technology GmbH

Head office
Munich

Core expertise
Solutions for the entire banknote lifecycle

Giesecke+Devrient Mobile Security GmbH

Head office
Munich

Core expertise
Solutions for secure and convenient digital mobility

Veridos GmbH

60 %

Head office
Berlin

Core expertise
Solutions for identity management and control

secunet AG

79.43 %

Head office
Essen

Core expertise
Solutions for protecting digital infrastructures



» We are creating confidence in the digital age! «

Due to the Corona pandemic, 2020 was a year of many challenges for Giesecke+Devrient and G+D Group CEO Ralf Wintergerst. In this interview, he explains why he is proud of the company and its staff and why he feels optimistic about the future.



Watch the full video interview here:
www.gi-de-report.com/interview



Sourour Stanke (Head of Corporate Communications and Government Relations) in conversation with Ralf Wintergerst (Group CEO Giesecke+Devrient)

Mr. Wintergerst, last year was very challenging for all of us. How was it for G+D?

2020 was a very intense year and one we'll remember for a long time to come. It began well for G+D with great momentum on the heels of a very successful 2019. However, in the spring of 2020 we had to switch priorities almost on a day-to-day basis when the Covid-19 pandemic began to spread. Ever since then, we've focused on two things: taking care of our staff and steering the company through this phase while remaining economically resilient.

And for you personally, what's your abiding memory of 2020?

That I worked from home – for the very first time in my working life. After a long day of video conferencing, I really found it quite difficult to switch off straight away so that I could spend time with my family. Since then, I've had a much better understanding of people who have to cope with situations like this in their everyday lives. But what I remember even more than that is how much the

G+D team impressed me. For example, some colleagues voluntarily remained at our factory near Wuhan for weeks in order to keep things running. And our factory in Barcelona decided to produce protective face masks instead of smartcards because there was a shortage of masks in Spain at that time. Those are just two of many examples I could cite to illustrate why I'm proud to be part of this team.

Let's talk figures. How was 2020 in business terms?

2020 turned out differently from what we'd expected, but it was a very robust year. Sales amounted to more than EUR 2.3 billion, which was only slightly below target. EBIT remained almost unchanged, with operating profit totaling over EUR 130 million. But probably the most important metric is order backlog, which stood at EUR 2.4 billion in 2020. That's more than our sales and demonstrates that G+D provides products and solutions that are highly sought after by customers worldwide, especially in challenging times.

» With this team and this clear strategy, G+D will be able to cope successfully with 2021 – even though, from a global perspective, the crisis looks set to continue until well into the year. «

Why did G+D perform so well?

We follow a clear strategy and create benefits through the things we do. G+D supports millions of people on a day-to-day basis in its four markets of payment, connectivity, identities, and digital infrastructures. For example, we make cash and cashless payment transactions secure, we reliably connect millions of devices – from compact smartphones to large industrial machines – to the Internet of Things, we work to safeguard digital identities, and we protect critical infrastructures, such as public authorities and energy suppliers, against cyber crime. All these solutions are always needed, but particularly so during a crisis.

How does G+D aim to develop and grow in the future?

In addition to the three key indicators already mentioned, a fourth element was also crucial in 2020. Instead of putting our future-focused investment on hold, we invested over EUR 130 million – the highest level in ten years. This money is primarily being invested in further digital transformation of G+D and in continuously enhancing our products and services for customers.

G+D recently acquired a 30 percent stake in Netcetera, a Swiss software company that develops digital payment solutions. What do you hope to gain from this move?

We have a clear strategy: we'll continue to invest in our existing activities and in delivering innovation ourselves. In addition to that, we will develop complementary expertise so we can continuously improve the offerings for our customers. G+D is a leading provider of smartcards for payment and all the associated services, so Netcetera neatly rounds out our portfolio because it provides digital payment and security solutions. The partnership is proving to be much more than just the sum of its parts.

Another trend that accelerated in 2020 was central bank digital currencies, or CBDCs. We already have bank accounts, payment cards, cash, and cryptocurrencies like Bitcoin. Why do we now need digital central bank money?

Because none of the existing methods of payment you've mentioned offers all the potential benefits.

Only a genuine digital central bank currency combines the advantages of cash with the convenience and speed of cashless transactions. A digital currency issued and regulated by a central bank is simple, fast, secure, available and accepted everywhere, government-run, and not driven by private commercial interests or speculation. If necessary, it can still be used during a power outage or without Internet access – that's not the case with existing electronic payment methods. It also provides financial inclusion for the millions of people around the world who don't have a bank account.

What role will Giesecke+Devrient play in CBDCs?

We are currently developing the overall infrastructure to enable CBDCs to be issued by governments. This includes the "factories," as we call them, which generate the digital monetary value. Special algorithms and protocols ensure the money transfer process is secure.

If we were to speak again in a year's time, what would you like to be able to say about 2021?

With this team and this clear strategy, G+D will be able to cope successfully with 2021 – even though, from a global perspective, the crisis looks set to continue until well into the year. It will undoubtedly take a few months until the pandemic is brought under control and we reach a "new normal." Nevertheless, in a year's time I'll very probably be able to report that G+D has made further progress in important areas: digital central bank currencies will be trialed and will prove their reliability. G+D will also step up its activities in the field of cloud security, for which we have developed scalable, robust, and secure solutions.

So essentially, it's about creating confidence in the digital age?

That's precisely what we aim to do. Throughout its long history, G+D has always been a trusted partner for safeguarding customer's assets. And the faster the pace of digitalization, the more this trust is needed. Digital transformation offers many advantages, but people also have concerns about it. Creating confidence is very important to us, especially in these times. That's the reason why we do what we do at Giesecke+Devrient.

Group Executive Committee



Andreas Räschmeier
CEO Veridos GmbH

Andreas Räschmeier has been CEO of Veridos, a joint venture between Giesecke+Devrient and Bundesdruckerei (Berlin), since November 2019. Veridos provides governments and public authorities with customized end-to-end solutions for secure identities.



Axel Deininger
CEO secunet AG

Axel Deininger joined the Management Board of secunet Security Networks AG in January 2018 and became Chairman in June 2019. His particular responsibilities include Strategy/Business Development, International Sales, Marketing, and Human Resources.



Ralf Wintergerst
Group CEO Giesecke+Devrient

Ralf Wintergerst has been Chairman 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 Communications, Corporate Strategy and Development, Legal, and Corporate Governance. In addition to his role at G+D, Ralf Wintergerst is Chairman 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.



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.



Gabrielle Bugat
Member of the Management Board,
Giesecke+Devrient Mobile Security GmbH

Gabrielle Bugat joined the Giesecke+Devrient Group management team at the beginning of 2021. She manages the activities related to G+D's smartcard and associated services business and oversees sales, operations, the portfolio, and development. Gabrielle Bugat also leads the continuing expansion of the digital business around secure digital payment solutions, including the 2020 investment in Swiss software company Netcetera.



Carsten Ahrens
CEO Giesecke+Devrient Mobile Security GmbH

Carsten Ahrens has been CEO of Giesecke+Devrient Mobile Security since 2017. G+D Mobile Security is a leading global provider of solutions for electronic and mobile payment and for connectivity, both of mobile applications and within the Internet of Things. It delivers products, solutions, and services that help its customers implement their digital transformation strategies securely and reliably.

Supervisory Board Report



Prof. Klaus Josef Lutz
Chairman of the Supervisory Board

Ladies and Gentlemen:

During the 2020 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 31, July 22, and December 10, 2020) based on detailed reports from the Management Board to review the company's economic situation, including major investment decisions and Group programs.

An important extraordinary topic at all of the Supervisory Board meetings was the impact of the global Covid-19 pandemic on the Group's business activities.

The Supervisory Board regularly considered the Group's corporate governance structure, including the compliance management system, the risk report, and the risk management system.

The Supervisory Board dealt with a number of HR matters in the reporting year, including agreeing on extensions to the contracts of Management Board members Ralf Wintergerst and Dr. Peter Zattler, and a change to pension commitments for Management Board members.

The Supervisory Board was also informed about strategic topics, such as proposed reorganizations and strategic company acquisitions, and here in particular the successful acquisition of shares in Netcetera Group AG, Switzerland.

At the July meeting, the Supervisory Board was given advance details of strategic planning, focusing in particular on payment-related developments. At the December meeting, the Supervisory Board reviewed the operational plans for 2021 with particular regard to the ongoing Covid-19 pandemic. The Supervisory Board was also informed about the Group's Planning Ahead program, which is designed to help optimize existing business operations and includes initiatives for developing the portfolio.

The Supervisory Board duly received the annual financial statements and management report of Giesecke+Devrient GmbH for the period ending December 31, 2020, prepared in accordance with the German Commercial Code (HGB), and the consolidated financial statements and Group management report for the period ending December 31, 2020, prepared in accordance with IFRS, along with the auditor's report.

The annual and consolidated financial statements were examined by the auditor, KPMG AG, which issued an unqualified audit opinion.

The auditor attended the meeting of the Supervisory Board on March 29, 2021, 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. It should be noted that, in addition to the audit, the auditor also examined the Veridos compliance management system in accordance with IDW PS 980. 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 March 29, 2021. Giesecke+Devrient GmbH achieved good results in fiscal 2020 despite extremely challenging conditions. This is due to the exceptional performance of the Management Board and staff across the company and 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 2020.

Munich, March 2021

Prof. Klaus Josef Lutz
Chairman of the Supervisory Board

#Payment

Why digital money is on the horizon



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

Can money exist in purely digital form, rather than as banknotes and coins? Yes – and that will soon be the case. Giesecke+Devrient is helping countries around the world as they gear up to issue secure central bank digital currencies (CBDC) in the coming years. A CBDC can be stored digitally on a device, such as a cell phone, smartwatch, or smartcard, and will be valid as legal tender, i.e. it can be used to make payments and transfers. There are already many options for electronic payment that we are happy to use in our daily lives, but these transactions are always linked to a bank account.

Only a genuine digital central bank currency combines the advantages of cash with the convenience and speed of cashless transactions. A CBDC is simple, fast, secure, available and accepted everywhere, government-run, and not driven by private commercial interests. Development of these currencies is therefore well under way. The European Central Bank (ECB) will decide by mid-2021 whether to launch a digital euro project. China has already announced that a central bank digital currency will be in circulation in time for the 2022 Winter Olympic Games. That could revolutionize the world of payment –

not only for private consumers. Many thousands of sensors and machines are already connected via the Internet of Things (IoT), with thousands more being added every hour. Secure CBDC will enhance the efficiency of digital business models or enable new business models. That will not only support our interconnected way of life, it's also an important driver of economic and social modernization. G+D is seeking to actively shape this trend with its own CBDC solution, called Filia.

#Payment

How digital payment will become ever more secure and convenient



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

With such a variety of digital payment options already available, is further innovation likely? G+D, a global leader in security solutions for cards and digital payment methods, has teamed up with software specialist Nectetera to deliver just that. The partnership is proving to be much more than just the sum of its parts. Since they joined forces in 2020, the two companies have been operating in a dynamic environment: the Covid-19 pandemic has hugely accelerated the trend towards online shopping and digital and contactless payment – on the Internet, using apps, cards, and smartphones.

G+D and Nectetera both firmly believe that providers who can combine security and user-friendliness in their solutions will be able to gain an attractive share of the market. With their range of services and customer structure being an excellent fit with each other, G+D and Nectetera fall into that category. Banking is one of the areas they will focus on. If a bank wants to remain competitive, it will need to offer customers a full range of payment options in the future – from ATMs for cash through payment cards and card functions on smartphones to complete digital wallets. G+D and Nectetera

are also a perfect match in the fast-growing eCommerce market. Our Swiss partner develops software solutions for online payment, while G+D specializes in secure payment transactions. A third customer segment with significant overlap is traffic and mobility, which provides customers with digital solutions for tickets and organizing travel.

All in all, since acquiring a stake in Nectetera – our biggest investment of the last ten years – exciting synergies have become apparent in all of G+D's four business areas of payment, connectivity, identities, and digital infrastructures. These will help us benefit from the dynamic growth of these markets.



#Connectivity

How Internet-enabled devices connect easily and securely via mobile telephony



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

How can a washing machine, a car, or an air cargo container be turned into a “living” machine that uses the Internet to connect, communicate, learn, and perform tasks for its owner? Giesecke+Devrient provides essential technologies that make this possible. All over the world, billions of systems, sensors, and devices are online and up to a million more will be added by 2023 – every hour, that is! The Internet of Things (IoT) can already be ranked as the largest machine ever built. G+D provides the requisite secure connectivity. For example, every year during the holidays, hundreds of thousands of people around the world unwrap a new smartphone and are eager to go online right away. They are able to do so thanks to the integrated eSIM card produced by G+D.

As a global leader in eSIM management, we are now moving beyond the consumer IoT segment and increasingly entering the markets for small to mid-sized commercial machines and devices (enterprise IoT) and large-scale industrial facilities (industrial IoT). Both markets have received a huge boost through the ongoing rollout of powerful 5G coverage and G+D is enabling customers to develop new and attractive business models.

For example, an increasing number of smart devices in households and businesses are connecting with the cloud through mobile communication and are thus leveraging potential savings – not only in terms of power consumption, but also maintenance and repairs.

The automotive sector provides another example. Modern cars are already Internet-enabled. They allow drivers to access useful telematics and multimedia services and also to benefit from insurance that is tailored to their driving style. Cars will soon be able to drive autonomously, for which fast and secure digital networking via eSIM is required. Machines can be connected and used more efficiently wherever they perform services – in agricultural settings, hospitals, factories, and vehicle fleets – with G+D providing the appropriate solutions for this and many other security-related applications in the IoT.

#Identities

Even identical twins have their differences



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

Does our digital identity really uniquely identify us and keep us safe from scammers? Giesecke+Devrient and its Veridos GmbH joint venture offer sophisticated technological solutions for protecting digital authentication in online banking, eGovernment services, Internet shopping, and when crossing borders that are even capable of distinguishing between twins who are genetically almost identical. If you add up the many activities performed on the Internet, each person probably has an average of several dozen digital identities. The term refers to the electronic data that depicts a person, an organization, an application, or a device in a uniquely identifiable way.

Identity fraud has become a billion-dollar industry, but we are actively helping to prevent it. eGovernment solutions, for example, allow people to obtain urgently needed official documents despite the Covid-19 pandemic that feature a digital seal of authenticity. Similarly, smartphones are increasingly becoming the hub of our daily lives: in the EU, it will soon be possible to store a driver's license and identity card on a cell phone.

For checking someone's identity without using any technical aids, people have their own eyes, but machines are already able to offer excellent support. Artificial intelligence (AI) is set to deliver further improvements here over the coming years. A key advantage is that machines don't get tired or distracted even when deployed 24/7, which can provide a crucial edge at border control points and in video authentication scenarios. AI thus has huge disruption potential. G+D has crafted an effective, enterprise-wide AI strategy accordingly.

#Digital Infrastructures

How SINA enables connections



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

Imagine if security-critical organizations had no protection against cyber attacks. State secrets could be disclosed, military missions threatened, or infrastructures, such as energy supplies, emergency medical care, or pension payments, sabotaged. For some public authorities, companies, and organizations, digital security is clearly especially critical. SINA (Secure Inter-Network Architecture) offers the best possible protection in such cases. One of the most successful cryptographic solutions in Europe, SINA was developed by secunet Security Networks AG, a member of the G+D Group. To date, more than 170,000 SINA Workstations have been shipped. These specially produced laptops have a crypto client and a smartcard with a PIN as the critical security feature.

SINA has delivered notable benefits in recent months during the pandemic where employees have been working from home. Wherever a SINA-equipped laptop is booted up, users can work with sensitive data and even official classified information. Employers that offer their staff the convenience and security of SINA include the German Federal Office for Migration and Refugees (BAMF), German embassies around the world, and

pension fund Deutsche Rentenversicherung Bund (DRV Bund). Here and in many other scenarios, secunet plays an important role in enabling critical infrastructures to remain fully operational and resilient. Looking to the future, expansion of 5G is helping to drive the trend towards integrating smartphones into secure workflows, for example. There will thus be plenty of opportunities for SINA to help deliver secure digital transformation.

#Responsibility

How payment cards are cleaning up the oceans



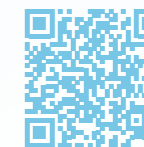
This story and further information on responsibility are available at www.gi-de.com/spotlight

Can we use payment cards made of plastic and still be environmentally friendly? Yes, we can! An increasing number of cards in the G+D portfolio contribute towards protecting the environment and help our customers achieve their own climate targets. Our environmentally friendly payment card products were consolidated under the Convego® Beyond brand in 2020. These products include Convego® Recycled – the first card of its kind to be made entirely of recycled PVC. For the Convego® Natural range, compostable and climate-neutral biomass is used. The Convego® Parley Ocean, launched in 2021, is especially innovative and was developed in conjunction with environmental organization Parley for the Oceans. Plastic waste collected from the world's oceans and beaches is used to produce these cards.

In order to ensure that environmental protection is not restricted to specific product segments, we have been calculating the product carbon footprint (PCF) of payment cards and other products throughout their entire lifecycle since 2019. The aim is to implement

climate-friendly savings and innovation in our production and logistics processes. We do this by minimizing the size of SIM cards and using less plastic packaging for banknotes, for example.

All of these measures are part of our wider corporate sustainability strategy. As a member of the UN Global Compact, G+D is committed to upholding its principles across six areas: employees, environment, value chain, products and solutions, business practices, and society. More information about corporate responsibility at G+D is available in our latest progress report.



Our Progress Report is available at www.gi-de.com/en/group/values/responsibility

Group Management Report

as of December 31, 2020

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Overall Assessment of
Economic Situation and Forecast

1. Group Profile

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

G+D creates innovative security solutions for the reliable protection of important security-related areas:

Payment

G+D offers products and solutions worldwide for secure payment in physical, electronic, and digital form and thus occupies a unique position in the payment ecosystem.

Connectivity

In a 24/7 digital world, connectivity for mobile devices and applications presents huge challenges. G+D supplies key technologies for trusted connections between people and machines on the Internet of Things.

Identities

In modern societies, the identities of citizens, users, and things require special protection. G+D provides governments and public authorities all over the world with reliable, integrated ID solutions.

Digital infrastructures

The need for digital protection is growing daily as increased networking of devices and systems opens up new avenues for cyber attacks. Innovative approaches to IT and data security are required. Tailored solutions developed by G+D protect digital systems, networks, and confidential data, meeting even the most demanding requirements.

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. G+D employs 11,482 people across 33 countries.

G+D Currency Technology provides solutions for secure end-to-end cash management. The Banknote Solutions division 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.

The products and solutions offered by **G+D Mobile Security** safeguard data, identities, and a wide range of digital transactions. The Secure Transaction + Services (STS) division covers all business relating to smartcards and secure digital payment in the banking sector. It also provides solutions for secure access and identity management in the healthcare sector and for smart mobility and companies, including associated services, such as production, personalization, and product development. The Trusted Connected Devices division (TCD) is responsible for the IoT and digital solutions, eSIM management, eOS software licensing, the smartcard business, and digital identities.

Veridos is a joint venture between G+D and Bundesdruckerei that offers customers secure and pioneering identification and identity solutions. The product range covers traditional printed documents and also electronic ID documents. Highly secure travel documents, ID systems, and healthcare cards can be used for conventional identification purposes as well as for authentication and protection in digital business processes.

secunet Security Networks AG is a leading German provider of high-quality cyber security solutions and an IT security partner to the Federal Republic of Germany. It offers public authorities and industrial enterprises an extensive portfolio of products and consulting services around 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 **Corporate Center** manages the overall direction of the G+D Group and actively supports strategic development of the individual business sectors. It handles tasks that are of strategic importance for the whole Group. These include M&A activities, strategic initiatives for developing future and new digital business, G+D advance52, investment company G+D Ventures, the Corporate Technology Office (C-TO), and the Corporate Development Fund. Within the Corporate Center, Shared Services covers functions such as IT, accounting, and HR. G+D real estate company holds and operates the building at the Munich site and leases it to the Group companies.

Management Structure

	Corporate Center			
	<ul style="list-style-type: none"> – Group Management – Shared Services and Real Estate Management – G+D Ventures – G+D advance52 			
Business Sector	Currency Technology	Mobile Security	Veridos	secunet
Division	<ul style="list-style-type: none"> – Banknote Solutions – Currency Management Solutions 	<ul style="list-style-type: none"> – Secure Transaction + Services – Trusted Connected Devices 		<ul style="list-style-type: none"> – Public – Business

2. Business Performance

2020 was dominated by the Covid-19 pandemic, which had profound consequences for the global economy. The necessary lockdown measures resulted in a significant slowdown in economic activity in all parts of the world during the first half of the year. Extensive measures aimed at stemming infection rates triggered a severe recession in the global economy in the second quarter. Comprehensive monetary and fiscal packages to support the economy, combined with a gradual easing of Covid-19 restrictions, helped to bring about an economic recovery in the second half of the year, meaning that the global economy was less hard hit in 2020 than experts had initially predicted.

The International Monetary Fund (IMF) estimates the global growth contraction for 2020 at –3.5%. In China, where the pandemic began, a lower number of cases was again reported in the second quarter, and the economy began to recover strongly. As a result, China was the only major economy to experience growth in 2020, expanding by 2.3%. Other major economies, such as the US (–3.4%), India (–8.0%), Brazil (–4.5%), Germany (–5.4%), and the overall eurozone (–7.2%), were hit hard by the economic restrictions imposed, as were nearly all emerging markets.

Curfews, contact restrictions, and travel bans meant that the service sector was much more severely impacted than industry and manufacturing, with transport providers, tourism, cultural venues, and restaurants all being badly affected.

Alongside the negative impact on the global economy, the Covid-19 pandemic also highlighted opportunities and significantly accelerated existing trends. In particular, digital transformation of all areas of life received a huge boost as a result of contact and travel restrictions. With its innovative security solutions for reliable protection in important security-related areas, G+D was well placed in this rapidly changing working and living environment. We enable secure payment transactions in physical, electronic, and digital form; provide reliable connectivity solutions for mobile devices and the Internet of Things; safeguard the identities of people and objects; and protect digital infrastructures, systems, networks, and confidential data.

2.1. Group Business Performance

The key financial performance indicators used to manage the Group remained the same in fiscal 2020. 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, average working capital intensity¹, free cash flow, and return on capital employed (ROCE)².

Like many other businesses, we faced exceptional challenges last year as a result of the Covid-19 pandemic. G+D proved extremely well positioned to respond to crises of this kind thanks to its risk-diversified business sectors and solution portfolio. Together with careful cost and investment management, this limited the effects of the pandemic on G+D compared with other industries.

¹ Ratio of 12-month average of working capital in reporting year to annual sales; working capital = customer receivables + inventories + contract assets – liabilities – contract liabilities

² 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

During the reporting year, our main priorities were safeguarding the health of our employees and ensuring the continuity of our business operations. We adapted all locations to Covid-19-compliant ways of working and – where feasible – introduced extensive remote working, secured our global production and supply chains, and kept our project and services business up and running despite restricted travel options. With its range of solutions for security-related areas, G+D is regarded as a systemic provider, meaning that its factories and sites were closed only temporarily. The Group was primarily affected by restrictions at sites in China, Malaysia, and India.

However, our worldwide network of production facilities enabled us to continue manufacturing our products and avoid long periods of downtime. G+D was thus able to uphold its reputation as a reliable business partner during the crisis and meet its delivery commitments. This trusted status is also reflected in the fact that our order intake increased by 6 % to EUR 2.4 billion despite the pandemic. At EUR 1.6 billion, the order backlog exceeded the high level recorded in the previous year (EUR 1.5 billion), despite negative exchange rate effects.

Alongside tackling the urgent challenges arising from the pandemic, G+D continued to pursue its growth strategy in future-oriented digital fields in the reporting year and invested in Swiss software firm Netcetera in 2020. The company has extensive expertise in software solutions for banks and digitalization in the fields of payment, transport, healthcare, media, and insurance.

As a leading provider of physical, electronic, and digital payment solutions, G+D can open more doors for Netcetera in the global market, while adding software solutions from Netcetera allows G+D to expand its portfolio of innovative products for securing transactions. Leveraging their complementary expertise will enable the two companies to meet the rising demand for digital security solutions.

G+D Ventures, our minority interest investment arm, acquired a 3.6 % stake in Swiss company Metaco SA in the reporting year. In doing so, G+D is investing in a leading provider of security-critical digital infrastructures for financial institutions.

2.1.1. Results of Operations

Despite all the challenges of fiscal 2020, sales were only slightly below the prior-year level, at EUR 2,313 million. The drop was EUR 134 million (–5.5 %). Adjusted for exchange rate effects, sales fell by around EUR 100 million (–4.0 %).

Our business sectors were affected to differing degrees by the pandemic. While business opportunities and additional sales potential emerged for some business sectors or divisions, others fell short of sales expectations. The ongoing travel restrictions in particular had an impact on execution of major projects and on our services business.

Sales by Business Sector

EUR million	2020	2019	Change absolute	Change in %
Currency Technology	1,034.7	1,132.4	–97.7	–8.6 %
Mobile Security	785.6	876.5	–90.9	–10.4 %
Veridos	227.5	231.6	–4.1	–1.8 %
secunet	285.6	226.9	58.7	25.9 %
Consolidation	–20.6	–20.4	–0.2	–1.2 %
Total	2,312.8	2,447.0	–134.2	–5.5 %

Sales at Currency Technology were below the strong results achieved in the previous year. The Banknote division maintained its excellent market position thanks to an increase in demand for banknotes.

In the Currency Management Solutions division, global travel restrictions had an impact on the services business and on obtaining customer approval of major projects. Sales were thus adversely affected, despite a flexible response being possible in many cases. Sales of compact money counting systems, such as those used in casinos and on cruise ships, were down due to a decline in activity, particularly in the tourism sector.

In Mobile Security, sales fell compared with the previous year. The Secure Transaction + Services (STS) division largely met its sales expectations, despite the weakening of the Chinese market as a result of the pandemic. Having chosen to focus on more profitable markets and market segments, a year-over-year decline in sales was anticipated. The Trusted Connected Devices (TCD) division was unable to sustain the level of sales achieved in the previous year, with demand in the automotive sector and the solutions business being hit by the pandemic. The gains by the euro against most other currencies were also a major factor in lower sales at Mobile Security in the reporting period.

Veridos largely equaled the sales performance of the previous year, despite delays in major projects caused by Covid-19 travel restrictions.

secunet continued its exceptional success story and enjoyed another record year in 2020, thus significantly exceeding expectations for the fiscal year. Sales growth was mainly driven by pandemic-related higher demand from the government sector for security solutions. German public authorities moved quickly to set up the secure remote workplaces required for working from home, for example, using products from the SINA product range and in particular the SINA Workstation.

In order to improve comparability of expenditure and earnings, the consolidated income statement for 2019 shown below has been adjusted by EUR 15.7 million to take account of restructuring costs in the Mobile Security business sector. There were no standardizations in fiscal 2020.

Consolidated Income Statement (IFRS)

EUR million	2020	2019	Change absolute	Change in %
Net sales	2,312.8	2,447.0	–134.2	–5.5 %
Gross profit¹	653.7	652.6	1.0	0.2 %
Gross margin ¹ (% of sales)	28.3 %	26.7 %	1.6 pp	6.0 %
Selling, R&D, and general administrative expenses ¹	(501.4)	(515.7)	14.3	2.8 %
Other operating income and expenses ¹	0.3	–1.5	1.8	> 100.0 %
Operating profit¹	152.5	135.3	17.2	12.7 %
Financial income/(expenses)	–21.3	12.5	–33.8	< –100 %
EBIT (adjusted)	131.1	147.8	–16.7	–11.3 %
EBIT margin (adjusted) (% of sales)	5.7 %	6.0 %	–0.3 pp	–6.1 %
Adjustments	0.00	(15.7)	15.7	100 %
EBIT	131.1	132.1	–1.0	–0.7 %
Interest income	1.7	2.1	–0.4	–17.9 %
Interest expense	(19.9)	(23.8)	3.9	16.3 %
Earnings before income taxes (EBT)	112.9	110.4	2.6	2.3 %
Income taxes	–70.0	–30.0	–40.0	< –100 %
Net loss/Net income	42.9	80.4	–37.5	–46.7 %
Reconciliation to EBITDA				
EBIT (adjusted)	131.1	147.8	–16.7	–11.3 %
plus depreciation and amortization (adjusted) ²	(134.8)	(128.1)	–6.7	–5.2 %
EBITDA (adjusted)	266.0	276.0	–10.1	–3.7 %

¹ To improve comparability, restructuring costs at Mobile Security were eliminated from the 2019 figures.

² Depreciation and amortization = depreciation and amortization of property, plant and equipment and intangible assets + write-downs on investments in associated companies

Gross profit slightly exceeded that of the previous year (+0.2 %), despite lower sales volumes. The gross margin rose to 28.3 % amid difficult market conditions. In addition to the focus on more profitable markets and market segments and short-term cost-saving measures, better order quality also had a positive impact on gross profit.

Structural costs for selling, research and development, and general administrative expenses fell overall by –2.8 % compared with the previous year.

The cost-reduction measures introduced in the context of our Covid-19 monitoring program were a key contributor to the changes in gross margin and structural costs described above. As part of our cost-cutting program, we defined specific short-term measures – for example, relating to new hires, travel, events and marketing, external services, and investment – and are closely monitoring their success. This rigorous cost discipline is paying off, as the figures show. Individual impairment on receivables, meanwhile, had an adverse impact of around EUR 17 million.

Other operating income and expenses increased by EUR 1.8 million, largely as a result of Covid-19 subsidies in Mobile Security and lower losses on asset disposals.

Operating profit improved by 12.7 % compared with the previous year, rising to EUR 152.5 million.

Financial income was heavily impacted in 2020 by steady appreciation of the euro against other currencies that are important for G+D, including the US dollar, Chinese renminbi, Brazilian real, and Russian ruble. Foreign currency transactions and currency hedging costs totaling EUR –21.9 million thus had a negative effect on financial income. Approximately 30 % of these costs are attributable to the Brazilian real. In the previous year, gains of EUR 1.5 million in total were achieved from foreign currency. Income from securities made a EUR +1.2 million contribution to financial income, contrasting with EUR 6.2 million in the previous year. Investments in consolidated companies carried at equity contributed EUR +3.0 million (previous year: EUR +4.8 million). Deconsolidation of the stake in CiTech reduced financial income by EUR –4.3 million.

At EUR 131.1 million, EBIT was virtually unchanged compared with the previous year and below the previous year's adjusted EBIT (EBIT margin: –0.3 pp). The decrease was due to lower financial income.

Net interest income improved in 2020 by EUR +3.5 million to EUR –18.2 million. It comprised interest of EUR 9.6 million on pension obligations (previous year: EUR 12.7 million) and interest expenses for financial and other liabilities of EUR 10.4 million (previous year: EUR 11.0 million). Interest income totaled EUR 1.8 million (previous year: EUR 2.1 million).

The tax rate increased from 27.2 % to 62.0 % in 2020.

Tax Expense		
EUR million	2020	2019
Actual tax expense	–41.7	–43.3
Deferred tax expense	–28.3	13.3
Total tax expense	–70.0	–30.0

Actual tax expense was consistently around EUR 40 million in the 2020 and 2019 reporting years, as in previous years.

The change in tax expense compared with the previous year was primarily due to a change in deferred taxes. 2019 was notable for positive deferred taxes, which was largely the result of a reassessment of how existing loss carryforwards can be used for tax purposes.

Deferred tax expense in 2020 included expenditure of approximately EUR 22 million from impairment of deferred tax assets on loss carryforwards. These mainly relate to a correction of the international transfer pricing used in recent years.

Due to special effects relating to deferred taxes, net income decreased in the reporting year by 46.7 % compared with the previous year and stood at EUR 42.9 million.

At EUR 266.0 million, EBITDA was 3.7 % lower than in the previous year.

2.1.2. Research and Development

As an innovative, customer-focused technology company, G+D is heavily reliant on research and development to safeguard its ongoing success.

G+D invests in its in-house R&D departments, builds up expertise through partnerships with external companies, and boosts its know-how by acquiring specialized companies.

Sustained R&D capacity – expressed as the number of employees in the R&D division – increased by some 3 % year-over-year. Pure R&D expenditure disclosed in the income statement fell by approximately EUR 10 million to EUR 101 million in 2020 due to the following factors:

- Some R&D capacity was relocated to more cost-efficient locations within the Group, or additional capacity was built up there.
- In the reporting year, G+D focused more on customer projects and thus allocated a higher proportion of costs to the cost of goods sold.
- In addition, the urgency of all R&D projects was reviewed, and external expenditure was moved to planning year 2021.

At EUR 148.1 million, total spending on G+D's own research and development was slightly below the high level of the previous year. This spending covers customer-specific development costs (EUR 34.5 million), capitalized research and development costs (EUR 12.7 million), and pure R&D expenditure (EUR 101.0 million).

Research and Development¹

	2020	2019	Change in %
Number of R&D employees (FTE)	1,183	1,151	2.8 %
Proportion of total employees (%)	10.3 %	10.0 %	2.8 %
Spending on R&D (EUR million)	148.1	159.8	–7.3 %
thereof pure R&D expenditure (EUR million)	101.0	111.3	–9.3 %
R&D ratio (% of sales)	4.4 %	4.6 %	–5.1 %
thereof cost of goods sold (EUR million)	34.5	31.0	11.1 %
thereof capitalizable costs (EUR million)	12.7	12.9	–1.9 %
Capitalization ratio (%)	12.5 %	11.6 %	8.1 %
Amortization of capitalized development costs (EUR million)	11.2	11.8	–5.2 %
Number of active patents	7,446	7,452	–0.1 %
New patent applications	124	123	0.8 %

¹ To improve comparability, restructuring costs at Mobile Security were eliminated from the 2019 figures.

As a market leader for end-to-end cash management, Currency Technology is further expanding its market presence. G+D leverages innovation to offer customers attractive solutions to optimize their value chains. The portfolio extends beyond the provision of substrates, banknotes, security features, and banknote processing machines and is continually being adapted through research and development to meet emerging market needs. G+D provides comprehensive software and automation solutions to enable customers to further digitize cash management processes. These solutions optimize cash processing operations and help to reduce costs – while continuing to meet the highest security requirements.

G+D is also continuously improving its banknote security features with regard to threads, foils, and pigments. A new product class of foil elements was successfully introduced in 2020. For the first time, it is possible to place so-called patches over window elements and look through them for verification purposes. In addition, Hybrid ADDVance® represents a new milestone in substrate technology, with corresponding benefits in terms of durability, including of special features.

With regard to sustainability, G+D is currently working with a central bank to develop a “green” banknote concept due to be unveiled in 2022. This will involve a holistic view of the product lifecycle, from raw materials through energy use, production, and distribution to end-of-life recycling.

In addition to R&D activities relating to innovative solutions for manufacturing and processing banknotes, G+D also stepped up its efforts to develop a digital currency in 2020. Approximately 80 % of central banks around the world are already making preparations to introduce a central bank digital currency (CBDC). G+D is currently developing a technological solution for manufacturing and distributing digital money that is the electronic equivalent of cash. This project is being driven forward by G+D advance52 in conjunction with Currency Technology.

Global R&D activities in the Mobile Security business sector support the development of products and solutions in the Secure Transaction + Services (STS) and Trusted Connected Devices (TCD) divisions.

In the Trusted Connected Devices division, the Lifecycle Management Systems (LCM) portfolio has been enhanced in line with standards set by the industry organization GSMA – particularly in relation to requirements arising from the roll-out of 5G wireless network technology. Functions in the SIM and eSIM portfolio have also been expanded and eUICC solutions for machine-to-machine communication in the automotive industry have been implemented to support the Internet of Things. In addition, specific embedded operating system (eOS) solutions for high-end mobile devices are being developed for several large OEM customers.

R&D activities in the Secure Transaction + Services division include further expansion of embedded operating system (eOS) platforms for chip-equipped payment cards. The first product variants in the premium card portfolio, such as metal cards, payment cards with fingerprint sensors, and battery-operated cards, are also being finalized. G+D further consolidated its strong position in the German market by developing and certifying next-generation versions of the dual interface healthcare card and Germany's national ID card. The e-payment solution was also expanded, based on the existing CloudPay HCE platform.

The central platform for our Java Card products, JavaCore, was further developed to enable not just payment products but also products in the fields of telecommunications and identification in the future.

R&D activity at Veridos is focused on developing highly secure ID documents, complex system solutions for analog and digital verification of documents and identities, and convenient and secure e-government services. In the future, people will be able to use their cell phones to interact with public authorities, e.g. when applying for an ID document, thereby avoiding long waits and restricted opening hours. Another key area is connecting physical documents with the digital world. Veridos has driven forward the development and standardization of mobile ID documents (e.g. mobile driver's licenses) and created a security feature for identity documents that can be verified using a smartphone.

With its solutions for highly secure digital identities, software platforms for document lifecycle systems and verification, and development work on e-government services, Veridos now offers a wide portfolio of solutions designed to meet future needs. These extend from applying for an ID document through to having it checked at border control points.

The research and development undertaken by secunet focuses on improvements and innovations in processes, products, and solutions to safeguard critical infrastructures, such as cloud security and eHealth. In this regard, secunet is responding to its customers' growing need for greater security in existing infrastructures and for solutions to threats associated with new technical environments.

2.1.3. Capital Expenditure

Investment¹ totaled EUR 131.8 million in 2020 and was thus close to the record level of the previous year. A conscious decision was made not to fully utilize the anticipated investment budget for property, plant, and equipment and intangible assets – which was set at the prior-year level – because investment activity was reined in as part of the response to Covid-19.

The funds released were channeled into forward-looking investments that are of strategic importance for the Group. This included acquiring shares in Netcetera and Metaco and also financing a major cash center project in India, which meant the overall level of investment was maintained.

Both Currency Technology and Mobile Security mainly invested in the renewal or optimization of production facilities. Banknote Solutions invested in the expansion of production facilities for security features. Currency Management Solutions notably invested a significant amount in the Indian market. G+D India processes cash for its customer at various sites and invested more than EUR 6 million in a cash center for this purpose. Mobile Security invested in innovative solutions and in its card body and personalization business at a number of locations. The Veridos subsidiary in Greece made further investments in expanding and modernizing its production facilities in 2020. Investment in property, plant and equipment (including advance payments) stood at EUR 72.8 million overall.

¹ Investment in intangible assets, property, plant and equipment and associated advance payments, and investment in equity interests.

Investment in intangible assets (EUR 23.5 million) primarily relates to capitalized R&D expenses and capitalized software solutions. In recent years, G+D has significantly expanded its digital transformation strategy and underscored its position as an innovative technology provider by more than doubling its IT investment over the past five years.

G+D is also strengthening its market position by investing in other companies (EUR +35.5 million). In fiscal 2020, G+D invested in stakes in Netcetera and Metaco.

Depreciation/amortization fell by EUR –1.7 million compared with the previous year.

Capital Expenditure and Depreciation/Amortization

EUR million	2020	2019	Change absolute	Change in %
Investment in property, plant and equipment and intangible assets ²	96.3	121.7	–25.4	–20.8 %
Investment in equity interests	35.5	12.1	23.4	193.4 %
Total capital expenditure	131.8	133.8	–2.0	–1.5 %
Depreciation/amortization ²	105.6	107.3	–1.7	–1.6 %

² Capital expenditure and depreciation/amortization before IFRS 16; write-downs in connection with restructuring costs were standardized in the prior year.

2.1.4. Assets and Liabilities

Balance Sheet Summary (IFRS)

EUR million	2020	2019	Change absolute	2020 % of total assets
Assets	2,668.8	2,756.4	–87.6	
Current Assets	1,702.3	1,775.3	–73.0	63.8 %
thereof inventories	341.0	339.6	1.5	12.8 %
thereof current receivables	582.6	644.6	–62.0	21.8 %
thereof contract assets	222.9	175.9	47.0	8.4 %
thereof cash and cash equivalents	412.8	439.4	–26.5	15.5 %
Non-current assets	966.5	981.1	–14.7	36.2 %
thereof property, plant and equipment	529.1	532.8	–3.7	19.8 %
thereof intangible assets	168.1	177.4	–9.3	6.3 %
thereof other non-current assets	269.2	270.8	–1.6	10.1 %
Liabilities and equity	2,668.8	2,756.4	–87.6	
Current liabilities	883.6	1,048.1	–164.5	33.1 %
thereof current financial liabilities	21.1	62.7	–41.6	0.8 %
thereof current lease liabilities	19.9	19.1	0.8	0.7 %
thereof provisions	93.5	103.6	–10.1	3.5 %
thereof trade payables	377.9	432.2	–54.3	14.2 %
contract liabilities	206.2	240.9	–34.7	7.7 %
Non-current liabilities	1,301.9	1,202.1	99.8	48.8 %
thereof non-current financial liabilities	468.5	418.6	49.9	17.6 %
thereof non-current lease liabilities	62.5	61.8	0.7	2.3 %
thereof pensions and similar liabilities	711.9	668.9	43.0	26.7 %
Equity	483.3	506.2	–22.9	18.1 %

Current assets decreased by EUR –73.0 million compared with 2019. In the reporting year, inventories remained at approximately the same level as the previous year, while current trade receivables decreased by EUR –62.0 million due to individual impairments and lower advance payments. A detailed analysis of the change in cash and cash equivalents is provided in section 2.1.5.

As of December 31, 2020, non-current assets were slightly below the previous year's level. Intangible assets decreased in 2020 by EUR –9.3 million. The drop is attributable to additional depreciation/amortization on licenses and software that are no longer used.

Current financial liabilities were down compared with the previous year due to scheduled repayment of loans and the reduction of short-term bank credit.

Changes in provisions were partly attributable to lower provisions for onerous contracts.

Receivables and accounts payable trade decreased by approximately the same amount and shrank the balance sheet.

Approval/partial approval of major projects was delayed in some cases due to travel restrictions resulting from the pandemic. Together with higher stocks of banknotes, this reduced contract liabilities in the current fiscal year and led to a rise in contract assets (EUR +47.0 million).

Current and non-current financial liabilities increased by a total of EUR 8.3 million. This included Veridos taking out a new KfW promotional loan of EUR 32.0 million.

Provisions for pensions increased by EUR 43.0 million, primarily due to adjustment of the actuarial interest rate from an average of 1.4 % to 1.2 %.

At 18.1 %, the equity ratio was slightly down over the previous year (18.4 %).

Average working capital intensity increased from 22.3 % to 25.2 % in 2020, mainly as a result of lower sales and increased contract assets.

At 10.3 %, ROCE based on EBIT was 2.4 percentage points below the prior-year level due to lower EBIT.

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

2.1.5. Financial Position

At EUR 8.5 million, free cash flow was positive in 2020 despite the special challenges associated with the pandemic but was lower than the high level recorded in the previous year (EUR +69.5 million) due to increased working capital. Adjusted for M&A activities, free cash flow was more than EUR 40 million.

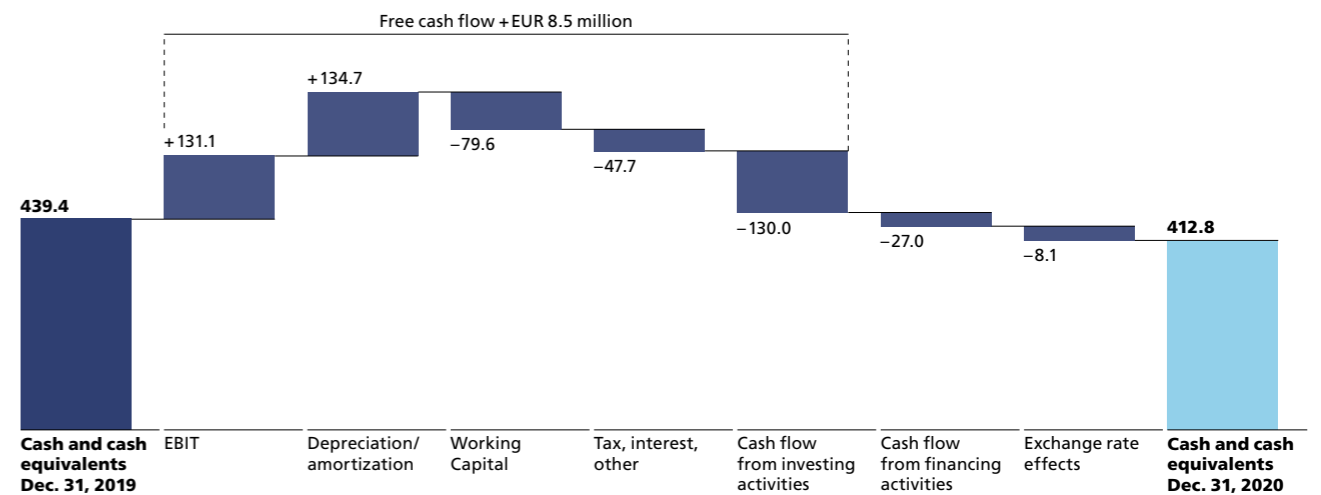
Free cash flow was mainly impacted by the significant increase in working capital resulting from the pandemic. G+D invested in a bigger safety stock of critical raw materials and supplies in the reporting year in order to safeguard production in the event of short-term logistical problems triggered by the pandemic. On the other hand, the increased working capital relating to major projects and the banknote sector had a negative effect on contract assets. In the coming years, the high level of contract assets in the reporting year will be reduced again, leading to an increase in cash.

Cash flow from financing activities amounted to EUR –26.9 million and included scheduled repayments on existing long-term bank loans (EUR 27.4 million) and a dividend payment of EUR 14.2 million to shareholders. Please refer to note 13 of the consolidated financial statements for information on approved but unused credit lines and on the capital structure. IFRS 16 had an impact of EUR –21.6 million on cash flow from financing activities.

In 2020, cash and cash equivalents were down by only EUR 26.5 million at EUR 412.8 million, despite the challenging economic backdrop. G+D thus again demonstrated its internal financing capability and stable financial position, even in a difficult fiscal year.

Change in Cash and Cash Equivalents

EUR million



2.1.6. Employees

As of the reporting date of December 31, 2020, the total number of employees was broadly flat year-over-year. Compared with 2019, the number of employees fell primarily at Mobile Security in Asia, due to withdrawing from low-margin markets. In contrast to the targeted reduction at Mobile Security, new employees were recruited at secunet and Veridos. In these business sectors, the number of staff in production roles in particular was increased in line with higher sales volumes. Gratifyingly, it proved possible to avoid Covid-19-related redundancies.

Number of Employees

FTE at reporting date	2020	2019	Change absolute	Change in %
Production	7,318	7,358	-40	-0.6 %
Sales	1,427	1,413	14	1.0 %
Research and development	1,183	1,151	32	2.8 %
Administration	1,555	1,588	-33	-2.1 %
Total	11,482	11,510	-28	-0.2 %

Personnel expenses fell to EUR 717.9 million (-2.9 %) in the reporting year, with the number of employees remaining almost unchanged. One reason for this reduction was that the management team reduced its bonus payments significantly compared with the previous year as part of the cost-saving program, thereby contributing towards achieving corporate objectives.

2.1.7. Declaration on Management and Governance

In accordance with the German law on equal participation of women and men in leadership positions in the private and public sectors (FüPoG), the Supervisory Board set itself the target in 2017 for Giesecke+Devrient GmbH of ensuring that a third of the members of the Supervisory Board should be women. There are no plans to make changes to the two Management Board positions. The aim with regard to the top tier of management below Board level is to achieve a proportion of 17 %, and 30 % for the second management tier. We aim to meet these quotas by March 31, 2022. A third of our Supervisory Board is already made up of women, meaning we have exceeded the standards required by law.

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. Since 2021, G+D's extended senior management team (Global Executive Committee) is mixed gender-wise. Worldwide, we aim to further increase the proportion of women in leadership positions.

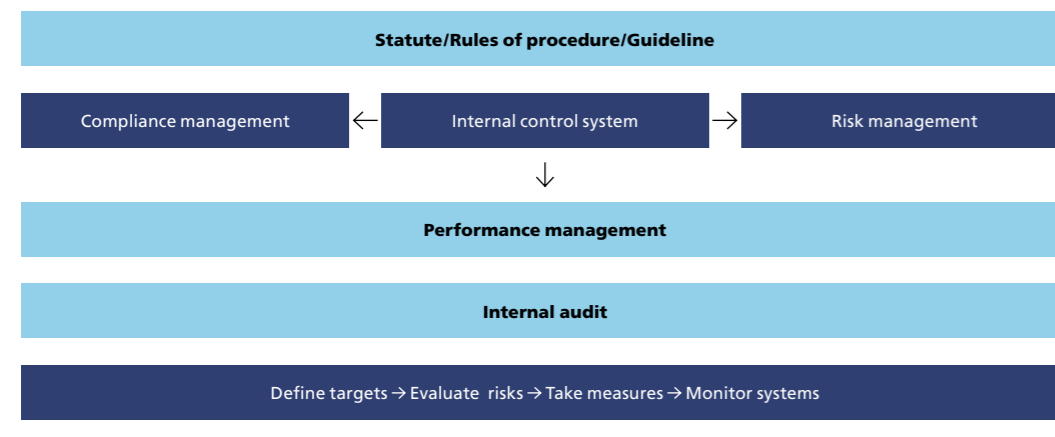
3. Opportunities and Risk Report

As a global enterprise, G+D is exposed to significant uncertainty and change. An intelligent integration of all elements of corporate governance allows G+D to

- seize opportunities and develop appropriate strategies, including making decisions about its portfolio, and
- actively manage the risk involved and minimize its impact.

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

Corporate Governance



Management of opportunities and risks is an ongoing task. A risk management system is in place to identify, assess, and manage potential risks. Risks associated with business operations are subject to continuous monitoring, including assessing the impact on performance. Active risk management is therefore an integral part of performance management, with its various strategy, planning, and controlling mechanisms.

The compliance management system (CMS) ensures Group-wide regulatory compliance to avoid issues such as corruption and antitrust law violations. It thus underpins the confidence of our customers and our reputation as a company. The Group-wide compliance organization ensures that every employee and all members of the Management Board, Supervisory Board, and Advisory Board within the G+D Group are familiar with compliance requirements and act accordingly. As part of compliance assessments, risks relating to corruption and antitrust law violations are reviewed and assessed across all Group entities. In 2020, compliance risks were comprehensively assessed in this context at the global level in order to identify particular areas of the compliance program that will enable us to further improve the CMS.

The Compliance Offices report on a quarterly basis on activities in the core compliance areas of prevention, detection, and response. G+D management is informed of the preventive measures that are in place to ensure compliance within the organization. Any (potential) compliance violations and the countermeasures taken are also reported, thereby enabling management to address any undesirable developments. The Management Board reports annually to the Supervisory Board.

During the reporting year, the internal organization was also restructured and the new position of Head of Corporate Compliance created. This position reports directly to the Group's Chief Legal & Compliance Officer. The aim of this restructuring is to create the necessary compliance synergies and comply with the legal requirements of a compliance matrix organization.

Individual events are handled within the business sectors by the relevant Chief Compliance Officers or are escalated to senior corporate compliance level, as required. External consultants are also used as necessary to examine and advise on compliance matters. Individual events are reported separately and directly to the Chairman of the Management Board of the business sector, who takes appropriate measures in conjunction with the Board members of the subsidiary.

As part of the internal control system, potential gaps in the system are identified and closed. 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,
- application 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. No control system, regardless of an effectiveness assessment, is capable of preventing or detecting all incorrect information.

On behalf of the Management Board, the Group's auditing department (Corporate Auditing) 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.

All elements of the corporate governance system operate independently and are coordinated centrally by the Group's Management Board. Individual responsibilities are clearly defined.

3.1. 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 measures is ensured.

Operational and financial risks are dealt with on an ongoing basis whenever necessary in the course of day-to-day business management. These risks are assessed during the quarterly performance reviews. In contrast, strategic risks are subject to an annual review as part of the strategy process. Compliance risks are managed by the compliance organization and are subject to 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.

Every employee has a duty to examine their immediate environment for possible risks and report any risks discovered. With support from the Local Risk Officer in each Group company and drawing on other functions (e.g. Legal, Controlling, Patents), 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.

3.2. 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:

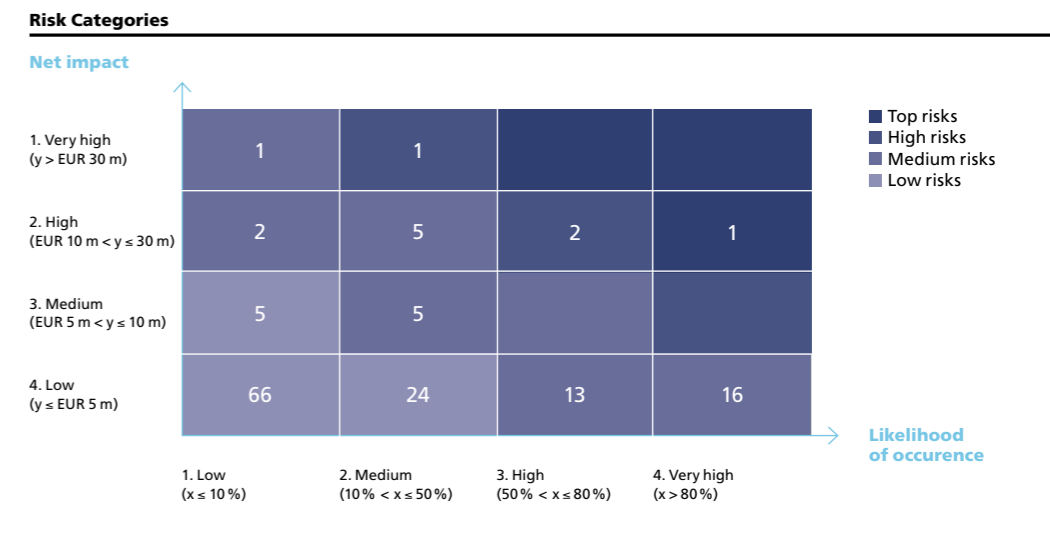
Category	Description	Likelihood of occurrence
Very high	Expected to occur	x > 80 %
High	Probable	50 % < x ≤ 80 %
Medium	Not probable	10 % < x ≤ 50 %
Low	Possible, but largely theoretical	x ≤ 10 %

The individual risks are assigned to predefined risk categories (see 3.3) 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 does offer the advantage that trends are easier to detect, however, and conclusions can be drawn regarding risk resilience.

3.3. Summarized Risk Report

As of December 31, 2020, 141 risks had been reported to the Management Board and the Supervisory Board via the risk report. These were evaluated according to net impact and likelihood of occurrence, as shown in the matrix below:



One risk was assessed as a "Top risk." This is a tax risk that is attributable to capitalized deferred taxes and the reviewing of international transfer prices. In the course of preparing the annual financial statements, comprehensive risk provisioning was put in place, which includes writing down capitalized deferred taxes.

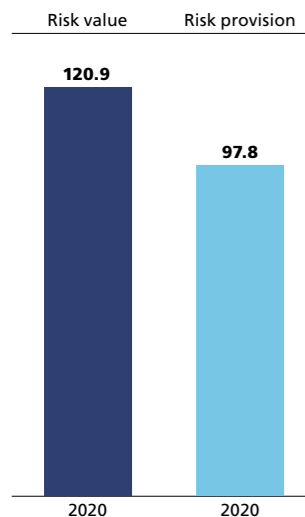
There are three risks in the "High risks" category:

- As in the previous year, risks on a major project being handled by Veridos are assigned to this category. For each major project the overall risk is recorded in the risk register by assessing and aggregating the individual risks accordingly. Risk premiums were taken into account when calculating the project costs, thereby ensuring that comprehensive risk provisioning is in place.
- Two further risks relate to bad debt risk in South America and North Africa, for which risk provision has already been made through appropriate impairments. The risk rating for these risks was increased compared with the previous year, for both the likelihood of occurrence and the net impact.

The overall risk value for the Group is EUR 121 million. Simultaneous occurrence of all individual risks can be virtually ruled out due to the different correlations. This overall risk value is therefore considered to be theoretical.

Risk Value and Risk Provision

EUR million



EUR million

	Risk value	Risk provision	Δ PY Risk Value	Δ PY Risk Provision
Value Creation Risks	9.8	8.6		
Tax and Customs Risks	39.7	27.4		
Security Risks	1.1	0.0		
Product Development Risks	2.5	2.3		
Political Risks	0.1	0.0		
Market Risks	11.6	0.0		
Major Project Risks	25.4	24.7		
Legal Risks	2.6	1.7		
IT Risks	4.8	4.5		
Bad Debt Risks	23.3	28.5		
Total Risks	120.9	97.8		

Global tax risks are assessed as having the highest risk values, followed by aggregated risks arising from major projects, bad debt risk, and market risk.

In particular, risk values for tax and customs risk, bad debt risk, and IT risk have increased compared with the previous year. The risk value has more than doubled in these categories. The risk value for IT risk has increased due to an impairment risk on licenses and software that are no longer used. By contrast, the risk values relating to product development and security were significantly reduced.

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 98 million. The relationship between risk provisioning and risk value has improved considerably compared with the previous year, due to conservative risk provisioning. In 2020, risk provisioning was in place for 81% of risks. This increase is mainly attributable to risk provisioning in the categories "Top risks" and "High risks." 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 ($\leq 50\%$) do occur or the risk premiums calculated for major projects turn out to be too low, this would have a negative impact on the net assets, financial position, and results of operations. If the risks covered by provisions occur, there would be a cash outflow.

After careful analysis, the Group-wide risks are not deemed existential in nature, either individually or overall. Thanks to G+D's strong market positioning, 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 2021 and to leverage the opportunities that arise. G+D is pursuing strategic development of its product portfolio accordingly.

Covid-19 has been spreading since the beginning of 2020, presenting health risks, financial risks, and logistical risks. In response, G+D has set up a central crisis management system, which – in addition to business performance and liquidity development – addresses location-based employee/health management and enables a swift reaction to changing situations. It also monitors the countermeasures identified to cut costs and ensure ongoing liquidity. The results are reported separately to the Management Board and supervisory bodies. Covid-19-related risks are not included in the above risk report in order to avoid double reporting.

3.4. Risks and Opportunities by Category

G+D divides risks into 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.

Political risks

Political uncertainty in Europe and Latin America and economic realignment in the US and China are the dominant features of the current landscape. Political decisions may result in the introduction of further trade barriers at the international level. In Europe, economic activity could be negatively affected despite the Trade and Cooperation Agreement between the EU and the UK. Contracts with customers could be impacted if shortages make it impossible for the parties to fulfill their contractual obligations.

G+D counters this risk 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.

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 product development in particular, deadline compliance is crucial in order to meet the identified customer requirements and avoid substantial additional costs during the subsequent commercialization phase. In addition to these risks, intellectual property rights must be protected, licensed, and 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 corresponding market opportunities. G+D is a leader in the fields of payment, connectivity, identities, and digital infrastructures, all of which have huge market potential. If these trends gain in importance over the short term in industry, the public sector, or the private sphere and the associated change processes take place more quickly, opportunities for solutions provided by G+D could emerge, leading to additional sales and earnings growth.

Value creation risks

At G+D, supply chain management is handled individually in each of the business sectors. Any disruptions, such as those resulting from regulatory regimes, disruption of infrastructure, interruptions to the supply of raw materials, or an increase in prices of raw materials (particularly semiconductors and cotton), may have adverse effects on the availability, quality, and cost of G+D products and therefore impact sales and earnings.

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, for example. 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.

If heightened awareness of security issues in the digital world and new technologies result in an even greater need for security technology than expected, G+D could see a faster rise in demand for new and improved products. Alongside product innovation, process innovation boosts efficiency and can 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 and have a positive impact on net assets, the financial position, and results of operations, allowing an upward revision of existing forecasts.

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 activities such as an integrated program to nurture talent. Measures for attracting and developing qualified staff and boosting retention enable G+D to secure the necessary human capital as an important production factor. 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.

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. Specific attacks are carried out by certain countries, potential 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.

These scenarios could lead to 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. G+D may also be faced with threats from individuals who gain unauthorized access to buildings or systems and misuse, steal, or damage information, products, materials, or other assets.

G+D has taken a range of preventive measures to address 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), physical security measures (e.g. entry and access control systems, camera and alarm systems, site security), and naturally also raising the awareness of all employees through regular training sessions on the various security issues.

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

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 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 and 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.

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 securities lose value, this is referred to as counterparty credit risk. The current uncertain political situation in South America and in North and South Africa could affect fulfillment of contracts by each side. The Group primarily manages these risks as part of its ongoing business and financing activities. The G+D Group and its operating subsidiaries are subject to written policies issued by G+D GmbH and are managed by G+D GmbH accordingly. Bad debt risks form part of the risk reports submitted to the Management Board and are also included in regular reporting to the Supervisory and Advisory Boards.

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.

Market risks

G+D is subject to 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 rate 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. A positive change in interest rates or exchange rates could result in higher financial income.

In accordance with IAS 19, G+D is required to recognize actuarial gains and losses arising from pension obligations fully and immediately in equity. This leads to high volatility of equity in response to changes in capital market interest rates. In a favorable capital market environment, opportunities may arise that have a positive impact on G+D's assets.

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

Risk associated with an impairment of goodwill at the Group level is subsumed under market risks. Goodwill shown in the consolidated balance sheet is tested annually for impairment.

Opportunities may arise in general from changed market circumstances. G+D could achieve higher sales volumes through flexible sales and production processes as well as through a focus on internal skills. The company's own market position could lead to higher pricing.

Tax and customs risks

As a global 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.

The introduction of a holding structure in 2017 and the associated carve-out and establishment of legally independent local companies increased the potential risks. Where possible, the risk position was substantially reduced by obtaining binding information from the relevant local tax authorities.

Legal risks

When selecting external partners, care must be taken to ensure that they abide by internal rules and applicable laws and regulations, as well as supplying G+D's customers with high-quality products. When contractual relationships end, 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.

Legal requirements could also lead to an increase in sales and earnings. If, for instance, 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.

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 and also negatively impact G+D's competitive position. Employees receive regular awareness training on this subject.

Environmental issues are becoming increasingly important for businesses. G+D seeks to counter risks in this area by means of an environmental management system and through measures adopted as part of our corporate responsibility (CR) activities, which include occupational health and safety management. For more details, see our progress report for the UN Global Compact (<https://www.gi-de.com/en/group/values>). Opportunities based on a positive reputation in environmental matters could boost the attractiveness of G+D as a business partner and employer. This could have positive effects on the ability to achieve financial indicators and on human capital.

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.

Professional project management and 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.

4. Overall Assessment of Economic Situation and Forecast

4.1. Overall Assessment of Economic Situation

The 2020 fiscal year was dominated for G+D, as for others, by the impact of the global Covid-19 pandemic. Despite the exceptional challenges, Group sales almost matched the level of the previous year. In this extraordinary year, G+D benefited from its broad sectoral and geographical positioning, its flexible supply chains, and the long-established trust of its customers. Ongoing performance checks were carried out as part of Covid-19 monitoring and relevant corrective action was taken where necessary. Thanks to these efforts, G+D ended the fiscal year on a positive note, despite global restrictions and challenging economic conditions. EBIT and EBITDA were nearly at the same record levels as in 2019 and therefore better than originally anticipated at the start of the pandemic.

Currency Technology was not able to achieve its predicted level of sales. The Banknote Solutions division exceeded expectations thanks to an increase in demand for banknotes, while Currency Management Solutions – with the exception of services – fell significantly short of its target as a result of Covid-19. This was mainly due to postponed projects. None of the ongoing customer projects was canceled, however.

Sales at Mobile Security were slightly below the expectation of the previous year. The Secure Transaction + Services (STS) division largely met its sales target. The shortfall in sales relating to Payment in particular was offset by high B2B sales and robust healthcare card business. The Trusted Connected Devices (TCD) division was unable to achieve the budgeted level of sales. This was due to pandemic-related reduced demand in the solutions business and in the automotive sector during the first half of the year.

Veridos was unable to achieve its predicted level of sales. Although production and services were largely unaffected by the Covid-19 pandemic, there were delays in signing off completion of major projects due to the various restrictions.

secunet continued its exceptional success story and enjoyed another record year in 2020, thus significantly exceeding expectations for the fiscal year. This strong sales growth was mainly due to the pandemic-related increase in demand for security solutions for mobile working environments. Sales in the Business division, particularly in healthcare, proved to be better than expected.

G+D significantly exceeded its target for operating income, while EBITDA also came in above expectations. Despite the increase in operating income, EBIT was slightly lower than expected. This was solely due to negative foreign currency effects and the associated negative financial income, which was substantially lower than planned.

Below-target EBIT also meant that the predicted ROCE was not achieved.

Free cash flow remained positive, despite higher-than-expected working capital intensity and the investment in Netcetera, which was not included in planning. Free cash flow before M&A activities was significantly positive, as expected.

4.2. Forecast

G+D started the current fiscal year with a good order backlog and a forward order book covering a period of 8.2 months.

The forecast for the current 2021 fiscal year is subject to considerable uncertainty due to the ongoing global pandemic. Although vaccine approvals and vaccinations have raised hopes of a turnaround in the pandemic, new waves of infection and virus mutations are causing concern. Economic recovery is therefore likely to vary significantly from country to country, depending on access to vaccines and the effectiveness of political action to tackle the pandemic. These aspects have been taken into account in the 2021 budget, to an extent. The measures adopted on short notice to reduce costs and investment in the reporting year cannot simply be repeated in 2021. This applies in particular to R&D expenditure and investment. Making savings here could have a negative impact on customer projects and compromise efficiency. The Covid-19 monitoring measures introduced in the reporting year will be maintained in 2021, and we will continue to watch their success very closely.

Actual results may vary accordingly from expected performance. Assuming there are no significant changes in the expected exchange rates, G+D aims to maintain the level of sales seen in the reporting year in 2021.

Currency Technology expects moderate sales growth overall in 2021. We anticipate that Banknote Solutions will be able to maintain sales at virtually the same very good level as in the previous year. Currency Management Solutions is expecting sales to increase significantly compared with 2020.

Mobile Security is assuming that sales will be about the same as in the previous year across both its divisions. A sustained improvement in earnings is again anticipated in the coming fiscal year due to above-average growth in the solutions business and a focus on high-quality card products on the hardware side. The shortage of chips among suppliers will have a negative impact at the beginning of the year.

For Veridos, we expect sales to match those of the previous year in 2021, despite challenges in complex project business.

At secunet, it is not yet possible to estimate conclusively how long the positive sales scenario on the back of the Covid-19 pandemic will persist in 2021. Accordingly, the forecast is that sales performance will be weaker than the exceptional result recorded in 2020.

Slighter lower EBIT and EBITDA are expected for G+D overall than in 2020.

In 2021, working capital intensity is expected to be largely unchanged compared with the reporting year.

Investment activity including M&A activities remained at the same high level in 2020 as in the previous year. We are planning to invest the same amount in the current fiscal year. Furthermore, investment is expected to significantly exceed depreciation/amortization of fixed assets.

Free cash flow will be firmly positive in the year ahead due to the development of contract assets planned in 2020.

G+D will take a selective approach to recruiting new employees in 2021 and will hire staff in growth markets and strategically important areas.

ROCE is expected to be slightly below that achieved in 2020 due to EBIT performance.

Consolidated Financial Statements

as of December 31, 2020

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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 balance sheet as of December 31, 2020, the consolidated income statement, the consolidated statement of profit or loss and other comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows for the financial year from January 1 to December 31, 2020, and notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we have audited the group management report of Giesecke+Devrient Gesellschaft mit beschränkter Haftung for the financial year from January 1 to December 31, 2020. In accordance with German legal requirements, we have not audited the content of those components of the group management report specified in the "Other Information" section of our auditor's report.

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, 2020, and of its financial performance for the financial year from January 1 to December 31, 2020, 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. Our opinion on the group management report does not cover the content of those components of the group management report specified in the "Other Information" section of the auditor's report.

Pursuant to Section 322 (3) sentence 1 HGB, 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 [Institute of Public Auditors in Germany] (IDW). 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.

Other Information

Management and/or the Supervisory Board are/is responsible for the other information. The other information comprises the following components of the group management report, whose content was not audited:

- the Group's corporate governance statement included in Section 2.1.7. of the group management report, and
- the progress report for the UN Global Compact, which is referred to in the group management report.

The other information does not include the consolidated financial statements, the group management report information audited for content and our auditor's report thereon.

Our opinions on the consolidated financial statements and on the group management report do not cover the other information, and consequently we do not express an opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in so doing, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the group management report information audited for content or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

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 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 22, 2021

KPMG AG Wirtschaftsprüfungsgesellschaft

[Original German version signed by:]

Huber	Wanske
Wirtschaftsprüfer	Wirtschaftsprüfer
[German Public Auditor]	[German Public Auditor]

Consolidated Income Statement

for the Years Ended December 31, 2020 and 2019

EUR Million	Note	2020	2019
Net sales	15	2,312.8	2,447.0
Cost of goods sold		(1,659.1)	(1,802.4)
Gross profit		653.7	644.6
Selling expenses		(236.4)	(239.7)
Research and development expenses		(101.0)	(114.5)
General and administrative expenses		(164.1)	(169.3)
Other operating income/(expenses), net		0.3	(1.5)
Operating profit		152.5	119.6
Share in earnings from equity investments	6	2.4	4.8
Other financial income/(expenses), net	17	(23.8)	7.7
Earnings before interest and income taxes		131.1	132.1
Interest income	18	1.7	2.1
Interest expense	18	(19.9)	(23.8)
Earnings before income taxes		112.9	110.4
Income taxes	19	(70.0)	(30.0)
Net income		42.9	80.4
thereof apportioned to non-controlling interests		7.7	10.2
thereof apportioned to the shareholders of Giesecke+Devrient GmbH		35.2	70.2
		42.9	80.4

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, 2020 and 2019

EUR Million	Note	2020	2019
Net income		42.9	80.4
Other comprehensive income			
Items that will never be reclassified to the income statement			
Actuarial gains and losses ¹	14	(41.5)	(75.8)
Deferred taxes on actuarial gains and losses	19	11.1	22.1
		(30.4)	(53.7)
Items that are or may be reclassified to the income statement			
Currency effects from the translation of foreign operations		(18.5)	5.4
Effective part of fair value changes in cash flow hedges		2.5	–
Share of income and expenses recognized directly in equity resulting from the use of the equity method of accounting		(0.2)	0.2
		(16.2)	5.6
Other comprehensive income, net of tax		(46.6)	(48.1)
Total comprehensive income		(3.7)	32.3
thereof apportioned to non-controlling interests		6.7	8.7
thereof apportioned to the shareholders of Giesecke+Devrient GmbH		(10.4)	23.6
		(3.7)	32.3

¹ Variation due to changes in consolidation structure

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

Consolidated Balance Sheet

as of December 31, 2020 and 2019

EUR million	Note	Dec 31, 2020	Dec 31, 2019
ASSETS			
Current assets			
Cash and cash equivalents		412.8	439.3
Financial assets	2	93.4	87.7
Accounts receivable trade and other receivables, net	3	582.6	644.6
Inventories, net	4	341.0	339.6
Income taxes receivable		11.5	33.7
Non-current assets held for sale	8	–	6.5
Other current assets	5	38.1	48.0
Contract assets	23	222.9	175.9
Total current assets		1,702.3	1,775.3
Non-current assets			
Investments accounted for under the equity method	6	43.8	16.2
Investments in other related parties	6	5.5	8.9
Financial assets	2	24.9	23.7
Accounts receivable trade and other receivables, net	3	11.9	20.4
Intangible assets	7	168.1	177.4
Property, plant and equipment	8	529.1	532.9
Deferred tax assets	19	163.6	183.0
Income taxes receivable		1.8	1.9
Other non-current assets		4.1	5.6
Contract assets	23	13.7	11.1
Total non-current assets		966.5	981.1
Total assets		2,668.8	2,756.4

EUR million	Note	Dec 31, 2020	Dec 31, 2019
LIABILITIES AND EQUITY			
Current liabilities			
Accounts payable trade and other accounts payable	10	377.9	432.2
Provisions	11	93.5	103.6
Financial liabilities	13	21.1	62.7
Lease obligations	9	19.9	19.1
Accrual for income taxes and income taxes payable		28.9	42.1
Other current liabilities	12	136.1	147.5
Contract liabilities	23	206.2	240.9
Total current liabilities		883.6	1,048.1
Non-current liabilities			
Provisions	11	12.1	12.6
Financial liabilities	13	468.5	418.6
Lease obligations	9	62.5	61.8
Pensions and related liabilities	14	711.9	668.9
Deferred tax liabilities	19	9.0	10.6
Other non-current liabilities		9.0	10.9
Contract liabilities	23	28.9	18.7
Total non-current liabilities		1,301.9	1,202.1
Equity			
Capital stock	20	25.8	25.8
Additional paid-in capital	20	29.5	29.5
Retained earnings	20	447.3	455.9
Accumulated income and expenses recognized directly in equity		(3.5)	12.5
Treasury stock	20	(60.1)	(60.1)
Non-controlling interests		44.3	42.6
Total equity		483.3	506.2
Total liabilities and equity		2,668.8	2,756.4

Consolidated Statement of Changes in Equity

for the Years Ended December 31, 2020 and 2019

EUR million	Capital stock	Additional paid-in capital	Retained earnings	Accumulated income and expenses recognized directly in equity resulting from currency translations	Accumulated income and expenses resulting from cash flow hedges	Treasury stock	Subtotal	Non-controlling interests	Total
Balance as of January 1, 2019	25.8	29.5	448.3	7.1	–	(60.1)	450.6	39.3	489.9
Net income	–	–	70.2	–	–	–	70.2	10.2	80.4
Other comprehensive income	–	–	(52.0)	5.4	–	–	(46.6)	(1.5)	(48.1)
Total comprehensive income	–	–	18.2	5.4	–	–	23.6	8.7	32.3
Additions due to changes in consolidation structure	–	–	–	–	–	–	–	0.2	0.2
Dividends paid	–	–	(10.6)	–	–	–	(10.6)	(5.6)	(16.2)
Balance as of December 31, 2019	25.8	29.5	455.9	12.5	–	(60.1)	463.6	42.6	506.2
Net income	–	–	35.2	–	–	–	35.2	7.7	42.9
Other comprehensive income	–	–	(29.6)	(18.5)	2.5	–	(45.6)	(1.0)	(46.6)
Total comprehensive income	–	–	5.6	(18.5)	2.5	–	(10.4)	6.7	(3.7)
Additions due to changes in consolidation structure	–	–	–	–	–	–	–	0.6	0.6
Dividends paid	–	–	(14.2)	–	–	–	(14.2)	(5.6)	(19.8)
Balance as of December 31, 2020	25.8	29.5	447.3	(6.0)	2.5	(60.1)	439.0	44.3	483.3

Consolidated Statement of Cash Flows

for the Years Ended December 31, 2020 and 2019

EUR million	2020	2019
Cash flows from operating activities		
Earnings before interest and income taxes	131.1	132.1
Adjustments to reconcile earnings before interest and income taxes to cash provided by operations		
Depreciation, amortization and impairment/recoveries	134.7	129.5
(Gain)/loss on sale of investments, net	2.4	–
(Recoveries)/impairment on investments in associated companies	0.1	–
(Gain)/loss on sale and disposal of intangible assets and property, plant and equipment	0.9	2.1
(Gain)/loss on the sale of shares in associated companies and joint ventures	(0.6)	0.1
Undistributed earnings in associated companies and joint ventures excluding dividend payments	(1.8)	(4.8)
Dividends received from associated companies and joint ventures	2.1	2.1
Change in operating assets and liabilities		
(Increase)/decrease in investments in trading securities	(6.4)	(7.0)
(Increase)/decrease in accounts receivable trade and other accounts receivable, net	70.2	(95.4)
(Increase)/decrease in prepaid expenses and other assets	11.7	2.1
(Increase)/decrease in contract assets	(52.6)	(39.5)
(Increase)/decrease in non-current assets held for sale	–	0.9
(Increase)/decrease in inventories, net	(14.7)	31.7
Increase/(decrease) in accounts payable trade and other accounts payable	(50.0)	56.9
Increase/(decrease) in provisions	(8.6)	15.9
Increase/(decrease) in pensions and related liabilities	(5.4)	(5.8)
Increase/(decrease) in other liabilities	(13.1)	17.9
Increase/(decrease) in contract liabilities	(19.2)	11.9
Income taxes paid, net	(33.5)	(41.8)
Interest received	1.7	2.1
Interest paid	(10.5)	(11.1)
Net cash provided by operating activities	138.5	199.9

EUR million	2020	2019
Cash flows from investing activities		
(Increase)/decrease in short-term investments	0.4	(0.1)
Additions to and prepayments on intangible assets	(24.7)	(32.6)
Additions to and prepayments on property, plant and equipment	(72.8)	(77.7)
Capital increase in and founding of associated companies and joint ventures	(33.9)	(0.7)
Capital increase in investments in related companies	(1.6)	(0.7)
Acquisitions, net of cash acquired	–	(21.5)
Proceeds from the sale/purchase of available-for-sale securities	0.5	0.2
Loans to associated companies	(0.5)	–
Loans to related parties	(3.5)	–
Loans to third parties	(0.7)	–
Payments received on loans to third parties	–	0.5
Proceeds from sale of investments	–	0.8
Proceeds from sale of intangible assets	–	0.2
Proceeds from sale of property, plant and equipment	0.5	1.2
Proceeds from sale of equity investments	6.3	–
Net cash used in investing activities	(130.0)	(130.4)
Free Cashflow¹	8.5	69.5
Cash flows from financing activities		
Investment in subsidiaries under common control	–	(0.7)
Proceeds from issuance of long-term debt	42.8	11.4
Repayment of long-term debt	(27.4)	(19.8)
Repayment of short-term debt from MC Familiengesellschaft mbH	–	(15.5)
Payments on lease obligations	(21.6)	(19.9)
Net (decrease)/increase in short-term debt and borrowings	(1.0)	(1.0)
Dividends paid to shareholders	(14.2)	(10.6)
Dividends paid to non-controlling interests	(5.5)	(5.6)
Net cash used in financing activities	(26.9)	(61.7)
Effect of exchange rates on cash and cash equivalents	(8.1)	2.3
Net increase/(decrease) in cash and cash equivalents	(26.5)	10.1
Cash and cash equivalents at beginning of the year	439.3	429.3
Cash and cash equivalents at end of the year	412.8	439.3

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, 2020 and 2019

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 159, 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, 2020, G+D had subsidiaries in 33 countries and 11,482 employees (for simplification purposes the term "employee/employees" represents individuals of all genders) worldwide, including 7,137 outside Germany.

The consolidated financial statements were approved by the Management Board on March 22, 2021.

B Basis of Presentation

The consolidated financial statements as of December 31, 2020 have been prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the EU.

MC Familiengesellschaft mbH was founded in 2012. MC Familiengesellschaft mbH became the Group parent company and prepared statutory consolidated financial statements in accordance with IFRS as of December 31, 2020.

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 20 domestic and 53 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 and in E-SEEK Inc., San Diego at each level, management has determined that G+D controls these companies. 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, and in E-SEEK Inc., San Diego. Additionally, seven 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 accompanying 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, 2020 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	Rates – December 31, 2020		Rates – December 31, 2019	
	Average	Closing	Average	Closing
US dollar – USD	1.1412	1.2281	1.1196	1.1189
Australian dollar – AUD	1.6558	1.6025	1.6106	1.5992
British pound – GBP	0.8893	0.9031	0.8773	0.8521
Canadian dollar – CAD	1.5295	1.5701	1.4857	1.4621
Chinese renminbi – RMB	7.8707	8.0134	7.7340	7.8175
Swedish krona – SEK	10.4897	10.0568	10.5858	10.4400

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 and are accounted for separately as hedging costs in the income statement. 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 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 is 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.

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.

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 relating 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 derivative 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)

In 2020, no new hedging relations using Fair Value Hedge Accounting were launched. All existing hedging relationships either expired or were prematurely dissolved. As of the December 31, 2020 reporting date, there was no existing hedging relation (prior year EUR 55.0 million).

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.

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.

Accounts receivable trade and other receivables, net

Accounts receivable trade and other receivables, 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 is at amortized cost. The valuation is based on the business model in which accounts receivable are managed and their contractual cash flow characteristics.

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 receivables 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 data. 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 selling expenses and, if significant, in a separate line item in the income statement as a result of the introduction 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.

Held-to-collect and sell securities comprise shares in investment funds which serve as insolvency insurance to cover the provision for pre-retirement part-time working arrangements and preferred stocks in Nxt-ID, Inc. In addition, equity instruments also include investments in other related parties. These include the investments in IDnow GmbH with 7.0 % of the shares, Verimi GmbH with 5.9 % of the shares, Metaco SA with 3.9 % of shares and Brighter AI Technologies GmbH with 4.9 % 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 and common stocks in Nxt-ID, Inc. 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.

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" for additional related disclosures.

The spread of the coronavirus has been observed since January 2020. The pandemic faced G+D with new challenges.

In connection with Covid-19, G+D implemented a centrally controlled action committee whose target was overviewing and managing of the unfavorable business and liquidity trends as well as the local employee health management. Thus allowing a timely response to changes in local conditions. Within the scope of the Covid-19 monitoring, extensive countermeasures were identified and implemented resulting in short-term cost savings and reductions or rather postponing of investments in order to secure the Group's liquidity. In addition, the Group's broadened its liquidity basis via two longer term KfW loans.

Order intake und order backlog developed positively and showed growth in 2020 compared to the prior year. Despite the Covid-19 pandemic, sales and EBIT were nearly in line with the prior year. As a security company, G+D is considered as system relevant so that temporary plant or location shutdowns were generally limited compared to the rest of the industry. In 2020, G+D was able to continue its growth strategy in promising business fields.

The pandemic will continue to dominate 2021 as well. For 2021, slightly increased financial results are expected compared to 2020. Management expects that the long-term growth strategy will be sustained by making use of attractive purchase opportunities and does not anticipate a slowdown.

It should be pointed out that the actual financial impact resulting from the pandemic may deviate from the expectations pertaining to projected future results.

In addition, refer to the corresponding explanations in the Group management report.

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, 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 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	2–23
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 distinguish 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.

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 reliably 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 number of further announcements. The recently implemented standards, as well as those yet to be implemented, have had no major impact on the consolidated financial statements of G+D or will not have a major impact on the consolidated financial statements of G+D.

T New and Changed Accounting Pronouncements

A series of standards and interpretations were passed that are valid from January 1, 2021 to 2023 but that are not expected to have a significant effect on the consolidated financial statements.

2 Financial Assets

Financial assets are comprised of the following as of December 31, 2020 and 2019:

EUR million	Dec 31, 2020	Dec 31, 2019
Current		
Short-term investments (> 3 months and < 1 year)	0.5	1.0
Trading securities	75.1	68.8
Investment securities	9.3	10.0
Derivative financial instruments	5.0	7.4
Loans to third parties	–	0.5
Loans receivable from related parties	3.5	–
	93.4	87.7
Non-current		
Cash surrender value of reinsurance	19.8	20.3
Loans receivable from related parties	0.7	–
Loans receivable from associated companies	2.1	1.6
Loans to third parties	0.4	–
Investment securities	1.9	1.8
	24.9	23.7

Investment securities have been recorded at fair value in the amount of EUR 11.2 million as of December 31, 2020 and EUR 11.8 million as of December 31, 2019. 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, 2020 and 2019:

EUR million	Dec 31, 2020	Dec 31, 2019
Current		
Accounts receivable trade	465.0	489.7
Accounts receivable from joint ventures and associated companies	0.6	1.8
Accounts receivable from related parties	0.8	1.0
Accounts receivable from shareholders	0.1	–
Other	19.2	17.1
Prepayments	129.9	150.2
	615.6	659.8
Allowance for doubtful accounts	(33.0)	(15.2)
	582.6	644.6
Non-current		
Accounts receivable trade	8.5	13.4
Prepayments on property, plant and equipment	2.6	7.0
Prepayments on intangible assets	0.8	–
	11.9	20.4

Aging structure of accounts receivable trade and other accounts receivable (excluding prepayments) as of December 31, 2020:

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	347.6	47.2	18.5	19.9	17.1	43.9	494.2
Less allowance for doubtful accounts	(0.1)	–	(0.8)	(0.2)	(0.3)	(31.6)	(33.0)
Accounts receivable, net	347.5	47.2	17.7	19.7	16.8	12.3	461.2
Average credit losses in %	–	–	4.3	1.0	1.8	72.0	6.7

Aging structure of accounts receivable trade and other accounts receivable (excluding prepayments) as of December 31, 2019:

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	344.3	64.8	26.8	17.7	24.1	45.3	523.0
Less allowance for doubtful accounts	(0.1)	–	–	(0.2)	(1.0)	(13.9)	(15.2)
Accounts receivable, net	344.2	64.8	26.8	17.5	23.1	31.4	507.8
Average credit losses in %	–	–	–	1.1	4.1	30.7	2.9

The development of the specific allowances and allowances for expected credit losses for accounts receivable trade and other receivables is as follows:

EUR million	2020			2019		
	Specific allowance	Collective allowance	Total	Specific allowance	Collective allowance	Total
January 1	11.4	3.8	15.2	6.9	2.1	9.0
Changes in consolidation structure	(0.8)	–	(0.8)	–	–	–
Additions (through profit or loss)	21.0	1.7	22.7	7.1	1.8	8.9
Recoveries (through profit or loss)	(2.9)	(0.4)	(3.3)	(1.9)	(0.1)	(2.0)
Utilization	(0.5)	–	(0.5)	(0.7)	–	(0.7)
Foreign currency effects	(0.3)	–	(0.3)	–	–	–
December 31	27.9	5.1	33.0	11.4	3.8	15.2

Specific allowances for doubtful accounts relate to several customers that disclosed that they would not be able to settle the outstanding balances due to their economic circumstances.

Accounts receivable trade and other receivables which have neither been provided for nor are past due as of the balance sheet date amounted to EUR 347.5 million and EUR 344.2 million as of December 31, 2020 and 2019. G+D anticipates that the full amount of accounts receivable which have neither been provided for 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. A common investment budget was established for the construction of the factory. The Group bears 60.0% of the budget and the contract partner 40.0%. The major tasks of the Group are the initial planning of the factory, the procurement of the machinery required, the construction of the production plant, as well as the cash funding (construction phase). The Group is responsible for the business operations for a period of ten years (with a possibility of extension for another five years), whereas the contractual partners are entitled to the earnings before interest, taxes, depreciation and amortization (EBITDA) of the factory in proportion to their investment shares (60/40) to be distributed on a yearly basis. The contract partner has guaranteed a minimum order quantity of identification cards and passports for each year of the operational phase.

The Group is responsible for maintaining the operational readiness of the factory during the operational phase. The ownership of the factory is transferred to the grantor after the termination of the operational period.

The service concession arrangement is categorized as a “financial asset model”.

In 2015, a cash payment of EUR 2.7 million was made within the scope of the construction phase which was recorded as deferred charges in accounts receivable trade and other accounts receivable. As this cash payment has not been utilized yet, these remain unchanged within deferred charges as of December 31, 2020.

The selection process for suitable land was completed and decided at the end of 2017. In 2018 and 2019, G+D continuously rendered services for the construction of the passport factory. The construction of the passport factory was completed in 2019, while the construction of the card factory should take place in 2021. Accounts receivable in the amount of EUR 11.9 million and EUR 11.1 million were recorded as non-current contract assets as of December 31, 2020 and 2019, since the revenues cannot be realized until the operational phase.

In fiscal year 2020, 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, 2020 and 2019:

EUR million	Dec 31, 2020	Dec 31, 2019
Raw materials	116.0	96.1
Work in process	113.3	120.3
Finished goods	20.8	20.0
Merchandise	29.3	32.6
Spare parts, modules, sensors – Currency Management Solutions	61.6	70.6
	341.0	339.6

In fiscal years 2020 and 2019, write-downs on inventory amounted to EUR 28.9 million and EUR 37.0 million, respectively.

The carrying value of inventory which serves as collateral for financial liabilities (see Note 13 “Financial Liabilities”) amounted to EUR 0.0 million as of December 31, 2020 and 2019, respectively.

5 Other Current Assets

EUR million	Dec 31, 2020	Dec 31, 2019
Taxes receivable (other than income taxes)	24.8	32.1
Restricted cash	9.7	9.4
Other	3.6	6.5
	38.1	48.0

6 Investments

Investments include the following:

EUR million	Dec 31, 2020	Dec 31, 2019
Investments accounted for under the equity method	43.8	16.2
Investments in other related parties	5.5	8.9
	49.3	25.1

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	
Shenzen Giesecke & Devrient Currency Automation Systems Co. Ltd., Shenzhen	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	
Build38 GmbH, Munich	38.0 %
Netcetera Group AG, Zürich	30.0 %
Emirates German Security Printing L.L.C., Abu Dhabi	29.4 %
Netset Global Solutions d.o.o., Belgrad	24.0 %

Joint Ventures

Shenzhen 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

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 September 18, 2020, G+D acquired 30.0 % of the shares in Netcetera Group AG. Netcetera Group AG is engaged in IT related services as well as in the distribution of products of the IT business.

Emirates German Security Printing L.L.C. merchandises and sells security devices in the United Arab Emirates and other states of the Arabian Peninsula.

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.

Effective March 11, 2020, G+D sold the investment in Hansol Secure Co. Ltd., Seoul, Korea. The net gain from the sale is included within share in earnings from equity investments in the income statement.

Investments in other related parties

G+D owns 5.9 % of the shares in Verimi GmbH, Frankfurt am Main, 7.0 % of the shares in IDnow GmbH, Munich, 4.9 % of the shares in Brighter AI Technologies GmbH, Berlin and 3,9 % of the shares in Metaco SA, Lausanne, Switzerland. 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		Associated company			
	Shenzhen Giesecke & Devrient Currency Automation Systems Co. Ltd.		Hansol Secure Co., Ltd. ¹		Netcetera Group AG ²	
	2020	2019	2020	2019	2020	2019
Revenues	19.2	24.7	2.0	10.2	–	–
Profit from continuing operations	4.3	4.6	–	1.0	–	–
thereof depreciation and amortization	(0.8)	(1.0)	(0.1)	–	–	–
thereof interest income/(expense)	(0.1)	(0.1)	–	–	–	–
thereof income taxes	(1.1)	(1.4)	–	–	–	–
Other comprehensive income	(0.3)	0.1	(0.8)	(0.1)	–	–
Total comprehensive income	4.0	4.7	(0.8)	0.9	–	–
Group's share of total comprehensive income	2.0	2.3	(0.1)	0.2	–	–
Continuation of purchase price allocation (incl. CTA)	–	–	(0.1)	(0.2)	–	–
Elimination of intercompany profits	0.4	–	–	–	–	–
Group's share of total comprehensive income	2.4	2.3	(0.2)	–	–	–
Dividends received during the year	(2.1)	(2.1)	–	–	–	–
Current assets	13.4	15.5	16.6	16.6	22.7	–
thereof cash and cash equivalents	4.4	6.8	1.8	1.4	14.9	–
Non-current assets	4.9	5.8	3.1	2.9	6.2	–
Current liabilities	(6.0)	(8.3)	(2.5)	(1.4)	(9.5)	–
thereof current financial liabilities	–	–	–	–	(0.6)	–
Non-current liabilities	(0.4)	(1.1)	(0.1)	(0.1)	(2.1)	–
thereof non-current financial liabilities	–	–	–	–	(0.4)	–
Net assets	11.9	11.9	17.1	18.0	17.3	–
Group's share of net assets	5.9	6.0	2.8	2.9	5.2	–
Elimination of intercompany profits	(0.3)	(0.7)	–	–	–	–
Assets from purchase price allocation (incl. CTA)	–	–	–	3.0	26.7	–
Carrying amount of interest in joint venture at year end	5.6	5.3	–	5.9	31.9	–

¹ Effective March 11, 2020, G+D sold the investment in Hansol Secure Co., Ltd.

The balances for fiscal year 2020 therefore refer to the period January 1, 2020 to March 11, 2020.

The book value of the investment was written off at the disposal date and consequently amounts to EUR 0.

² Due to immateriality, the income statement for the 3-month period has been excluded. The balance sheet values reflect the balance sheet at acquisition date as it is assessed that there will not be material changes as of December 31.

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, 2020	Dec 31, 2019
Carrying amount of interest in non-material joint ventures	4.3	3.1
Share of		
Capital increase	1.4	0.7
Gain/(Loss) from continuing operations	–	2.0
Other comprehensive income	(0.2)	0.2
Total comprehensive income	(0.2)	2.2

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, 2020	Dec 31, 2019
Carrying amount of interest in non-material associated companies	2.1	1.9
Share of		
Gain/(Loss) from continuing operations	0.2	0.5
Dividends received during the year	–	(0.2)
Total comprehensive income	0.2	0.3

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, 2019	30.2	107.5	170.0	59.2	366.9
Additions	1.2	12.9	18.8	–	32.9
Transfers	–	3.3	(3.6)	–	(0.3)
Additions due to business combinations	7.7	4.3	0.6	9.9	22.5
Disposals	(0.2)	–	(6.2)	–	(6.4)
Foreign currency effects	0.5	0.4	0.4	(0.2)	1.1
December 31, 2019	39.4	128.4	180.0	68.9	416.7
January 1, 2020	39.4	128.4	180.0	68.9	416.7
Additions	0.9	12.7	9.9	–	23.5
Transfers	0.1	–	0.3	–	0.4
Disposals due to changes in consolidation structure	(0.8)	–	(0.3)	–	(1.1)
Disposals	–	–	(0.9)	–	(0.9)
Foreign currency effects	(1.2)	0.9	(1.7)	0.8	(1.2)
December 31, 2020	38.4	142.0	187.3	69.7	437.4

The additions in 2020 and 2019 comprise self-constructed intangible assets in the amount of EUR 15.6 million and EUR 21.2 million, respectively.

EUR million	Customer base/ Rights	Development costs/ Technology	Software	Goodwill	Total
Accumulated amortization					
January 1, 2019	24.1	73.0	117.9	2.0	217.0
Additions	2.6	11.8	11.9	–	26.3
Impairment losses	0.6	0.9	–	–	1.5
Disposals	(0.2)	–	(6.0)	–	(6.2)
Foreign currency effects	0.5	0.4	0.2	(0.3)	0.8
December 31, 2019	27.6	86.1	124.0	1.7	239.4
January 1, 2020	27.6	86.1	124.0	1.7	239.4
Additions	2.4	11.2	14.8	–	28.4
Disposals due to changes in consolidation structure	(0.7)	–	(0.3)	–	(1.0)
Impairment losses	0.1	–	4.5	–	4.6
Disposals	–	–	(0.9)	–	(0.9)
Foreign currency effects	(1.1)	0.9	(1.0)	–	(1.2)
December 31, 2020	28.3	98.2	141.1	1.7	269.3
Carrying value					
January 1, 2019	6.1	34.5	52.1	57.2	149.9
December 31, 2019	11.8	42.3	56.0	67.2	177.3
December 31, 2020	10.1	43.8	46.2	68.0	168.1

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

EUR million	2020	2019
Cost of goods sold	19.1	16.9
Selling expenses	1.1	1.0
Research and development expenses	0.2	0.2
General and administrative expenses	8.0	8.2
	28.4	26.3

In fiscal year 2020, impairment losses in the amount of EUR 4.5 million were recorded on software within general and administration expenses. In the prior year, EUR 1.5 million impairment losses were recorded on customer base and capitalized development costs within cost of goods sold.

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 Transtrack International 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 5.2 million (prior year EUR 5.2 million) was assigned to the "secunet" CGU. In fiscal year 2019, there was an increase in goodwill in the amount of EUR 1.2 million. This increase results from additional shares acquired in connection with a share deal in the former associated company finally safe 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 3.6 million (prior year 3.9 EUR million) recognized within the acquisition of the companies were allocated to the "Veridos" CGU. In fiscal year 2019, there was an increase in goodwill from E-SEEK Inc. in the amount EUR 1.3 million. This results from the revaluation of the call option through the additional acquisition of the remaining 25.0% of the shares. Due to strengthened convergence of the previously separated hardware- and solutions businesses to highly integrated customer solutions and uniform goods and services, the respective 3S businesses were reallocated to the MS divisions. In the prior year, goodwill from Giesecke+Devrient Mobile Security Sweden AB in the amount of EUR 29.1 million (prior year EUR 28.0 million) was assigned to the business sector "Mobile Security" and thereby to the divisional CGUs "Financial Solutions", "Connectivity & Devices" and "Cyber Security". The former three divisions were merged into two divisions "Secure Transactions + Services" and "Trusted Connected Devices". Management steers the goodwill on the level of these "CGUs". The reassignment of the goodwill is based on the fair value ratio of the transferred CGUs in the amount of EUR 8.3 million to the CGU "Secure Transactions + Services" and in the amount of EUR 20.8 million to the CGU "Trusted Connected Devices". 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".

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 "Veridos" were determined using the planning assumptions of an average EBITDA margin of 10.9% during the planning period and perpetual growth rate of 0.0%. The cash flows for the CGUs "Secure Transactions + Services" und "Trusted Connected Devices" were determined using the planning premises of average EBITDA margins of 12.3% and 11.4% during the planning period and perpetual growth rate of 1.0%. The cash flows for the CGU "Currency Management Solutions" were determined using the planning premises of average EBITDA margin of 11.5% during the planning period and perpetual growth rate of 0.0%.

In discounting the cash flows of the "secunet" CGU, pre-tax interest rate of 10.5% was used in 2020 and 2019. For the CGU "Currency Management Solutions", a pre-tax interest rate of 10.7% was applied in 2020 and 2019. In discounting the cash flows of the "Veridos" CGU, a pre-tax interest rate of 10.3% was applied in 2020 and 2019. In discounting the cash flows of the "Secure Transactions + Services" and "Trusted Connected Devices" CGUs, a pre-tax interest rate of 11.4% was used in 2020 and 2019. Impairments on goodwill were not recorded in fiscal years 2020 and 2019.

A sensitivity analysis was carried out for the goodwill in the CGU "Veridos". An increase in the interest rate from 10.3% to 15.3% (prior year from 10.3% to 16.2%) ceteris paribus as of December 31, 2020 would result in a first time impairment loss. A reduction in the cash flows for the terminal value ceteris paribus from EUR 21.7 million to EUR 10.0 million (prior year from EUR 25.2 million to EUR 10.9 million) as of December 31, 2020 would result in an impairment loss. The headroom amounted to EUR 69.6 million as of December 31, 2020.

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 11.4% to 16.3% (prior year from 11.4% to 13.9% for "Financial Solutions") for "Secure Transactions + Services" as of December 31, 2020, from 11.4% to 13.7% (prior year from 11.4% to 12.8% for "Connectivity & Devices" and prior year from 11.4% to 13.1% for "Cyber Security") 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 40.3 million to EUR 18.7 million (prior year from EUR 32.3 million to EUR 21.6 million for "Financial Solutions") for "Secure Transactions + Services" as of December 31, 2020, from EUR 21.7 million to EUR 15.4 million (prior year from EUR 16.5 million to EUR 13.1 million for "Connectivity & Devices" and prior year from EUR 6.8 million to EUR 5.2 million for "Cyber Security") for "Trusted Connected Devices" would result in an impairment loss. The headroom amounted to EUR 157.2 as of December 31, 2020.

No intangible assets serve as collateral for financial liabilities (see Note 13 "Financial Liabilities") as of December 31, 2020 and 2019, respectively.

8 Property, Plant and Equipment

A summary of the activity for property, plant and equipment 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, 2019	435.8	754.1	207.7	20.3	1,417.9
Impact of first time adoption of IFRS 16	78.2	1.1	6.3	–	85.6
Additions	12.0	19.9	23.3	25.7	80.9
Transfers	0.4	12.5	–	(8.3)	4.6
Additions due to changes in consolidation structure	0.2	1.0	–	–	1.2
Disposals	(2.4)	(16.2)	(13.1)	(0.1)	(31.8)
Foreign currency effects	1.6	4.6	1.7	(0.1)	7.8
December 31, 2019	525.8	777.0	225.9	37.5	1,566.2
January 1, 2020	525.8	777.0	225.9	37.5	1,566.2
Additions	35.2	33.6	20.7	11.3	100.8
Transfers	31.9	32.1	–	(33.5)	30.5
Additions due to changes in consolidation structure	–	(0.4)	(9.2)	–	(9.6)
Disposals	(5.1)	(11.1)	(8.7)	–	(24.9)
Foreign currency effects	(7.3)	(18.3)	(4.1)	(0.3)	(30.0)
December 31, 2020	580.5	812.9	224.6	15.0	1,633.0

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 depreciation					
January 1, 2019	232.3	572.2	150.3	–	954.8
Additions	28.2	48.0	25.3	–	101.5
Transfers	0.1	0.1	(0.2)	–	–
Impairment losses	0.1	0.5	–	–	0.6
Disposals	(1.7)	(14.8)	(12.7)	–	(29.2)
Foreign currency effects	0.7	3.6	1.3	–	5.6
December 31, 2019	259.7	609.6	164.0	–	1,033.3
January 1, 2020	259.7	609.6	164.0	–	1,033.3
Additions	31.2	45.4	23.2	–	99.8
Transfers	17.5	–	(0.2)	–	17.3
Additions due to changes in consolidation structure	–	(0.4)	(8.6)	–	(9.0)
Impairment losses	2.5	–	–	–	2.5
Disposals	(0.6)	(10.6)	(8.3)	–	(19.5)
Foreign currency effects	(3.7)	(13.6)	(3.2)	–	(20.5)
December 31, 2020	306.6	630.4	166.9	–	1,103.9
Carrying value					
January 1, 2019	203.5	181.9	57.4	20.3	463.1
December 31, 2019	266.1	167.4	61.9	37.5	532.9
December 31, 2020	273.9	182.5	57.7	15.0	529.1

In fiscal years 2020 and 2019, Giesecke+Devrient recorded impairments amounting to EUR 2.5 million (previous year EUR 0.5 million) on property, plant and equipment in cost of goods. In 2020, impairments amounting to EUR 0.0 million were recorded in general and administrative expenses (previous year EUR 0.1 million).

In fiscal year 2018, land and buildings with a book value of EUR 6.5 million were reclassified from property, plant and equipment to non-current assets held for sale. The reclassification was based on a management decision to sell these assets. An active program to locate a buyer was initiated by the end of the fiscal year 2018. In fiscal year 2019, the sale of the property, including the buildings, was actively pursued but not yet completed. G+D has reacted to the changed market situation and reclassified them to property, plant and equipment.

The carrying value of property, plant and equipment which serves as collateral for financial liabilities (see Note 13 "Financial Liabilities") amounted to EUR 6.9 million and EUR 6.9 million as of December 31, 2020 and 2019, respectively.

Commitments for the purchase of property, plant and equipment amounted to EUR 18.8 million and EUR 30.0 million as of December 31, 2020 and 2019, 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 ¹	Other plant and office equipment	Total
January 1, 2019	78.2	3.8	6.3	88.3
Additions	8.8	1.0	2.1	11.9
Disposals	(0.1)	–	–	(0.1)
Additions due to changes in consolidation structure	0.2	–	–	0.2
Depreciation	(16.9)	(1.9)	(3.0)	(21.8)
Foreign currency effects	0.2	0.2	–	0.4
December 31, 2019	70.4	3.1	5.4	78.9
January 1, 2020	70.4	3.1	5.4	78.9
Additions	28.4	0.5	2.8	31.7
Disposals	(4.3)	–	(0.3)	(4.6)
Depreciation	(18.5)	(1.6)	(3.1)	(23.2)
Foreign currency effects	(2.3)	(0.2)	(0.1)	(2.6)
December 31, 2020	73.7	1.8	4.7	80.2

¹ The balance as of January 1, 2019 includes balances from finance leases as of December 31, 2018 in the amount of EUR 2.7 million.

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	2020	2019
Depreciation on right-of-use assets	(23.2)	(21.8)
Interest expense from lease obligations	(1.7)	(2.0)
Expenses for short-term leases	(2.0)	(4.3)
Expenses from leases for low value assets	(0.5)	(0.9)
	(27.4)	(29.0)

The expenses for short-term leases include expenses to other related parties in the amount of EUR 0.0 million (prior year EUR 1.4 million).

The total cash outflows for leases in 2020 amounted to EUR 25.8 million (prior year EUR 27.1 million).

The future cash outflows from lease payments amount to:

EUR million	
Less than one year	21.2
Between one and five years	50.8
More than five years	14.5
Total minimum lease payments	86.5
Less amount representing interest	(4.1)
Present value of net minimum lease payments	82.4

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

EUR million	
Less than one year	19.9
Between one and five years	48.4
More than five years	14.1
Present value of net minimum lease payments	82.4

Potential future cash outflows in the amount of EUR 21.2 million EUR (prior year EUR 14.0 million) were not included in the lease obligations as it is not reasonably certain that the leases will be extended or not cancelled.

Future cash outflows for leases that G+D is committed to but that have not started yet amount to EUR 0.0 million (prior year EUR 3.3 million).

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, 2020	Dec 31, 2019
Current		
Accounts payable trade due to third parties	374.7	428.9
Accounts payable due to related parties	0.1	–
Accounts payable due to associated companies and joint ventures	0.7	0.5
Other similar liabilities	2.4	2.8
	377.9	432.2

11 Provisions

EUR million	Warranties	Personnel-related costs	Licenses and patent infringements	Onerous contracts	Restructuring	Other	Total
January 1, 2020	58.3	15.1	3.7	13.7	3.1	22.3	116.2
Additions	13.9	6.6	0.3	8.1	2.6	11.9	43.4
Transfers	–	–	–	–	–	(3.6)	(3.6)
Reductions due to changes in consolidation structure	(0.1)	–	–	(0.6)	–	–	(0.7)
Interest component	–	0.1	–	–	–	–	0.1
Utilization	(5.2)	(5.5)	(2.0)	(5.4)	(1.5)	(4.3)	(23.9)
Release	(10.7)	(0.3)	(0.4)	(6.4)	(0.9)	(5.8)	(24.5)
Foreign currency effects	(0.7)	–	–	–	–	(0.7)	(1.4)
December 31, 2020	55.5	16.0	1.6	9.4	3.3	19.8	105.6
thereof current	55.5	9.5	1.6	9.4	3.3	14.2	93.5
thereof non-current	–	6.5	–	–	–	5.6	12.1

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 is included in interest expense.

Provisions for restructuring mainly consist of provisions relating to site closures abroad.

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

12 Other Current Liabilities

EUR million	Dec 31, 2020	Dec 31, 2019
Payroll and social security taxes	93.4	109.3
Sales and other taxes	29.3	22.5
Other liabilities	13.4	15.7
	136.1	147.5

13 Financial Liabilities

Financial liabilities consist of the following as of December 31, 2020 and 2019:

EUR million	Dec 31, 2020	Dec 31, 2019
Current		
Short-term borrowings due to financial institutions	5.5	7.1
Short-term debt due to other third parties	–	11.2
Current portion of debt due to financial institutions	13.4	20.8
Current portion of debt due to Giesecke+Devrient Foundation	–	16.4
Accrued interest on debt to financial institutions	1.7	1.8
Derivative financial instruments	0.5	5.4
Total current portion of financial liabilities	21.1	62.7
Non-current		
Unsecured notes payable to financial institutions, interest rates 0.22 % to 2.26 %, due through July 29, 2029	429.0	415.3
Unsecured notes payable to Giesecke+Devrient Foundation, interest rate 1.20 %, due through May 10, 2025	21.0	21.0
Unsecured notes payable to other third parties, interest rates 1.25 % to 3.00 %, due through September 30, 2026	27.1	12.6
Mortgage notes payable to financial institutions, interest rate 1.55 %, due through March 31, 2023	4.8	6.9
Total	481.9	455.8
Less current portion of non-current financial liabilities	(13.4)	(37.2)
Total non-current portion of financial liabilities	468.5	418.6
Total financial liabilities	489.6	481.3

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

EUR million	
2021	21.1
2022	136.2
2023	86.6
2024	18.0
2025	107.7
thereafter	120.0
	489.6

A summary of the activity for financial liabilities is as follows as of December 31, 2020 and 2019:

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, 2019	464.1	36.7	6.4	507.2	88.5	595.7
Payments during the period	(19.9)	(22.0)	–	(41.9)	(19.9)	(61.8)
New borrowings	11.4	5.4	–	16.8	–	16.8
Total change in cash flow from financing activities	(8.5)	(16.6)	–	(25.1)	(19.9)	(45.0)
New lease contracts	–	–	–	–	11.7	11.7
Termination of lease contracts	–	–	–	–	(0.1)	(0.1)
Acquisitions	–	–	–	–	0.2	0.2
Other changes	–	(0.1)	–	(0.1)	–	(0.1)
Fair value changes	–	–	(1.0)	(1.0)	–	(1.0)
Currency effects	0.2	0.1	–	0.3	0.5	0.8
Carrying value January 1, 2019	455.8	20.1	5.4	481.3	80.9	562.2
Fair value December 31, 2019	463.6	20.1	5.4	489.1	80.9	570.0
Carrying value January 1, 2020	455.8	20.1	5.4	481.3	80.9	562.2
Repayments of the period	(27.4)	(4.2)	–	(31.6)	(21.6)	(53.2)
New borrowings	42.8	3.1	–	45.9	–	45.9
Total change in cash flow from financing activities	15.4	(1.1)	–	14.3	(21.6)	(7.3)
New lease contracts	–	–	–	–	30.7	30.7
Termination of lease contracts	–	–	–	–	(4.9)	(4.9)
Other changes	–	(0.1)	–	(0.1)	–	(0.1)
Fair value changes	–	–	(4.9)	(4.9)	–	(4.9)
Transfers	11.2	(11.2)	–	–	–	–
Currency effects	(0.5)	(0.5)	–	(1.0)	(2.7)	(3.7)
Carrying value December 31, 2020	481.9	7.2	0.5	489.6	82.4	572.0
Fair value December 31, 2020	470.2	7.2	0.5	477.9	82.4	560.3

¹ For additional information regarding lease obligations refer to Note 9 "Leasing".
The book value as of January 1, 2019 includes additional lease liabilities in the amount of EUR 85.6 million due to the introduction of IFRS 16.

Lines of credit

Giesecke+Devrient maintains global credit facilities in the amount of EUR 792.6 million (prior year EUR 786.9 million). As of December 31, 2020, G+D used EUR 310.8 million (prior year EUR 355.2 million) of these facilities for bank guarantees, EUR 9.5 million (prior year EUR 7.1 million) for credit orders and EUR 0.0 million (prior year EUR 11.2 million) due to other third parties. Thus, EUR 472.3 million (prior year EUR 413.4 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. This 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, 2020	Dec 31, 2019
Pension benefits	707.4	665.7
Other postretirement benefits	3.7	2.5
Other	0.8	0.7
Total accrual for pension and related liabilities	711.9	668.9

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, 2020	Dec 31, 2019	Dec 31, 2020	Dec 31, 2019
Change in defined benefit obligation				
Defined benefit obligation at beginning of year	681.8	607.6	2.5	2.1
Foreign currency exchange rate differences	–	0.8	(0.3)	(0.1)
Service cost	8.4	7.8	0.3	0.3
Interest cost	9.7	13.1	0.2	0.1
Past service cost	–	0.2	0.4	(0.1)
Plan amendments	–	0.1	0.4	(0.1)
Plan participants' contributions	–	0.1	–	0.1
Additions/(disposals) due to changes in consolidation structure	(10.1)	0.7	–	–
Actuarial (gains)/losses	41.1	74.7	0.8	0.3
due to demographic parameter changes	0.2	(0.5)	0.1	–
due to financial parameter changes	38.1	75.8	0.7	0.2
due to experience adjustments	2.8	(0.7)	0.1	–
Benefits paid	(14.5)	(23.2)	(0.2)	(0.2)
Defined benefit obligation at end of year	716.4	681.7	3.7	2.5
Change in plan assets				
Fair value of plan assets at beginning of year	16.1	24.0	–	–
Foreign currency exchange rate differences	0.2	0.4	–	–
Actual return on plan assets (excluding expected interest income)	–	0.1	–	–
Expected interest income	–	0.4	–	–
Additions/(disposals) due to changes in consolidation structure	(7.7)	–	–	–
Employer contributions	0.4	1.2	–	–
Plan participants' contributions	–	0.1	–	–
Benefits paid	–	(10.2)	–	–
Fair value of plan assets at end of year	9.0	16.0	–	–
Net amount recognized at end of year	707.4	665.7	3.7	2.5

Net liability recorded

The development of the net liability recorded in fiscal years ended December 31, 2020 and 2019 is as follows:

EUR million	Pension benefit plans		Other postretirement benefit plans	
	Dec 31, 2020	Dec 31, 2019	Dec 31, 2020	Dec 31, 2019
Net liability at beginning of year	665.7	583.6	2.5	2.1
Service cost	8.4	7.8	0.3	0.3
Past service cost	–	0.2	0.4	(0.1)
Plan amendments	–	0.1	0.4	(0.1)
Interest expense/(income)	9.7	12.7	0.2	0.1
Additions/(disposals) due to changes in consolidation structure	(2.4)	0.7	–	–
Actuarial (gains)/losses	41.1	74.7	0.8	0.3
due to demographic parameter changes	0.2	(0.5)	0.1	–
due to financial parameter changes	38.1	75.8	0.7	0.2
due to experience adjustments	2.8	(0.7)	0.1	–
Actual return on plan assets (excluding expected interest income)	–	(0.1)	–	–
Benefits paid (excluding plan settlements)	(14.5)	(13.0)	(0.2)	(0.2)
Employer contributions	(0.4)	(1.2)	–	–
Plan participants' contributions	–	–	–	0.1
Foreign currency exchange rate differences	(0.2)	0.4	(0.3)	(0.1)
Net liability at end of year	707.4	665.7	3.7	2.5

Plan assets

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

information as % of plan assets	Dec 31, 2020	Dec 31, 2019
Cash surrender value of reinsurance	93.2	49.6
Equity securities	–	13.5
Debt instruments	–	20.6
Real estate funds	–	10.3
Money market funds	0.4	0.1
Other	6.4	5.9
	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.

There are no additions to plan assets planned for fiscal year 2021 (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 %):

in %	Pension benefit plans		Other postretirement benefit plans	
	Dec 31, 2020	Dec 31, 2019	Dec 31, 2020	Dec 31, 2019
Discount rate/expected return on plan assets	1.2	1.4	5.8	5.5
Rate of compensation increase	2.2	2.2	6.5	5.1
Rate of pension progression	1.4	1.4	–	–
Mortality tables				
Germany	RT Heubeck 2018 G	RT Heubeck 2018 G		
Canada		2014 CPM table with mortality improvement scale CPM-B		
Switzerland		BVG2015.GT		

The rate of the expected long-term return on plan assets corresponds with the discount rate. The weighted average term for pension obligations amounts to 19.1 years (prior year 18.9 years) and 10.8 years for other benefit obligations (prior year 4.3 years).

Sensitivity analysis

The results of the sensitivity analyses for the significant actuarial assumptions for pension obligations as of December 31, 2020 and December 31, 2019 are as follows:

EUR million	Dec 31, 2020	Dec 31, 2019
Discount rate + 50 basis points	(83.4)	(71.0)
Discount rate – 50 basis points	98.0	84.6
Rate of pension progression + 25 basis points	35.2	33.2
Rate of pension progression – 25 basis points	(34.2)	(31.7)
Increase of 2 years in life expectancy	73.1	76.1

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 28.5 million and EUR 28.8 million were recorded in 2020 and 2019, respectively. Payments amounting to EUR 3.4 million and EUR 1.7 million were made for the newly established company pension plans in 2020 and 2019, respectively.

15 Revenue

Revenue is comprised of the following categories:

EUR million	2020	2019
Sales of goods	1,870.9	1,995.9
Rendering of services	386.9	407.3
Royalties	55.0	43.8
	2,312.8	2,447.0

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

EUR million	2020	2019
Currency Technology	1,034.7	1,132.4
Banknote Solutions	576.4	571.9
Currency Management Solutions	458.3	560.5
Mobile Security	785.6	876.5
Veridos	227.5	231.6
secunet	285.6	226.9
Group internal	(20.6)	(20.4)
	2,312.8	2,447.0

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	2020	2019
Income relating to other periods	29.2	19.6
Expenses relating to other periods	(18.3)	(17.0)
	10.9	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) recorded in selling expenses. For the most part, expenses relating to other periods comprise tax expenses for prior recorded in income tax expense.

17 Other Financial Income, net

EUR million	2020	2019
Gains/(losses) from trading securities, net	1.9	6.3
Foreign currency exchange gains/(losses), net	(31.6)	(2.3)
Gains/(losses) from derivative financial instruments, net	7.1	3.7
Other financial income/(expenses), net	(1.2)	–
	(23.8)	7.7

The changes in net unrealized gains and losses on trading securities included in earnings during the fiscal years ending December 31, 2020 and 2019 were EUR 0.6 million and EUR 10.8 million, respectively. The net foreign currency exchange losses in 2020 include a net loss from the derecognition of the previously recorded foreign exchange effects in the amount of EUR 1.7 million recorded in equity due to the liquidation of BA International Inc., Ottawa/Ontario as well as from the sale of CI Tech Components AG, Burgdorf (refer to Note 24 "Business Combinations").

18 Interest Income and Interest Expense

EUR million	2020	2019
Interest income		
Loans and receivables	0.1	0.1
Cash and cash equivalents/short-term investments	0.6	0.8
Trading securities	0.4	0.5
Taxes receivable	0.3	0.1
Receivables from associated companies and joint ventures	0.1	–
Other	0.2	0.6
	1.7	2.1
Interest expense		
Loans and receivables	0.5	0.5
Financial liabilities and finance lease obligations	8.6	9.4
Other provisions	0.1	0.8
Provisions for pensions	9.5	12.7
Taxes payable	0.2	0.1
Other	1.0	0.2
	19.9	23.7

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

EUR million	2020	2019
Interest income		
Loans and receivables	0.2	0.1
Cash and cash equivalents/short-term investments	0.6	0.8
	0.8	0.9
Interest expense		
Loans and receivables	0.5	0.5
Financial liabilities measured at amortized cost	8.6	9.4
	9.1	9.9

19 Income Taxes

Income tax expense

Income tax expense for fiscal years 2020 and 2019 is comprised of:

EUR million	2020	2019
Current income tax		
Current year income tax expense	(25.6)	(30.3)
Income tax expense for prior periods	(16.1)	(13.0)
	(41.7)	(43.3)
Deferred income tax		
Gross expenditure from origination and reversal of temporary differences and tax loss carryforwards	1.0	13.5
Income tax expense from changes in tax rates and introduction of new taxes	(0.5)	(0.5)
Change in usability of tax loss carryforwards	(28.8)	0.3
	(28.3)	13.3
Income tax expense, net	(70.0)	(30.0)

In fiscal year 2020, 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 15.8 % and trade tax of 15.63 %, resulting in a combined tax rate of 31.43 %.

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 31.43 % and 31.47 % in 2020 and 2019, respectively.

EUR million	2020	2019
Expected income tax expense	(35.5)	(34.8)
Foreign taxation differential	9.2	14.1
Non-deductible expenses	(2.1)	(2.0)
Changes in tax rates	(0.5)	(0.5)
Tax-free income	(6.0)	(0.2)
Additions due to tax risks and tax payments (refunds) for prior years	1.0	(2.1)
Changes in tax loss carryforwards	(28.8)	0.3
Withholding taxes	(7.4)	(5.5)
Other	0.1	0.7
Actual income tax expense	(70.0)	(30.0)

The (negative) change in tax loss carryforwards is mainly the result of a correction to the international transfer prices over the last few years. An impairment was recorded on deferred tax assets attributable to tax loss carryforwards. Refer to the related disclosures in the management report.

Deferred tax assets and liabilities

The gross values of deferred tax assets and liabilities as of December 31, 2020 and 2019 are attributable to the following balance sheet line items:

EUR million	Assets		Liabilities		Net			Recorded in Other comprehensive Income	
	Dec 31, 2020	Dec 31, 2019	Dec 31, 2020	Dec 31, 2019	Dec 31, 2020	Dec 31, 2019	Change		
Financial assets	2.7	0.3	–	(6.1)	2.7	(5.8)	8.5	8.5	–
Accounts receivable trade and other receivables, net	4.4	5.1	–	(0.1)	4.4	5.0	(0.6)	(0.6)	–
Contract assets	0.1	–	(5.0)	(8.1)	(4.9)	(8.1)	3.2	3.6	(0.4)
Inventories, net	126.9	100.4	–	(0.7)	126.9	99.7	27.2	26.7	0.5
Other assets	1.2	1.2	(35.7)	(28.9)	(34.5)	(27.7)	(6.8)	(6.8)	–
Intangible assets	14.4	14.7	(23.5)	(24.3)	(9.1)	(9.6)	0.5	1.2	(0.7)
Property, plant and equipment (without Right-of-Use in 2020)	1.4	2.7	(23.4)	(21.3)	(22.0)	(18.6)	(3.4)	(3.3)	(0.1)
Right-of-Use	8.6	–	(8.3)	–	0.3	–	0.3	0.3	–
Accounts payable trade and other accounts payable	3.8	19.3	–	(0.5)	3.8	18.8	(15.0)	(14.3)	(0.7)
Contract liabilities	–	–	(0.1)	0.1	(0.1)	0.1	(0.2)	(0.2)	–
Provisions	21.8	29.4	(3.0)	(2.1)	18.8	27.3	(8.5)	(8.5)	–
Financial liabilities	0.1	0.2	–	–	0.1	0.2	(0.1)	(0.1)	–
Lease obligations	12.4	10.8	–	–	12.4	10.8	1.6	1.6	–
Deposits received/deferred income	0.2	0.6	–	–	0.2	0.6	(0.4)	(0.4)	–
Pensions and related liabilities	125.5	116.8	–	–	125.5	116.8	8.7	(2.9)	11.6
Other liabilities	1.7	1.2	(102.7)	(84.8)	(101.0)	(83.6)	(17.4)	(17.4)	–
Tax loss carryforwards	31.1	46.6	–	–	31.1	46.6	(15.5)	(15.8)	0.3
Deferred tax assets/(liabilities), gross	356.3	349.3	(201.7)	(176.8)	154.6	172.5	(17.9)	(28.4)	10.5
Set-off of tax	(192.7)	(166.3)	192.7	166.2	–	(0.1)	0.1	0.1	–
Deferred tax assets/(liabilities), net	163.6	183.0	(9.0)	(10.6)	154.6	172.4	(17.8)	(28.3)	10.5

As of December 31, 2020 net deferred tax assets in the amount of EUR 12.7 million were included based on leasing.

The changes in deferred tax assets, net included in net income or other comprehensive income for fiscal years 2020 and 2019 are included in the following summary:

EUR million	2020	2019
Deferred tax assets, net as of January 1	172.4	140.3
Changes affecting net income	(28.3)	13.2
Changes not affecting net income		
Additions due to changes in consolidation structure	–	(3.3)
Changes in net deferred tax assets recognized in other comprehensive income resulting from deferred tax assets on actuarial gains and losses	11.1	22.1
Changes in net deferred tax assets recognized in other comprehensive income resulting from deferred tax assets on foreign currency translations	(0.6)	0.1
Deferred tax assets, net as of December 31	154.6	172.4

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	2020		2019	
	Gross amount	Tax effect	Gross amount	Tax effect
Deductible temporary differences	12.1	3.7	20.0	6.4
Unused tax losses	118.8	29.1	145.8	36.8
	130.9	32.8	165.8	43.2

The unused tax losses expire as follows:

EUR million	2020		2019	
	Gross amount	Expiration date	Gross amount	Expiration date
Limited	6.4	2021–2030	8.0	2020–2029
Unlimited	112.4	–	137.8	–

Furthermore, deferred tax assets in the amount of EUR 31.1 million and EUR 46.6 million on tax loss carryforwards in the amount of EUR 110.1 million and EUR 160.7 million were recorded as of December 31, 2020 and 2019, 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, 2020, significant deferred tax assets were recorded on tax loss carryforwards by the following companies: Giesecke+Devrient GmbH, Munich, EUR 22.9 million, Giesecke+Devrient Mobile Security Sweden AB, Stockholm, EUR 2.8 million and Giesecke+Devrient Mobile Security Iberia S.A., Barcelona, EUR 2.4 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 130.9 million and EUR 165.8 million will be realized and therefore has not recognized deferred tax assets for these amounts in 2020 and 2019.

Due to the sustained positive earnings expectations in the G+D tax group in Germany, deferred tax assets in the amount of EUR 22.9 million on tax loss carryforwards and the excess of deferred tax assets in the amount of EUR 108.8 million due temporary differences were recorded although a negative tax result was achieved in the fiscal year. The negative result in fiscal year 2020 was mainly the from one-time special effects in the form of specific allowances on receivables and impairments on assets in the tax group.

Income tax on dividends

As of December 31, 2020 and 2019, 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, 2020 and 2019, the amount of these obligations was EUR 0.1 million and EUR 0.1 million, respectively.

Temporary differences relating to investments in subsidiaries for which deferred tax liabilities were not recorded amounted to EUR 0.0 million and EUR 0.0 million as of December 31, 2020 and 2019, respectively.

20 Equity

As of December 31, 2020 and 2019, the nominal value of the treasury stock amounted to EUR 4.3 million, respectively.

Unappropriated reserves amounted to EUR 414.6 million and EUR 424.7 million as of December 31, 2020 and 2019, 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, 2020 and 2019, the equity ratio amounted to 18.1 % and 18.4 %, 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, 2020 and 2019:

EUR million		Dec 31, 2020					Dec 31, 2019				
	Classification	Carrying amount	Fair value	Level 1	Level 2	Level 3	Carrying amount	Fair value	Level 1	Level 2	Level 3
Financial assets											
Loans and receivables ¹	Amortized cost	468.0	–	–	–	–	509.7	–	–	–	–
Financial assets held for trading ²											
Derivative financial assets	FVTPL	5.0	5.0	–	5.0	–	7.4	7.4	–	7.4	–
Trading securities	FVTPL	75.1	75.1	75.1	–	–	68.8	68.8	68.8	–	–
Total		80.1					76.2				
Investment securities	FVTPL	11.2	11.2	11.2	–	–	11.8	11.8	11.8	–	–
Investments in other related parties	FVOCI	5.5	5.5	–	–	5.5	8.9	8.9	–	–	8.9
Special classes											
Cash and cash equivalents ³	Amortized cost	412.8	–	–	–	–	439.3	–	–	–	–
Short-term investments	Amortized cost	0.5	–	–	–	–	1.0	–	–	–	–
Contract assets	N/A	236.6	–	–	–	–	187.0	–	–	–	–
Non-current assets held for sale	FVTPL	–	–	–	–	–	6.5	6.5	6.5	–	–
Total financial assets		978.1					1,046.9				

¹ Amount does not include prepayments in the amount of EUR 133.3 million and EUR 157.2 million as of December 31, 2020 and 2019, 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 19.7 million and EUR 20.3 million as of December 31, 2020 and 2019, respectively, as this is not included in the scope of IFRS 7.

³ Cash and cash equivalents include cash in the amount of EUR 0.1 million and EUR 0.2 million, cash in banks in the amount of EUR 408.4 million and EUR 428.5 million as well as short-term investments in the amount of EUR 4.4 million and EUR 10.7 million as of December 31, 2020 and 2019, respectively.

EUR million		Dec 31, 2020					Dec 31, 2019				
	Classification	Carrying amount	Fair value	Level 1	Level 2	Level 3	Carrying amount	Fair value	Level 1	Level 2	Level 3
Financial liabilities											
Financial liabilities measured at amortized cost											
Financial liabilities	Other financial liabilities	489.1	477.4	–	477.4	–	476.0	483.7	–	483.7	–
Contract liabilities ¹	N/A	235.1	–	–	–	–	259.6	–	–	–	–
Accounts payable	Other financial liabilities	377.9	–	–	–	–	432.2	–	–	–	–
Total		1,102.2					1,167.8				
Derivative financial liabilities	Fair value – hedging instrument	0.5	0.5	–	0.5	–	5.3	5.3	–	5.3	–
Special class											
Lease obligations	N/A	82.4	82.4	–	82.4	–	80.9	80.9	–	80.9	–
Total financial liabilities		1,185.0					1,254.0				

¹ These are indirect investments

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. Fair value measurements at level 3 are mainly based on unobservable market data. In 2020, Giesecke+Devrient determined fair values of financial instruments based at level 1, level 2 and level 3. In 2020 and 2019, no material reclassifications between the levels were recorded. In 2020 and in 2019, no significant reclassification 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, 2020 and 2019, these derivative financial instruments are stated at fair value and recorded on the balance sheet under current financial assets in the amount of EUR 5.0 million and EUR 7.4 million and under current financial liabilities in the amount of EUR 0.4 million and EUR 5.3 million, respectively.

The nominal volume of foreign currency forward contracts entered into by Giesecke+Devrient as of December 31, 2020 amounted to (in million foreign currency units):

EUR million	Purchase contracts	Sales contracts
US dollar	8.9	237.7
Australian dollar	–	7.0
Brazilian real	–	50.0
Chinese renminbi	–	420.0
Indian rupee	–	700.0
Hong Kong dollar	4.7	51.5
South African rand	110.0	207.0

Prior Year 2019

EUR million	Purchase contracts	Sales contracts
US dollar	56.3	181.3
Australian dollar	3.0	9.0
British pound	2.5	1.0
Chinese renminbi	–	460.0
Indian rupee	–	690.0
Canadian dollar	4.0	–
Hong Kong dollar	–	58.7
Swedish krona	77.0	–
South African rand	–	97.5
Swiss Franc	–	27.5

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, 2020 and 2019, 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 2020 and 2019 related solely to financial assets in the class "loans and receivables".

EUR million	2020	2019
Impairment losses	(24.6)	(10.7)
Reversals of impairment losses	4.7	2.2
	(19.9)	(8.5)

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

EUR million	2020	2019
Financial assets measured at amortized cost	(23.4)	(7.7)
Financial assets and financial liabilities held for trading	4.4	6.7
Financial liabilities measured at amortized cost	3.3	(0.4)
	(15.7)	(1.4)

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 contain results from changes in fair market values and adjustments on settlement 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 in particular 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 those risks. Giesecke+Devrient manages these risks predominantly within their 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 trade receivables 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 a critical 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 another 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 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 228.1 million (prior year EUR 205.6 million) as of December 31, 2020 to ensure adequate liquidity to cover fluctuations in operating activities. The principal part thereof is a long-term credit line of EUR 180.0 million provided by a consortium to Giesecke+Devrient GmbH running until May 2022. All lenders are banks with an investment grade. As of December 31, 2020, EUR 5.5 million of the total available credit line were drawn (previous year EUR 7.1 million).

In addition, loans amounted to EUR 483.6 million. These consisted of EUR 120.0 million in syndicated loans, EUR 71.6 million in loans from the European Investment Bank EIB and EUR 200.0 million promissory note loans. The remaining amount includes loans from other third parties (including Bundesdruckerei, G+D Stiftung, KfW development loan in favor of Veridos) as well as local loans for subsidiaries. Prior year credit lines with other third parties amounting to EUR 11.2 million are reported as non-current liabilities with third parties.

The following tables show the carrying amount 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, 2020

EUR million

	Carrying value	Gross outflows	Up to 1 year		1–2 years		2–3 years		3–4 years		4–5 years		over 5 years	
			Repayment	Interest	Repayment	Interest	Repayment	Interest	Repayment	Interest	Repayment	Interest		
Original financial liabilities														
Accounts payable trade and other liabilities	377.7	377.7	377.7	–	–	–	–	–	–	–	–	–	–	–
Financial liabilities	489.2	515.4	18.9	6.5	136.2	5.3	86.6	4.5	18.0	3.8	107.7	3.4	120.1	4.4
Lease obligations	82.4	86.5	19.9	1.3	16.0	1.0	13.9	0.7	11.4	0.4	7.1	0.3	14.1	0.4
Derivative financial liabilities														
Derivative financial instruments	0.4	34.0	34.0	–	–	–	–	–	–	–	–	–	–	–
Total	949.7	1,013.6	450.5	7.8	152.2	6.3	100.5	5.2	29.4	4.2	114.8	3.7	134.2	4.8

Information on Liquidity Risk as of December 31, 2019

in EUR million

	Carrying value	Gross outflows	Up to 1 year		1–2 years		2–3 years		3–4 years		4–5 years		over 5 years	
			Repayment	Interest	Repayment	Interest	Repayment	Interest	Repayment	Interest	Repayment	Interest		
Primary financial liabilities														
Accounts payable trade and other liabilities	432.2	432.2	432.2	–	–	–	–	–	–	–	–	–	–	–
Financial liabilities	476.1	503.2	55.6	7.9	22.1	5.4	139.1	4.0	80.7	3.1	10.0	2.5	166.6	6.2
Lease obligations	80.9	86.7	19.1	1.7	14.9	1.3	12.2	1.0	10.9	0.7	8.3	0.4	15.5	0.7
Derivative financial liabilities														
Derivative financial instruments	5.3	129.4	129.4	–	–	–	–	–	–	–	–	–	–	–
Total	994.5	1,151.5	636.3	9.6	37.0	6.7	151.3	5.0	91.6	3.8	18.3	2.9	182.1	6.9

All financial instruments held as of December 31, 2020 and December 31, 2019 for which payments were already contractually agreed have been included. Target figures for future liabilities are not included. Amounts in foreign currencies were translated at the closing rate applicable on the reporting date. Variable interest payments from financial instruments were determined by applying the last fixed interest rates before December 31, 2020 or December 31, 2019, respectively. 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 is to avoid negative interest charges. For this reason, only time deposits and deposits at notice were made with the consortium banks. The decision on the investment period was based on short-term liquidity planning.

In addition, cash investments with a term of more than three months to the amount of EUR 0.5 million (previous year EUR 1.0 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 a 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 100,0%. 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 the currencies USD, INR, RMB and HKD, is hedged in phases based on a 12 months net position. The economic exposure of the self-contained portion of a natural hedge in USD 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, 2020:

Net Currency Exposure as of December 31, 2020

Foreign currency risk EUR million	AUD		BRL		GBP		HKD		INR	
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
Hedging of booked transactions										
Net exposure	7.3	6.0	9.5	–	(1.5)	(0.6)	0.0	6.8	5.3	4.2
Firm commitment	–	–	–	–	–	–	–	–	–	–
Financial derivatives	(4.4)	(3.8)	(8.0)	–	–	1.8	–	(6.7)	(3.9)	(8.6)
Hedging of expected transactions (Cash Flow Hedge)										
Financial derivatives (FX Forwards)	–	–	–	–	–	–	–	–	–	–
Hedging of expected transactions (other projects)										
Financial derivatives (FX Forwards)	–	–	–	–	–	–	(5.2)	–	(3.9)	–
Financial derivatives (FX Options)	–	–	–	–	–	–	–	–	–	–
Net exposure Netting										
Financial derivatives (FX Forwards)	–	–	–	–	–	–	–	–	–	–

Net Currency Exposure as of December 31, 2020

Foreign currency risk EUR million	RMB		SEK		USD		ZAR	
	2020	2019	2020	2019	2020	2019	2020	2019
Hedging of booked transactions								
Net exposure	41.5	48.3	(3.3)	(11.1)	61.2	37.6	7.2	8.0
Firm commitment	–	–	–	–	–	55.0	–	–
Financial derivatives	(37.4)	(58.8)	–	7.4	(61.9)	(107.4)	(5.1)	(6.2)
Hedging of expected transactions (Cash Flow Hedge)								
Financial derivatives (FX Forwards)	–	–	–	–	(55.9)	–	–	–
Hedging of expected transactions (other projects)								
Financial derivatives (FX Forwards)	(15.0)	–	–	–	(59.1)	–	–	–
Financial derivatives (FX Options)	–	–	–	–	(12.5)	–	–	–
Net exposure Netting								
Financial derivatives (FX Forwards)	–	–	–	–	(12.3)	–	–	–

AUD = Australian Dollar, BRL = Brazilian Real, GBP = British Pound Sterling, HKD = Hongkong Dollar, INR = Indian Rupee, RMB = Chinese Renminbi, SEK = Swedish Krona, USD = United States Dollar, ZAR = South African Rand

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

Sensitivity analyses are used to determine the effects of hypothetical changes and their effects on the profits/losses and on the total 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 income 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, 2020 and December 31, 2019, respectively:

Primary Financial Instruments as of December 31, 2020 (Impact > EUR 2 million)

Impact in EUR million	Equity						Profit/Loss	
	2020		2019		2020		2019	
	-10.0 %	+10.0 %	-10.0 %	+10.0 %	-10.0 %	+10.0 %	-10.0 %	+10.0 %
RMB	-	-	4.8	(4.8)	4.2	(4.2)	4.8	(4.8)
USD	-	-	3.8	(3.8)	6.1	(6.1)	3.8	(3.8)

Derivative Financial Instruments as of December 31, 2020 (Impact > EUR 2 million)

Impact in EUR million	Equity						Profit/Loss	
	2020		2019		2020		2019	
	-10.0 %	+10.0 %	-10.0 %	+10.0 %	-10.0 %	+10.0 %	-10.0 %	+10.0 %
RMB	-	-	(6.5)	5.3	(5.8)	4.8	(6.5)	5.3
USD	(6.0)	4.9	(6.4)	5.2	(16.1)	13.2	(6.4)	5.2

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 can a legal right to net be substantiated.

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

Dec 31, 2020

EUR million	Cross amount of hedging instruments in the Balance Sheet	Related hedging instruments, which are not netted	Balanced amount
Financial assets			
Other financial assets including derivatives			
forward exchange transactions, used for hedging transactions	4.2	(0.3)	3.9
other forward exchange transactions	0.5	-	0.5
	4.6	(0.3)	4.3
Financial Liabilities			
Trade payables and other payables	(0.4)	0.3	(0.2)
forward exchange transactions, used for hedging transactions	-	-	-
other forward exchange transactions	-	-	-
	(0.4)	0.3	(0.2)

Dec 31, 2019

EUR million	Cross amount of hedging instruments in the Balance Sheet	Related hedging instruments, which are not netted	Balanced amount
Financial assets			
Other financial assets including derivatives			
forward exchange transactions, used for hedging transactions	2.0	(1.6)	0.4
other forward exchange transactions	-	-	-
	2.0	(1.6)	0.4
Financial Liabilities			
Trade payables and other payables	(5.2)	1.6	(3.6)
forward exchange transactions, used for hedging transactions	-	-	-
other forward exchange transactions	-	-	-
	(5.2)	1.6	(3.6)

Hedging of major projects using "Fair Value Hedge Accounting" (FVH)

In 2020, no new hedging relationships using fair value hedge accounting were implemented. All existing hedging relationships either expired or were terminated prematurely. As of December 31, 2020, there were no hedging relationships (prior year EUR 55.0 million).

Due to the premature termination of one hedging relationship using fair value hedge accounting, an effect with the amount of EUR 0.8 million from the underlying firm commitments was reported in the financial results. The remaining exposure on the project is being hedged economically without applying hedge accounting.

The underlying transactions as well as hedging instruments in connection with fair value hedge accounting as of December 31, 2019 are as follows:

Maturity and average forward contract rate (USD) as of December 31, 2019

	Maturity	
	< 1 year	> 1 year
Foreign currency risk		
Forward exchange contracts		
Net exposure (in EUR million)	55.0	-
average EUR/USD forward contract rate	1.22	-

Carrying amount of the underlying transactions as of December 31, 2019

EUR million	Carrying amount				Balance Sheet account that includes the hedged item	Change in value of the hedged item used as the basis for recognizing hedge ineffectiveness for the period
	Assets		Liabilities			
	Assets	Liabilities	Assets	Liabilities		
Firm commitments	5.1	0.2	5.1	0.2	financial assets, financial liabilities	7.2

Carrying amount of the hedging transactions as of December 31, 2019

EUR million	Nominal amount	Carrying amount		Balance Sheet account that includes the hedging instrument	Change in fair value of the hedging instrument used as basis for recognizing hedge ineffectiveness for the period	Hedge ineffectiveness recognized in Profit and Loss	Profit and Loss account that includes recognized hedge ineffectiveness
		Assets	Liabilities				
				financial assets, financial liabilities			
Forward exchange contracts	55.0	0.3	4.0		(7.2)	–	N.A.

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

In principle, contracts with a volume of > EUR 8 million are hedged via a forward exchange contract and checked whether they can be recorded using cash flow hedge accounting.

As such, fluctuations in valuations of the derivatives due to timing in these individual transactions can be avoided in shareholders' 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 a 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.

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

As of December 31, 2020 and December 31, 2019 respectively, the Group maintained the following instruments to hedge foreign exchange fluctuations:

	2020	
	< 1 Year	> 1 Year
Foreign currency risk		
Forward exchange contracts		
Net exposure (in millions of euro)	52.3	3.7
Average EUR/USD forward contract rate	1.1785	1.1848

	2019	
	< 1 Year	> 1 Year
Foreign currency risk		
Forward exchange contracts		
Net exposure (in millions of euro)	–	–
Average EUR/USD forward contract rate	–	–

As of December 31, 2020 and December 2019 respectively the amounts related to positions designated to the hedged underlying transactions are following:

EUR million	Dec 31, 2020		
	Change in value used for calculating hedge ineffectiveness	Cash flow hedge reserve	Balances remaining in the cash flow hedge reserve from hedging relationships for which hedge accounting is no longer applied
Foreign currency risk			
Sales (receivables)	2.5	2.5	–
Purchases (liabilities)	–	–	–

EUR million	Dec 31, 2019		
	Change in value used for calculating hedge ineffectiveness	Cash flow hedge reserve	Balances remaining in the cash flow hedge reserve from hedging relationships for which hedge accounting is no longer applied
Foreign currency risk			
Sales, receivables	–	–	–
Purchases (liabilities)	–	–	–

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

2020							
EUR million							
	Carrying amount			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 and Loss	Profit and Loss account which is affected by the reclassification
	Nominal amount	Assets	Liabilities				
Foreign currency risk							
Forward exchange contracts – sales (receivables)	55.9	-2.5	-	Other investments and other payables (liabilities)	2.7	0.2	Revenue
Forward exchange contracts – purchases (liabilities)	-	-	-	-	-	-	-

2019							
EUR million							
	Carrying amount			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 and Loss	Profit and Loss account which is affected by the reclassification
	Nominal amount	Assets	Liabilities				
Foreign currency risk							
Forward exchange contracts – sales (receivables)	-	-	-	Other investments and other payables (liabilities)	-	-	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:

2020	
EUR million	
	Hedging reserve
Balance at January 1, 2020	0.0
Cash flow hedges	
Foreign currency risk – inventory purchases	-
Foreign currency risk – other items	2.7
Amount reclassified to Profit and Loss:	
Foreign currency risk – other items	0.2
Balance at December 31, 2020	2.5

2019	
EUR million	
	Hedging reserve
Balance at January 1, 2020	-
Cash flow hedges	
Foreign currency risk – inventory purchases	-
Foreign currency risk – other items	-
Amount reclassified to Profit and Loss:	
Foreign currency risk – other items	-
Balance at December 31, 2020	-

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, 2020, the values were as follows:

Interest Risk financial instruments December 31, 2020

	EUR million											
	Average rate of interest		Total amount		Up to 1 year		1–2 years		2–5 years		Over 5 years	
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
Fixed-interest financial instruments												
Financial liabilities (current and non-current)	1.4	1.5	338.9	323.0	12.1	47.1	15.0	20.8	192.7	88.5	119.1	166.6
Lease obligations	2.1	2.4	82.4	80.9	19.9	19.1	16.0	14.9	32.4	31.5	14.1	15.4
Variable-interest financial instruments												
Financial liabilities	1.4	1.5	148.6	151.1	6.8	8.5	121.2	1.3	19.6	141.3	1.0	-

There were no interest rate derivatives in 2020 and 2019.

Interest rate sensitive financial assets are mainly subject to variable interest rates. The balance sheet item cash and cash equivalents is not considered here.

C Special Investment Fund

In addition to money invested directly with banks, assets as of December 31, 2020 of EUR 78.2 million are managed by a well-known German asset management company in a special investment fund. The investment consists of a portfolio of first-grade bonds (government bonds, corporate bonds and fixed income bonds) and equities (first-grade companies), as well as commodities and cash equivalents.

In 2019 the proportion of shares was set at a maximum of 50.0% of the total portfolio to ensure diversification. The risk of the share component in this investment fund is shown 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 10 days with a probability of 99.0%.

The following values arise for the special investment fund as of December 31, 2020 (VaR and assets):

EUR million	2020
Marketvalue fund (incl. derivatives)	78.2
99.0 % VaR	9.2
Assets	
Equities incl. equity funds	38.5
Bonds incl. bond funds	29.3
Derivatives	0.3
Commodities	6.5
Cash	3.6
Other Assets	–

The following values arise for the special investment fund as of December 31, 2019 (VaR and assets):

EUR million	2019
Market value entire fund (incl. derivatives)	76.9
99.0 % VaR	1.8
Assets	
Equity shares incl. Equity funds	37.6
Bonds incl. Bond funds	31.0
Derivatives	0.2
Commodities	–
Cash	8.1
Other Assets	–

In addition to the special investment fund, Giesecke+Devrient holds securities that are classified as available-for-sale securities. The carrying amount as of December 31, 2020 is EUR 9.3 million (previous year: EUR 10.0 million). The majority of these securities are investments in funds that serve as insolvency insurance to cover the provision for pensions and pre-retirement arrangements. 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	Dec 31, 2020	Dec 31, 2019
Contract assets at the beginning of the period	187.0	147.0
Currency differences	(3.1)	0.5
Transfers from contract assets recognized at the beginning of the period to receivables	(175.9)	(124.4)
Impairment losses on contract assets	(0.3)	(0.3)
Changes in the measure of progress	228.9	164.2
Contract assets at the end of the period	236.6	187.0
Contract liabilities at the beginning of the period	259.6	246.2
Currency differences	(5.3)	1.5
Revenue recognized that was included in the contract liability balance at the beginning of the period	(226.8)	(229.6)
Prepayments received excluding revenue during the period	207.6	241.5
Contract liabilities at the end of the period	235.1	259.6

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 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 is dependent on the achievement of certain key figures (net sales, gross profit). Veridos maintains a call option and the non-controlling shareholders have a put option for the remaining 25.0% of the shares. The options are exercisable up until December 31, 2022. G+D has a call option and the shareholder has 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 has been recorded as a financial liability and represents part of the consideration. 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. and consolidates 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.

As of May 13, 2020 BA International Inc., Ottawa/Ontario, was liquidated. The company's purpose was services relating to the handling of bank notes. At the time of liquidation, a gain arising from disposal in the amount of EUR 1.0 million in derecognizing prior years OCI translation differences was recorded.

As of September 1, 2020, CI Tech Components AG, Burgdorf, was sold at a selling price of EUR 1. The company's objective was the development and market introduction of security technology for testing and processing bank notes. At the time of liquidation, a loss arising from disposal of EUR 4.3 million was recorded. Thereof, EUR 2.7 million in derecognizing prior years OCI translation differences.

As of December 15, 2020, Giesecke+Devrient Mobile Security FZOO, Dubai, was liquidated. The company's objective was to perform services for personalized card systems. No disposal gain was reported.

25 Disclosures on Material Non-controlling Interests

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

	Giesecke & Devrient Malaysia SDN BHD, Kuala Lumpur		Giesecke & Devrient Kabushiki Kaisha, Tokyo		Veridos Matsoukis S.A. Security Printing, Athens	
	Dec 31, 2020	Dec 31, 2019	Dec 31, 2020	Dec 31, 2019	Dec 31, 2020	Dec 31, 2019
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	0.7	0.5	1.5	1.7	1.1	1.0
Dividend paid to NCI	–	–	(3.1)	(2.6)	–	–
Share of equity relating to NCI	8.5	7.7	3.9	5.5	6.1	5.1
Assets ¹	57.9	58.6	9.5	12.1	49.2	40.0
thereof cash and cash equivalents ¹	3.1	6.5	4.6	8.7	2.1	1.9
Liabilities ¹	13.3	17.7	3.6	2.7	39.2	31.6
Revenues ¹	42.7	37.4	20.1	21.5	43.3	38.5
Other comprehensive income ¹	–	–	(0.2)	0.3	(0.1)	–
Comprehensive income ¹	3.7	2.7	2.8	3.8	1.6	1.6

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

	Veridos GmbH, Berlin ²		secunet Security Networks AG, Essen including subsidiaries	
	Dec 31, 2020	Dec 31, 2019	Dec 31, 2020	Dec 31, 2019
Capital shares NCI	40.0 %	40.0 %	20.7 %	20.6 %
Voting rights NCI	40.0 %	40.0 %	20.7 %	20.6 %
Profit/(loss) attributable to NCI	(4.4)	(0.6)	7.2	4.8
Dividend paid to NCI	–	–	(2.1)	(2.7)
Share of equity relating to NCI	1.7	7.9	21.9	16.8
Assets ¹	199.7	207.1	238.1	184.4
thereof cash and cash equivalents ¹	18.5	10.7	101.6	64.5
Liabilities ¹	186.1	180.5	135.3	106.5
Revenues ¹	171.1	178.0	285.6	226.9
Other comprehensive income ¹	(1.2)	(1.3)	(0.1)	(0.5)
Comprehensive income ¹	(9.7)	(6.5)	34.9	21.7

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 Matsoukis S.A. Security Printing, Veridos America Inc., Veridos FZE, Firdaus AI Aman for general Trading, E-SEEK Inc. and VERIDOS IDENTITY SOLUTIONS UGANDA SMC LIMITED via Veridos GmbH

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 2018, G+D received a new loan in the amount of EUR 15.5 million with a duration until January 2019, which was repaid in January 2019. 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. As of December 31, 2020 and December 31, 2019, 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 2017, G+D sold part of its land and buildings to a parent-controlled company. In connection with this transaction, lease agreements were concluded with DER bogen GmbH & Co. KG. These terminated on December 31, 2019. In fiscal year 2020 and 2019, rental expenses from these leases amounted to EUR 0.0 million and EUR 1.4 million.

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 allocated fee is immaterial.

Transactions with Giesecke+Devrient Foundation

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, 2020 and 2019, respectively. The loan is due at maturity on May 10, 2025. Interest expense amounted to EUR 0.4 million and EUR 0.5 million in 2020 and 2019, respectively (see Note 13 "Financial Liabilities"). The grants amounted to EUR 0.3 million in fiscal years 2020 and 2019, 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	
	2020	2019	2020	2019
Joint ventures				
Goods and services	7.4	8.3	0.9	2.1
Other financial transactions	–	–	0.1	–
	7.4	8.3	1.0	2.1
Associated companies				
Goods and services	–	0.3	2.2	2.3
	–	0.3	2.2	2.3
	7.4	8.6	3.2	4.4

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

EUR million	Dec 31, 2020	Dec 31, 2019
	Joint ventures	
Accounts receivable from joint ventures	0.5	1.5
Accounts payable to joint ventures	0.1	0.3
Associated companies		
Loans receivable from associated companies	2.1	1.6
Accounts receivable from associated companies	0.1	0.3
Accounts payable to associated companies	0.6	0.2

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 (equals 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 6.2 million and EUR 8.5 million in 2020 and 2019, respectively.

In 2020 and 2019, the short-term benefits amounted to EUR 5.2 million and EUR 6.4 million, respectively. Thereof, EUR 4.2 million (prior year EUR 5.5 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 0.5 million and EUR 0.5 million in 2020 and 2019, respectively.

Furthermore, long term benefits for active members of the GEC amounted to EUR 0.6 million (prior year EUR 1.5 million).

The compensation of the GEC also includes benefits from termination of an employment contract in the amount of EUR 0.0 million (prior year EUR 0.1 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 2020 and 2019 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 3.8 million and EUR 4.6 million as of December 31, 2020 and 2019, respectively, as well as provisions or payables relating to compensation for members of key management personnel in the amount of EUR 5.2 million and EUR 6.8 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. Expenses to other related parties for consultancy services amounted to EUR 0.0 million and EUR 0.2 million in 2020 and 2019, respectively. The outstanding balances as of December 31, 2019 amounted to less than EUR 0.1 million.

No prepayments or loans to members of key management personnel were granted in fiscal years 2020 and 2019.

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 2.3 million and EUR 2.2 million in 2020 and 2019, respectively. In 2020, this includes EUR 0.2 million for long-term variable compensation from a 2018 commitment.

Pension obligations to former members of the management board of the parent company and their survivors amounted to EUR 22.1 million and EUR 19.9 million as of December 31, 2020 and 2019, respectively.

27 Number of Employees

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

	2020	2019
Production	7,365	7,346
Sales	1,423	1,413
Research and development	1,169	1,142
Administration	1,579	1,563
	11,536	11,464

28 Personnel Expenses

EUR million	2020	2019
Wages and salaries	608.2	626.7
Social security contributions	98.1	101.1
Other personnel expenses	11.6	11.8
	717.9	739.6

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 Louisenenthal 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

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 12.1 million as of December 31, 2020 (as of December 31, 2019 EUR 2.5 million) relating to tax risks outside Germany exist. As of December 31, 2020, additional contingent liabilities relating to legal disputes amounting to EUR 0.3 million (December 31, 2019: EUR 0.6 million) exist. G+D believes claims relating to these tax risks and legal disputes 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 124.3 million as of December 31, 2020 and EUR 143.5 million as of December 31, 2019.

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 2020 and EUR 10.0 million in 2019, 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, 2020 and EUR 10.0 million in December 31, 2019, respectively. Furthermore, Giesecke+Devrient guarantees indebtedness of a third party concerning contractual performance to third parties. These arrangements cover credit lines of the third party in the amount of up to EUR 1.0 million in 2020. Amounts relating to interest charges are also guaranteed. In the event of default of the third party, G+D is required to repay the borrowings covered by these guarantees. The maximum exposure relating to these guarantees amounted to EUR 1.0 million as of December 31, 2020.

Commitments

As of December 31, 2020, Giesecke+Devrient has material purchase commitments which mainly consist of short-term agreements that were entered into during the 2020 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, 2020 is allocated to the respective years as follows:

EUR million	
2021	290.1
2022	30.8
2023	4.0
2024	1.5
2025	0.1
thereafter	0.1
	326.6

32 Grants

In fiscal years 2020 and 2019, G+D received other miscellaneous grants for operational investments in the amount of EUR 8.7 million and EUR 2.8 million which were recognized in income. At present, there is reasonable assurance that the attached conditions will be fulfilled.

33 Risks

Refer to section 3 of the Group management report, "Risk and Compliance Management", 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 2020 amounted to EUR 2.2 million. The breakdown into categories is as follows: a) fees for audit services EUR 1.3 million, b) fees for audit-related services EUR 0.2 million, c) fees for tax-related services EUR 0.2 million and d) fees for all other services EUR 0.5 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, 2020, 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

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. With regard to the developments regarding the coronavirus pandemic, refer to the details in the forecast section of the management report.

In February 2021, G+D reduced its share in secunet from 79.3 % by 3.9 % or 250,000 shares/EUR 284 each. For the majority portion, there is no intention to sell.

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
PROCOIN GmbH, Langen	100.0
Giesecke + Devrient Mobile Security Iberia S.A., Barcelona	100.0
Giesecke + Devrient Currency Technology Iberia S.L., Madrid	100.0
Giesecke+Devrient Mobile Security GB Ltd, Wembley/Middlesex	100.0
Giesecke+Devrient Currency Technology GB Ltd, Milton Keynes	100.0
Giesecke+Devrient Currency Technology Switzerland AG i.L., Burgdorf	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., Craaponne	100.0
Giesecke+Devrient Mobile Security Sweden AB, Stockholm	100.0
Giesecke+Devrient Mobile Security Finland Oy, Helsinki	100.0
Transtrack International B.V., Amsterdam	100.0
Giesecke+Devrient Currency Technology Istanbul Ticaret ve Servis Limited Sirketi, Istanbul	100.0
Giesecke+Devrient Mobile Security Russia, OOO, Moscow	100.0
Giesecke+Devrient Mobile Security FZCO, Dubai	100.0
Giesecke+Devrient Holding FZE, Dubai	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 Egypt Ltd. i.L., Cairo	100.0
Giesecke+Devrient Currency Technology Saudi Arabia, Riyadh	100.0
Giesecke and Devrient Currency Technology South Africa (Pty) Ltd, Johannesburg	100.0
Giesecke+Devrient Currency Technology Africa Limited, 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 Mobile Security Canada, Inc., Toronto/Ontario	100.0
Giesecke y Devrient de México S.A. de C.V., Mexico City	100.0
Giesecke & 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 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 Asia Pte. Ltd., Singapore	100.0
Giesecke & Devrient Asia Pacific Banking Systems (Shanghai) Co. Ltd., Shanghai	100.0
Giesecke & Devrient (China) Information Technologies Co., Ltd., Nanchang/Jiangxi	100.0
Giesecke & Devrient Asia Pacific Ltd., Hong Kong	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, Jakarta	100.0
Giesecke & Devrient Egypt Services LLC i.L., 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
secunet Security Networks AG, Essen	79.3
secunet s.r.o., Prague	100.0 ³
Secunet Inc., Austin (shell company)	100.0 ^{2,3}
secunet Service GmbH, Essen	100.0
secunet International GmbH & Co.KG, Essen	100.0
secunet International Management GmbH, Essen	100.0
finally safe GmbH i.L., Essen	100.0
secustack GmbH, Dresden	51.0
Veridos GmbH, Berlin	60.0

² Not consolidated due to immateriality³ These are indirect investments

BA International Inc., Ottawa, Giesecke+Devrient Mobile Security FZCO, Dubai and CI Tech Components AG, Burgdorf were deconsolidated in 2020, major changes are reflected under business combinations

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

	Shareholding in %
Veridos Canada Ltd., Toronto/Ontario	100.0 ³
Veridos America Inc., Wilmington/Delaware	100.0 ³
Veridos FZE, Dubai	100.0 ³
VERIDOS IDENTITY SOLUTIONS UGANDA SMC LIMITED, Kampala	100.0 ³
Firdaus Al Aman for general Trading, Baghdad	100.0 ³
Veridos Brasil Comércio de Smart Cards e Soluções para Identificação Segura e Autenticação Ltda., São Paulo	100.0 ³
Veridos México S.A. de C.V., Mexico City	100.0 ³
E-SEEK Inc., San Diego/California	75.0 ³
Veridos Matsoukis S.A. Security Printing, Athens	60.0 ³
Giesecke & Devrient Kabushiki Kaisha, Tokyo	51.0

³ These are indirect investments**Investments held by Giesecke+Devrient GmbH in associated companies and joint ventures**

	Shareholding in %
E-Kart Elektronik Kart Sistemleri Sanayi ve Ticaret Anonim Sirketi, Gebze	50.0
Shenzhen Giesecke & Devrient Currency Automation Systems Co. Ltd., Shenzhen	50.0
Emirates German Security Printing L.L.C. i.L., Abu Dhabi	49.0 ³
UGANDA SECURITY PRINTING COMPANY (USPCL) LIMITED., Entebbe	49.0 ³
Netset Global Solutions d.o.o., Belgrade	40.0 ³
Build38 GmbH, Munich	38.0
Netcetera Group AG, Zurich	30.0

³ These are indirect investments**Investments held by Giesecke+Devrient GmbH in other related parties**

	Shareholding in %
IDnow GmbH, Munich	7.0
Verimi GmbH, Frankfurt am Main	5.9
Brighter AI Technologies GmbH, Berlin	4.9
Metaco SA, Lausanne	3.9

Munich, March 22, 2021

Giesecke+Devrient GmbH
The Management Board


Ralf Wintergerst
Group CEO



Dr. Peter Zattler
Group CFO

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(Chairman) Munich

Eva Schäflein-Bohsewe¹
(Deputy Chairman) Neubiberg

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