Adtran

Unlocking the future network

ANNUAL REPORT 2023

Contents

Welcome

Profile

Adtran Networks is a company founded on innovation and driven to help our customers succeed.

Our technology is the foundation of a shared digital future and empowers networks across the globe. We're continually developing breakthrough hardware and software that leads the networking industry and creates new business opportunities.

It's these open connectivity solutions that enable our customers to deliver the cloud[1] and mobile services that are vital to today's society and for imagining new tomorrows.

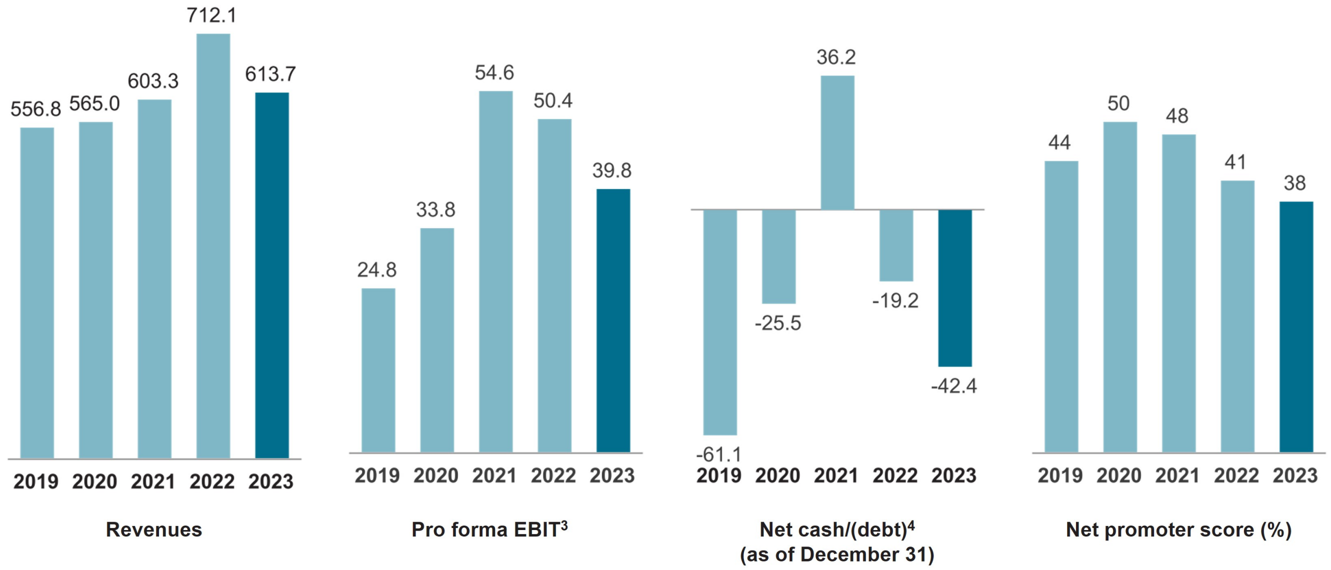
Together, we're building a truly connected and sustainable future.

Mission

Adtran Networks enables open next-generation networks. The group's mission is to be an innovation leader focused on its customers' experience by building better networking solutions.

2023 key performance indicators

(in millions of EUR, except net promoter score[2])



[1] Cloud in the context of IT describes a concept where applications no longer run on the user's in-house IT infrastructure (for example, a server) but are outsourced to a service provider whose IT infrastructure is not visible or known in detail – as if it was hidden in a cloud. A typical example is the use of software as a service, where the software is not stored on the user's machine, but on servers of the software service provider.

[2] The NPS is obtained by asking customers a single question on a 0 to 10 rating scale: "How likely is it that you would recommend our company to a friend or colleague?". Based on their responses, customers are categorized into one of three groups: promoters (9–10 rating), passives (7–8 rating), and detractors (0–6 rating). The percentage of detractors is then subtracted from the percentage of promoters to obtain a net promoter score.

[3] Pro forma EBIT is calculated prior to non-cash charges related to the stock compensation programs and amortization and impairment of goodwill and acquisition-related intangible assets. Additionally, non-recurring expenses related to M&A and restructuring measures are not included.

[4] Net cash is calculated by subtracting total financial liabilities from cash and cash equivalents. Total financial liabilities comprise current and non-current financial liabilities to banks, including factoring agreements, as well as current and non-current financial receivables and liabilities to Adtran Holdings Inc., including receivables and liabilities from the domination and profit and loss transfer agreement and current and non-current lease liabilities in accordance with IFRS 16 Leases. A negative calculation result is referred to as net debt.

Combined management report

Disclaimer:

Potential inconsistencies in the table values are based on rounding differences.

Basis of preparation

Following the resolution of the annual shareholder's meeting on May 24, 2023, ADVA Optical Networking SE was renamed to Adtran Networks SE with effect from June 8, 2023.

This report combines the group management report of Adtran Networks group ("the group", "Adtran Networks"), comprising Adtran Networks SE (hereafter also referred to as "the company", "Adtran Networks SE") and its consolidated subsidiaries, and the management report of Adtran Networks SE.

The combined management report of Adtran Networks SE was prepared in accordance with sections 289, 315 and 315e of the German Commercial Code (Handelsgesetzbuch, HGB) and German Accounting Standards (Deutsche Rechnungslegungsstandards) No. 17 and 20 (DRS 17 and 20).

All information contained in this report relates to the status on December 31, 2023, or the financial year ending on that date, unless stated otherwise.

The German Corporate Governance Code provides for disclosures on the internal control and risk management system that go beyond the statutory requirements for the management report and are therefore excluded from the auditor's review of the content of the management report ("non-management report disclosures"). These are classified further to risk management and are explained in more detail in the chapter "risk and opportunities report".

Due to rounding, figures in tables may not add up exactly to the totals shown and percentages shown may not exactly reflect the absolute figures to which they relate.

Forward-looking statements

The combined management report of Adtran Networks SE contains forward-looking statements using words such as "believes", "anticipates" and "expects" to describe expected revenues, costs and earnings, anticipated demand for optical networking solutions and anticipated liquidity from which internal estimates may be inferred. These forward-looking statements are based on the beliefs of the Management Board and respective assumptions made, and involve a number of unknown risks, uncertainties and other factors, many of which are beyond Adtran Networks' control. If one or more of these uncertainties or risks materializes, or if the underlying assumptions of the Management Board prove incorrect, actual results can differ materially from those described in or inferred from forward-looking statements and information. Unknown risks and uncertainties are discussed in the "risk and opportunity report" section further below.

Strategy and control design

Adtran Networks strategic goals are focused on growth and profitability, innovation, operational excellence, customer experience and people. The strategic goals are reviewed by both the management board and the supervisory board on a yearly basis and amended where appropriate. Each of these goals are defined in detail and then broken down into specific departmental and individual targets. The strategic goals are traced to each individual employee so that each employee can focus and be evaluated on his/her individual performance and contribution to Adtran Networks overall performance.

Adtran Networks measures the accomplishment of its strategic goals against revenues, pro forma EBIT[1], net cash[2] and as a non-financial criterion customer experience measured by the net promoter score. These metrics represent the group's key performance indicators. The management board sets target values for all four metrics for the coming year and measures actual values against the target values on a monthly basis for revenues and pro forma EBIT, on a quarterly basis for net cash and on a yearly basis for the net promoter score. In case of deviations from plan, corrective action can be taken quickly. This information is summarized and communicated to the management board in monthly, quarterly and yearly reports. There are no separate key performance indicators and corresponding forecast values for Adtran Networks SE.

Adtran Networks had presented its business transformation strategy in the first quarter of 2021. This strategy aims to sustainably improve the margin profile of Adtran Networks's business model and is essentially based on the following three pillars:

- Increase revenues outside of the traditional communication service provider space to 40 % by the end of 2023.
- Increase revenue contribution from the areas of software and services to 30 % by the end of 2023.
- Access new markets and revenue contribution, as well as cost reduction from increased verticalization activities, from the development and production of optoelectronic components.

These pillars will continue to be an essential part of the group's strategy in 2024.

Following the registration of the domination and profit and loss transfer agreement with Adtran Holdings, Inc. on January 16, 2023, Adtran Networks has aligned its strategic objectives with the objectives of the Group as a whole. Due to the significantly expanded product portfolio and additional markets and applications, the objectives of the business transformation strategy were no longer relevant after January 16, 2023. However, the key performance indicators for managing the Adtran Networks group continue to be revenue, pro forma EBIT, net cash and customer satisfaction.

In addition, management at the highest group level of Adtran Holdings is based on revenues and adjusted EBIT[3] for the Adtran Holdings group as a whole. These key figures are important indicators for the Adtran Networks Group. In the 2023 financial year, the Adtran Holdings Group reports revenues of USD 1,149.1 million and an adjusted EBIT of negative USD 9.9 million.

There are no differences in the definition of revenues for the Adtran Networks subgroup compared to US GAAP. The definition of adjusted EBIT differs only insignificantly from the calculation of pro forma EBIT with regard to the reconciliation items.

This annual report continues to report on the previous key performance indicators.

[1] Pro forma EBIT is calculated prior to non-cash charges related to the stock compensation programs and amortization and impairment of goodwill and acquisition-related intangible assets. Additionally, non-recurring expenses related to M&A and restructuring measures are not included.
[2] Net cash is calculated by subtracting total financial liabilities from cash and cash equivalents. Total financial liabilities comprise current and non-current financial liabilities to banks, including factoring agreements, as well as current and non-current financial receivables and liabilities to Adtran Holdings Inc., including receivables and liabilities from the domination and profit and loss transfer agreement and current and non-current lease liabilities in accordance with IFRS 16 Leases. A negative calculation result is referred to as net debt.
[3] Adjusted EBIT is defined as the Adtran Holdings group earnings before interest and tax, determined based on the audited financial results, and adjusted to remove any restructuring expenses; acquisition-related expenses and amortization of intangibles; stock-based compensation expense; the non-cash change in fair value of equity investments held in the deferred compensation plan; and any other non-GAAP exclusions approved by the compensation committee of Adtran Holidngs, Inc..

General economic and market conditions

The global economy at the beginning of 2024

In its latest World Economic Outlook (WEO), the International Monetary Fund (IMF) updated its forecasts for changes in the economic performance of nations and regions and increased the majority of these compared with the last forecast from October 2023. The January 2024 World Economic Outlook estimates the state of the global economy as follows:

Global growth is expected to remain at the same level as the estimated 3.1 % in 2023. In October, the IMF was still forecasting growth of 3.0 %. For the USA, the IMF forecasts growth of 2.1 % compared to 2.5 % in 2023. The eurozone is expected to grow by 0.9 % compared to an estimated 0.5 % in the previous year. For Germany, the IMF forecasts economic growth of 0.5 % compared to the estimated recession of 0.3 % in 2023.

The fiscal policy efforts of global central banks to combat inflation and the associated interest rate hikes will continue to weigh on global economic growth in 2024. However, economic experts believe that inflation will fall faster than expected in most regions. Overall global inflation is expected to fall to 5.8 % in 2024 and to 4.4 % in 2025, although the forecast for 2025 has been revised downwards by the IMF. Given the slowdown in inflation and steady growth, the likelihood of a severe economic crisis has receded and the risks to global growth are largely balanced. On the other hand, a faster decline in inflation could lead to a further loosening of fiscal policy.

This view is shared by the majority of economic experts in the USA and also by the US Federal Reserve. In its first decision of the year, the FOMC unanimously kept interest rates in a target range of 5.25 % to 5.50 %. It was signaled that the FOMC had moved away from its previous tendency to raise interest rates. However, the committee indicated that it is not yet ready to cut interest rates at the next meeting in March 2024 and stated that greater confidence must first be gained that inflation will move towards 2% on a sustained basis.

With regard to Germany and the eurozone, experts do not yet see any loosening of fiscal policy in the short term. The inflation rate in the eurozone fell further from 2.9 % in December 2023 to 2.8 % in January 2024. However, this decline is due in particular to falling energy and food and beverage prices, while an inflationary process can be seen in the services sector. Economic experts therefore assume that the ECB will not cut the key interest rate until June 2024 at the earliest.

During the pandemic, the relevance of an efficient telecommunications infrastructure has once again become clear. However, after record quarters in Q1 and Q2 2023, sentiment in the optical transport technology sector has deteriorated. The major telecommunications providers in particular had built up large inventories and are now postponing infrastructure projects into the future, as the macroeconomic environment and the significant interest rate increases are weighing on the financial profile of these companies. Management currently assumes that our customers' investment behavior will not improve noticeably until the second half of 2024 at the earliest.

Market environment for Adtran Networks

The addressable market for Adtran Networks is determined by the digitization of ecosystems and the resulting increasing demand for cloud[4]-based solutions and underlying communication networks. The rapid adoption of digital processes in all industrial sectors, the creation and use of artificial intelligence and the ubiquitous consumption of high-resolution videos via mobile and fixed networks are important and sustainable growth drivers for the market. Recent developments such as the increased use of home office, home schooling and video conferencing are sustainable accelerating investments in the increasing network expansion. State stimulus and support programs create an additional positive dynamic.

For many years, the communications network supplier industry was characterized by a tension between high development costs and tough competition. This has led to strong selection among manufacturers, and only a few suppliers have been able to hold their own. Market participants with insufficient innovation power or loss-making business models have now largely disappeared from the scene. This has led to market upheaval. In addition, the Covid-19 pandemic has changed perspectives on the importance of network infrastructure. Politics and business have recognized the importance to companies and economies of an efficient communication infrastructure for digital cooperation and virtual collaboration. We are also experiencing security and trust becoming increasingly important in the market environment. As a result of increased security concerns, numerous manufacturers from the Far East are currently being pushed back from the western networks.

In recent years, Adtran Networks has consistently invested in the development of innovative solutions and has brought excellent solutions in the field of secure data transmission to the market. Adtran Networks's network technology enables the construction of a high-performance communication infrastructure that serves as the basis for the digital economy, the industrial internet of things (industrial IoT[5]) – often referred to as Industry 4.0 in Germany – and the digitization of ecosystems. The company addresses important applications in this growth market. Fiber optic transmission technology delivers scalable bandwidth for

[4] Cloud in the context of IT describes a concept where applications no longer run on the user's in-house IT infrastructure (for example, a server) but are outsourced to a service provider whose IT infrastructure is not visible or known in detail – as if it was hidden in a cloud. A typical example is the use of software as a service, where the software is not stored on the user's machine, but on servers of the software service provider.
[5] Network of devices such as vehicles and home appliances that contain electronics, software, sensors, actuators, and connectivity which allows these things to connect, interact and exchange data.

network operators' infrastructure and the data center interconnect (DCI[6]) networks of large enterprises and internet content providers[7]. In the access area of the networks (network edge[8]), the new technology with virtualization enables fast and flexible provision of cloud services and new possibilities for creating edge computing solutions. In addition, the company's synchronization technology provides timing information that is of the utmost importance when building broadband 5G mobile networks, globally distributed data centers and for energy suppliers.

Adtran Networks is well positioned in several areas of the WDM[9] market, the core segment of the overall optical networking hardware market. The adjacent market for Ethernet[10]-based network access solutions is gaining new momentum with the introduction of virtualized network features. Here, the company's solutions can address more and more new growth applications and open up additional opportunities. Finally, Adtran Networks provides differentiated network synchronization solutions for mobile networks and expands the feature set of its portfolio to address timing requirements for other industries, particularly critical infrastractrue. The total addressable market for Adtran Networks is estimated to be USD 10.8 billion[11] in 2023, growing to USD 12.1 billion by 2028 while the possible additional opportunities resulting from the shift from Asian suppliers (especially Huawei) to European suppliers are not quantified (see also the chapter "market, target customers and growth drivers").

[6] Network that connects geographically dispersed data centers.
[7] Internet content providers are entities whose primary business is the creation, storage and dissemination of digital information. ICPs are also commonly referred to as over-the-top (OTT), web 2.0 and digital media companies.
[8] This term is often used for the area of the network infrastructure where the data streams from the end users' access lines converge. These data streams are often bundled at the network edge and functions are defined for the end customer.
[9] WDM expands the capacity of networks by allowing a greater number of signals to be transmitted over a single fiber. WDM enables numerous channels of data to be multiplexed into unique color bands, and then to be combined and transmitted over a single fiber and de-multiplexed at the other end.
[10] Ethernet is a packet-based data transmission protocol with a data rate of 10Mbit/s. Fast Ethernet provides a data rate of 100Mbit/s, Gigabit Ethernet 1Gbit/s and 10 Gigabit Ethernet 10Gbit/s. Today also 40, 100 and 400 Gigabit Ethernet solutions are commercially available with data rates of 40Gbit/s, 100Gbit/s and 400Gbit/s, respectively.
[11] World market excluding China for Metro and Backbone WDM (Omdia, "Optical Networks Forecast", published November 2023), Access Switching and Ethernet Demarcation, (Omdia: "Service Provider Switching and Routing Forecast", October 2023) and network synchronization (Adtran Networks own estimates)

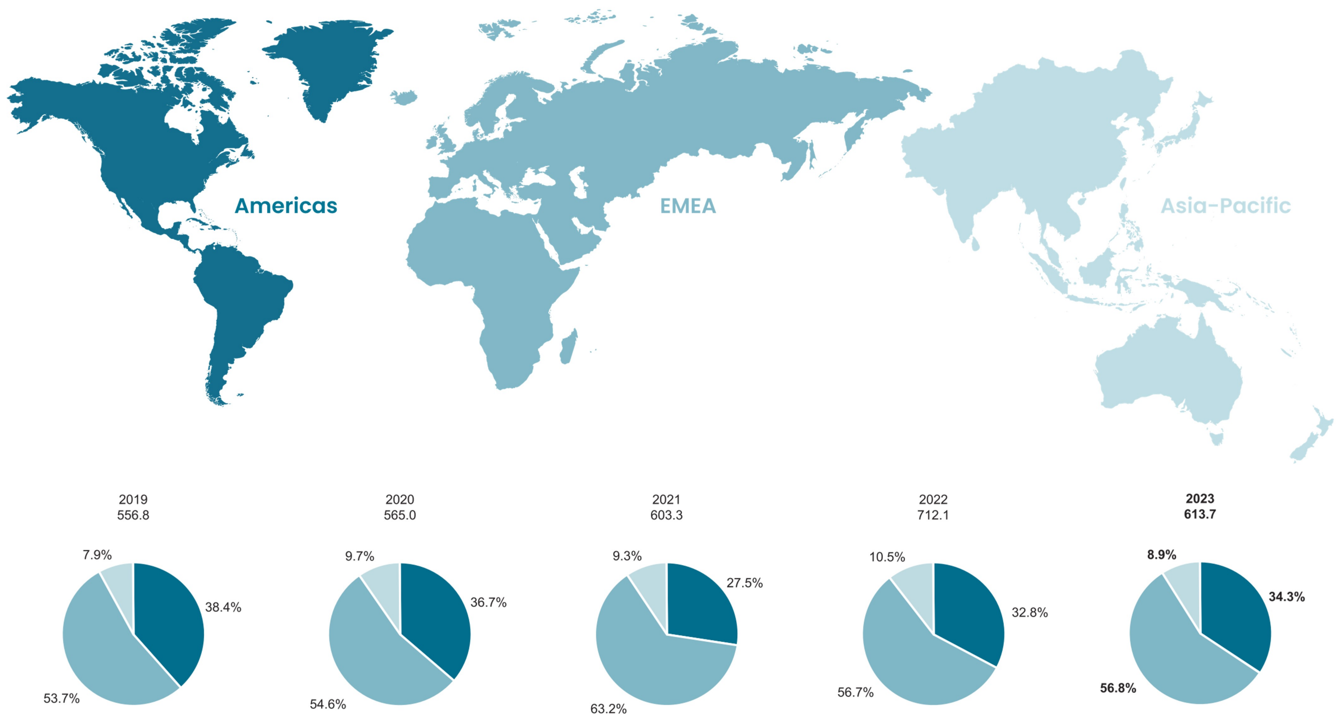
Business development and operational performance of the group

Revenues

Revenues represent one of the four key performance indicators for Adtran Networks. In 2023, the group generated revenues of EUR 613.7 million, a decrease of 13.8 % on revenues of EUR 712.1 million in 2022. Despite significant order backlogs at the beginning of the year, the easing of the semi-conductor crisis led to a softening of demand from most customers due to their high inventories, this was particularly evident with telecommunication service providers and internet content providers (ICPs[12]). The group reported revenues of EUR 118.5 million in Q4 2023. This corresponds to a decrease of 18.7 % compared to Q3 2023 and of 39.5 % compared to Q4 2022 and results, similarly this is driven by telecommunication service providers and internet content providers.

Revenues by region

(in millions of EUR and relative to total revenues)



In 2023, EMEA (Europe, Middle East and Africa) was again the most significant sales region, followed by the Americas and Asia-Pacific.

Year-over-year, EMEA revenues of EUR 348.5 million in 2023 were down from EUR 403.7 million in 2022. Adtran Networks continues to maintain a broad and loyal customer base in this region, however, high customer inventories have driven lower demand in 2023. Enterprise revenues nevertheless remain strong. The decline of 13.7 % compared to the previous year is due to low demand from service providers.

In the Americas region, revenues decreased from EUR 233.8 million in 2022 to EUR 210.6 million in 2023. This, similar to EMEA, is driven by decreased demand from service and internet content providers.

In Asia-Pacific, revenues also strongly decreased from EUR 74.6 million in 2022 to EUR 54.6 million in 2023. Also here the decline in key customer demand due to high inventories drove the decline.

[12] ICPs are companies that create, store and distribute digital content. ICPs are often also referred to as OTT (over-the-top) providers, Web2.0 or digital media companies.

Results of operations

(in millions of EUR, except earnings per share)	2023	Portion of revenues	2022	Portion of revenues
Revenues	**613.7**	**100.0 %**	**712.1**	**100.0 %**
Cost of goods sold *)	(395.1)	64.4 %	(477.2)	67.0 %
Gross profit *)	**218.6**	**35.6 %**	**234.9**	**33.0 %**
Selling and marketing expenses *)	(68.5)	11.2 %	(76.2)	10.7 %
General and administrative expenses *)	(42.1)	6.9 %	(51.7)	7.3 %
Research and development expenses *)	(105.6)	17.2 %	(99.3)	14.0 %
Other operating income and expenses, net	11.0	1.8 %	10.5	1.5 %
Operating income	**13.3**	**2.2 %**	**18.1**	**2.5 %**
Interest income and expenses, net	(3.3)	0.5 %	(2.1)	0.3 %
Other financial gains and losses, net	(4.0)	(0.7)%	4.1	0.6 %
Income before tax	**6.0**	**1.0 %**	**20.1**	**2.8 %**
Income tax expense (benefit), net	(20.5)	3.3 %	(1.9)	0.3 %
Net income	**(14.5)**	**(2.4)%**	**18.1**	**2.5 %**
Earnings per share (in EUR)				
basic	-0.28		0.35	
diluted	-0.28		0.35	

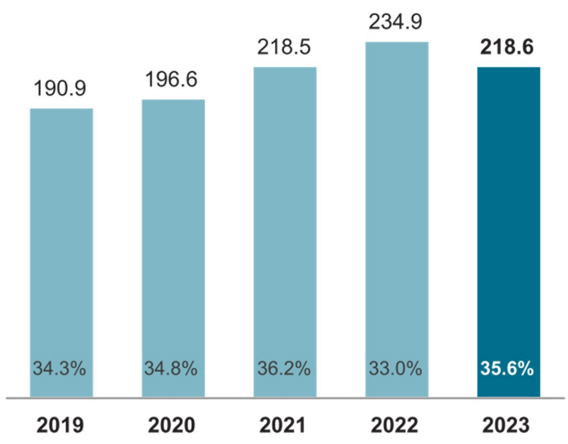
*) Since 2023, rental expenses for offices have been allocated to the functional areas. Previously, these were included in general and administrative expenses. The previous year's figures have been adjusted accordingly in the table above and in the following charts.

Cost of goods sold and gross profit

Cost of goods sold decreased from EUR 477.2 million in 2022 to EUR 395.1 million in 2023, primarily due to the lower revenues as well as cost reductions in manufacturing overheads. Cost of goods sold includes amortization charges for capitalized development projects of EUR 39.2 million in 2023 after EUR 41.9 million in 2022.

Gross profit*)

(in millions of EUR and relative to total revenues)

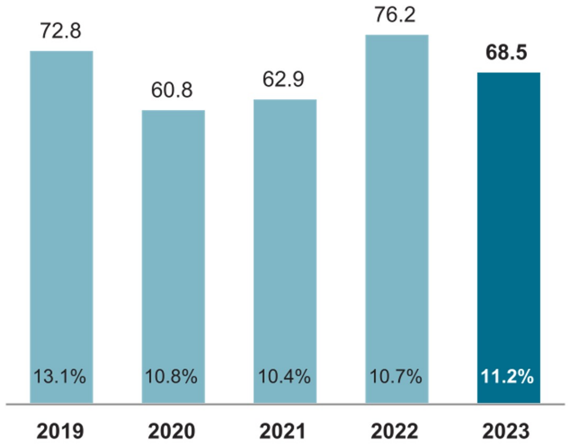


*) Since 2023, rental expenses for offices have been allocated to the functional areas. Previously, these were included in general and administrative expenses. The previous year's figures have been adjusted accordingly.

Gross profit declined to EUR 218.6 million in 2023 after EUR 234.9 million in 2022, comprising 35.6 % and 33.0 % of revenues, respectively. The group’s gross margin in 2023 was positively impacted by decreasing costs due to the ending supply chain crisis. In addition, the USD devaluation against the EUR had a positive effect on the gross margin, as a significant portion of the cost of goods sold is incurred in this currency. In general, the development of the group's gross margin is impacted by variations in regional revenue distribution and in product and customer mix.

Selling and marketing expenses*)

(in millions of EUR and relative to total revenues)



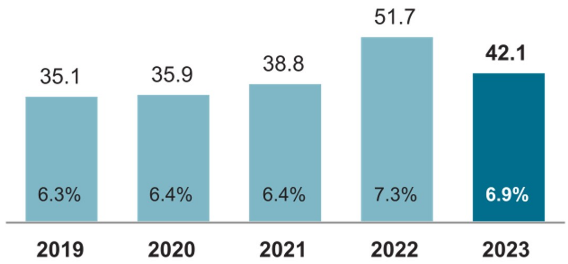
*) Since 2023, rental expenses for offices have been allocated to the functional areas. Previously, these were included in general and administrative expenses. The previous year's figures have been adjusted accordingly.

Selling and marketing expenses of EUR 68.5 million in 2023 were down from EUR 76.2 million in 2022 and comprised 11.2 % and 10.7 % of revenues, respectively. The absolute cost decrease is mainly attributable to lower variable personnel expenses relating to the decreased revenues and order entries in 2023 as well as to reductions in force.

Adtran Networks continues to focus on after-sales customer service and direct-touch activities with those key customers served via indirect distribution channels. Establishing direct contact enables the group to work more closely with its end customers and better understand their specific requirements, which in turn helps in developing market-relevant products.

General and administrative expenses*)

(in millions of EUR and relative to total revenues)

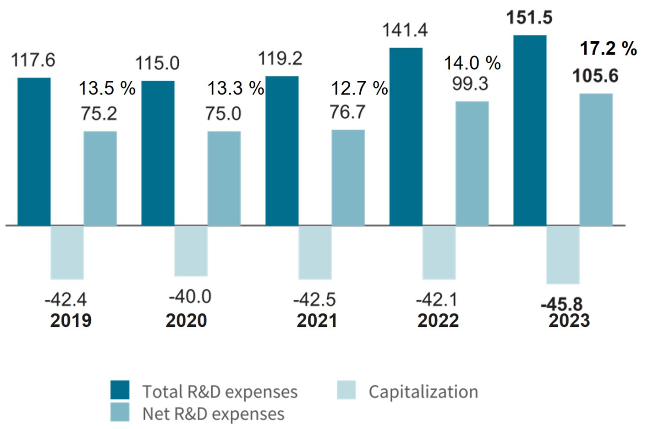


*) Since 2023, rental expenses for offices have been allocated to the functional areas. Previously, these were included in general and administrative expenses. The previous year's figures have been adjusted accordingly.

General and administrative expenses were at EUR 42.1 million in 2023, largely down from EUR 51.7 million recorded in 2022. The share of total revenues was at 6.9 % in 2023 versus 7.3 % in 2022. The decrease in general and administrative expenses results in particular from lower personnel expenses as a result of restructuring measures. In prior year, higher expenses for legal and consulting services in connection with the business combination with Adtran Holdings, Inc. had been considered.

Research and development expenses*)

(in millions of EUR and relative to total revenues)



*) Since 2023, rental expenses for offices have been allocated to the functional areas. Previously, these were included in general and administrative expenses. The previous year's figures have been adjusted accordingly.

Net research and development expenses of EUR 105.6 million were up from EUR 99.3 million reported in 2022, thereby constituting 17.2 % of revenues in 2023 after 14.0 % in the prior year. Capitalization of development expenses of EUR 45.8 million in 2023 were above the EUR 42.1 million seen in 2022 in particular due to the capitalization of software development projects. The capitalization rate in 2023 amounted to 30.3 % (prior year: 31.1 %).

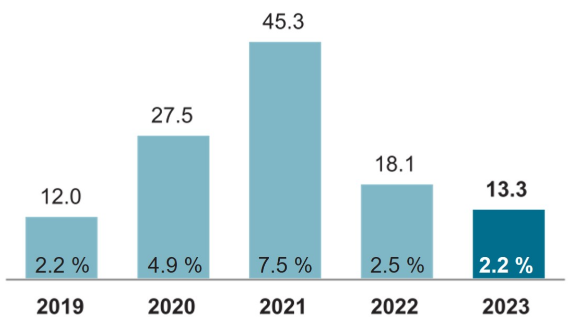
Adtran Networks' research and development activities are driven by the distinct emphasis on differentiating its innovative connectivity solutions for cloud and mobile services and working with customers and partners to identify and meet their current and future needs. The resulting key technologies and products simplify complicated existing network structures and supplement existing solutions.

During 2023, research and development activities were further focused on the following three technology areas:

- Enhancements to the open optical transport solution including the development of the new TeraFlex™[13] terminal and a new generation of open line system (OLS[14])
- A new generation of 100G products including network functions virtualization (NFV[15]) software for the company's cloud access[16] portfolio
- Ultra-precise synchronization technologies for 5G mobile networks and other industry verticals.

Operating income

(in millions of EUR and relative to total revenues)



[13] Brand name for Adtran Networks' high-speed terminal, which generates data rates of up to 600Gbit/s per wavelength. TeraFlex™ is a so-called open terminal (OT) and part of the Adtran Networks FSP 3000 platform.
[14] An optical transmission system basically consists of two main components. The terminal generates and receives the optical signals. The line system bundles wavelengths and amplifies the signal power. In an open system architecture, terminals and line systems can be deployed independently and openly combined with third-party equipment.
[15] NFV is an alternative design approach for building complex IT applications, particularly in the telecommunications and service provider industries. NFV virtualizes entire classes of functions into building blocks that may be connected, or chained, together to create services. With the introduction of NFV, the architecture of service provider networks will change. Functions that were previously tied to a particular network element can now be hosted centrally leading to a new distribution of hardware and software functionality across networks.
[16] This marketing term is often used as an umbrella for technologies that play a role in accessing the cloud.

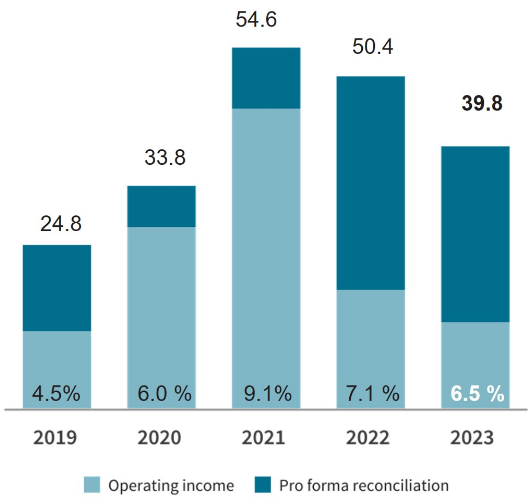
Net other operating income and expenses amounted to positive EUR 11.0 million in 2023, slightly up from positive EUR 10.5 million in the prior year. In 2023, this item includes in particular grants for research projects and the reversal of provisions recognized in previous periods. In addition, income from the provision of services to Adtran Holdings, Inc. and its subsidiaries was recognized for the first time in 2023. In 2022, this item was mainly impacted by grants for research projects as well as the de-recognition of liabilities and reversal of provisions recognized in prior periods.

Total operating expenses decreased from EUR 220.0 million in 2022 to EUR 205.3 million in 2023, representing 33.4 % of revenues in 2023 after 30.9 % in the prior year.

Overall, Adtran Networks reported a decreased operating income of EUR 13.3 million in 2023 after an operating income of EUR 18.1 million in the prior year. The decline in operating result is largely due to the negative development of revenues, which was only partially offset by improved gross margins and cost savings in the past financial year as a result of restructuring measures.

Pro forma EBIT[17]

(in millions of EUR and relative to total revenues)



Pro forma EBIT represents one of the four key performance indicators for the group. As pro forma EBIT excludes non-cash charges related to stock compensation, impairment of goodwill and amortization of intangibles assets recognized in business combinations as well as non-recurring expenses related to M&A and restructuring measures, Adtran Networks' management board believes that pro forma EBIT is a more appropriate measure than operating income when benchmarking the group's operational performance against other telecommunications equipment providers.

The pro forma EBIT clearly decreased from EUR 50.4 million in 2022 to EUR 39.8 million in 2023.

The reconciliation of operating profit to pro forma operating profit is as follows:

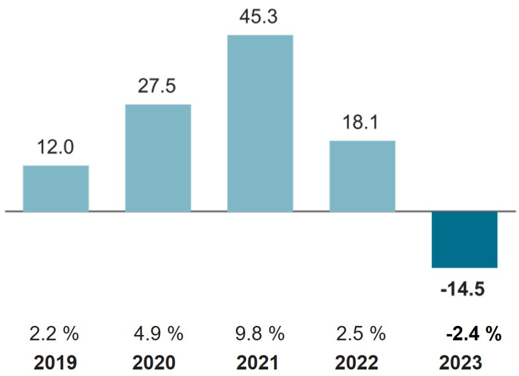
(in millions of EUR)	2023	2022
Operating income	**13.3**	**18.1**
Expenses related to share-based compensation	5.3	3.7
Amortization of intangible assets from business combinations	3.3	3.7
Impairment of goodwill	4.5	3.5
Expenses related to M&A transactions, integration and restructuring expenses	13.4	21.3
Pro forma EBIT	**39.8**	**50.4**

In 2023, the expenses related to M&A transactions, integration and restructuring expenses included restructuring expenses of EUR 12.3 million (prior year: EUR 1.6 million). The significant increase in restructuring expenses is the result of cost consolidation measures initiated at the end of 2022, particularly in the area of personnel. The previous year's figure included high costs in connection with the corporate transaction with Adtran Holdings, Inc.

[17] Pro forma EBIT is calculated prior to non-cash charges related to the stock compensation programs and amortization and impairment of goodwill and acquisition-related intangible assets. Additionally, non-recurring expenses related to M&A and restructuring measures are not included.

Net income (loss)

(in millions of EUR and relative to total revenues)



Given the substantially decreased operating income combined with the significantly higher income tax charges and the negative financial result, compared to 2022, Adtran Networks reported a net loss of EUR 14.5 million for 2023, after a net income of EUR 18.1 million in 2022. Beyond operating income, the net result in 2023 included net interest expenses of EUR 3.3 million (prior year: EUR 2.1 million) and net other financial loss of EUR 4.0 million (prior year: net other financial gain of EUR 4.1 million). Other financial gains and losses mainly relate to the translation of foreign currency assets and liabilities and to gains and losses on hedging instruments.

In 2023, the group reported an income tax expense of EUR 20.5 million after an income tax expense of EUR 1.9 million in 2022, representing a tax rate of 341.37 % (previous year: tax rate of 9.64 %). The current tax expense in 2023 mainly results from the reversal of deferred tax assets on the tax loss carryforwards of Adtran Networks SE, while the tax expense in 2022 resulted in particular from tax charges on the actual IFRS income, which were only partially offset by the increase in deferred tax assets on the tax loss carry forwards of Adtran Networks SE.

Earnings per share

Basic and diluted earnings per share were negative EUR 0.28 each, in 2023 after positive EUR 0.35 each in 2022, respectively. Basic average shares outstanding increased by 0.3 million to 52.0 million in 2023, due to capital increases from the exercise of stock options. Diluted weighted average shares outstanding were at 52.0 million in 2023. A dilution effect was not to be taken into account due to the consolidated net loss for the year.

Summary: Business development and operational performance

Despite an increase in the gross margin in 2023 compared to the previous year and the reduction in operating costs, the operating result deteriorated in connection with declining revenues. Adtran Networks reports a consolidated net loss for the year 2023, in particular due to a sharp increase in tax expenses.

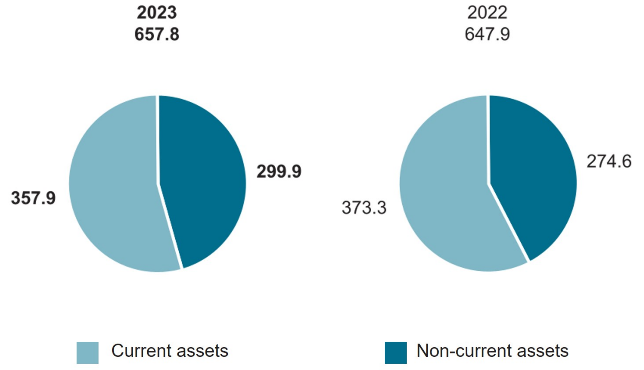
Net assets and financial position of the group

Balance sheet structure

Adtran Networks' total assets slightly increased by EUR 9.8 million or 1.5 %, from EUR 647.9 million at year-end 2022 to EUR 657.8 million at the end of 2023.

Assets

(on December 31, in millions of EUR)



Current assets decreased by EUR 15.5 million or 4.1 % from EUR 373.3 million on December 31, 2022, to EUR 357.9 million on December 31, 2023, and comprised 54.4 % of the balance sheet total after 57.6 % at the end of the prior year. The decrease in current assets was mainly driven by a clear decline in cash and cash equivalents by EUR 27.9 million to EUR 30.6 million as of December 31, 2023. This related in particular to the negative development of results and the need for increased investments in net working capital[18] especially in relation to trade accounts payable. Trade accounts receivable largely decreased from EUR 123.7 million to EUR 115.6 million at the end of December 2023. DSOs[19] deteriorated significantly from 55 days reported in 2022 to 71 days in 2023. Inventories were down by EUR 22.6 million to EUR 106.3 million. This decline is due in particular to lower material purchases as a result of the end of the supply chain crisis. Inventory turns decreased from 3.9x in 2022 to 3.3x in 2023. At the same time, other current assets significantly increased in particular due to increased receivables from funded research projects by EUR 18.7 million to EUR 78.2 million at year-end 2023.

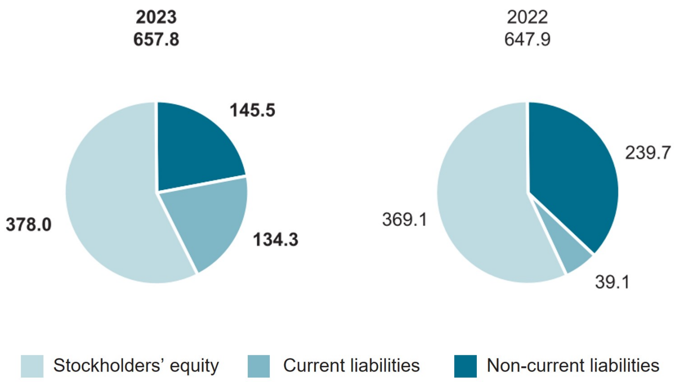
Non-current assets increased by EUR 25.4 million from EUR 274.6 million at year-end 2022 to EUR 299.9 million on December 31, 2023. This increase results in particular from the increase in other non-current assets by EUR 17.2 million to EUR 23.3 million at the current year-end, particularly in connection with increased receivables from funded research projects. Right-of-use assets from lease agreements increased to EUR 28.3 million at the end of 2023 after EUR 18.6 million at the end of the previous year, primarily due to the conclusion of a new lease agreement for offices. Property plant and equipment increased by EUR 4.0 million mainly due to investments in the extension of the production facility in Meiningen. Capitalized development projects increased from EUR 98.0 million to EUR 104.6 million at year-end 2023 mainly driven by the capitalization of software development. At the same time, intangible assets from business combinations decreased from EUR 8.5 million in 2022 to EUR 5.2 million at the end of 2023, in particular due to scheduled amortization. Goodwill was impacted by an impairment charge as well as by exchange rate effects overall resulting in a reduction by EUR 6.4 million to EUR 64.9 million at the end of 2023. Deferred tax assets (after netting) decreased by EUR 4.8 million to EUR 11.7 million at the end of 2023 mainly due to the decline of deferred tax asset on tax loss carry forwards of Adtran Networks SE. Deferred tax assets and liabilities are presented net in accordance with relevant netting requirements.

Meaningful additional assets belonging to Adtran Networks are the broad and global customer base of several hundred service providers and thousands of enterprises, the Adtran Networks, Oscilloquartz and Ensemble[20] brands, the vendor and partner relationships and a highly motivated and skilled global team. These assets are not recognized in the balance sheet. Customer satisfaction as measured by the net promoter score[21] represents one of the group's four key performance indicators.

[18] Net working capital is defined as the sum of trade receivables and inventories less trade payables.
[19] Days Sales Outstanding: The key figure describes the average number of days between invoicing and receipt of payment.
[20] Ensemble is a trademark used by Adtran Networks for the company's software solutions.
[21] The NPS is obtained by asking customers a single question on a 0 to 10 rating scale: "How likely is it that you would recommend our company to a friend or colleague?". Based on their responses, customers are categorized into one of three groups: promoters (9–10 rating), passives (7–8 rating), and detractors (0–6 rating). The percentage of detractors is then subtracted from the percentage of promoters to obtain a net promoter score.

Liabilities

(on December 31, in millions of EUR)



With respect to equity and liabilities, current liabilities decreased by EUR 94.2 million from EUR 239.7 million at year-end 2022 to EUR 145.5 million at the end of 2023. The decline is mainly due to a significant decrease of trade accounts payables by EUR 45.6 million to EUR 43.1 million at the end of 2023. DPO[22] declined to 62 days in 2023 compared to 65 days in the previous year. The decrease in trade accounts payable relates to the decreased number of inventories and resulted in particular from lower material purchases. In 2023, current liabilities to banks were fully repaid. Due to a new factoring agreement concluded at the end of 2023, the Group continues to report a liability to banks as at December 31, 2023. The financial liabilities are explained in more detail in a separate section below. Other current liabilities at the end of 2023 include in particular obligations from subsidized research projects and decreased by EUR 7.6 million compared to December 31, 2022. The decrease is in particular due to the fact that the liabilities to employees from variable remuneration components included in previous years will be paid out monthly with the basic salary as from 2023.

Non-current liabilities at EUR 134.3 million at year-end 2023 were significantly up from EUR 39.1 million reported at prior year-end. In 2023, joint financing was provided by Adtran Holdings, Inc., which led to the recognition of a loan to Adtran Holdings, Inc. in the amount of EUR 52.8 million at year-end 2023. The financial liabilities are explained in more detail in a separate section below. A further factor was the significant increase in other non-current liabilities from EUR 4.8 million at the end of 2022 to EUR 22.4 million as at December 31, 2023 due to increased obligations from funded research projects. Deferred tax liabilities increased by EUR 9.3 million to EUR 12.2 million as of December 31, 2023. In addition, non-current liabilities from leases were EUR 9.7 million higher at EUR 25.3 million in particular due to the new rental agreements.

Stockholders' equity increased slightly by EUR 8.9 million from EUR 369.1 million at year-end 2022 to EUR 378.0 million at the end of 2023. The negative effect from the consolidated net loss for the year was offset by the loss absorption of the result of Adtran Networks SE by Adtran Holdings, Inc. In 2023, capital increases totaling EUR 0.3 million from the exercise of stock options were reported.

[22] Days Payable Outstanding: The key figure indicates the average number of days between receipt of invoice and outgoing payment.

Balance sheet ratios

The equity ratio clearly improved to 57.5 % at the end of 2023, after 57.0 % at year-end 2022. The non-current assets ratio amounted to 126.0 % on December 31, 2023, with stockholders' equity fully covering the non-current assets.

(on December 31, in %)		2023	2022
Equity ratio	Stockholders' equity / Total assets	57.5	57.0
Non-current asset ratio	Stockholders' equity / Non-current assets	126.0	134.4
Liability structure	Current liabilities / Total liabilities	52.0	86.0

Capital expenditures

Capital expenditures for additions to property, plant and equipment in 2023 amounted to EUR 19.0 million, up from EUR 17.5 million in 2022, largely reflecting higher investments in connection with the expansion of the Meiningen production facility.

Capital expenditures for intangible assets of EUR 49.2 million in 2023 were down from EUR 55.7 million in the prior year. This total consists of capitalized development projects of EUR 45.8 million in 2023 after EUR 42.1 million in 2022, and investments in concessions, software licenses and other intangible assets of EUR 3.4 million in 2023 after EUR 13.6 million in 2022. Investments in capitalized development projects are mainly driven by development activities for open optical transmission technology including the new SFlex™ terminals and Adtran Networks' new generation of cloud access products with data rates of 100Gbit/s and network synchronization solutions.

Cash flow

(in millions of EUR)	2023	Portion of cash	2022	Portion of cash
Operating cash flow	37.6	123.1 %	14.8	25.4 %
Investing cash flow	(64.0)	209.6 %	(73.1)	125.0 %
Financing cash flow	(0.2)	0.5 %	5.4	9.2 %
Net effect of foreign currency translation on cash and cash equivalents	(1.3)	4.3 %	2.3	4.0 %
Net change in cash and cash equivalents	**(27.9)**	**91.3 %**	**(50.5)**	**86.5 %**
Cash and cash equivalents at the beginning of the period	58.4	191.3 %	109.0	186.5 %
Cash and cash equivalents at the end of the period	**30.6**	**100.0 %**	**58.4**	**100.0 %**

Cash flow from operating activities of EUR 37.6 million in 2023 was significantly up by EUR 22.8 million from EUR 14.8 million in 2022. This increase was mainly due to the significantly decrease in cash outflows for working capital.

Cash flow from investing activities was negative EUR 64.0 million in 2023 after negative EUR 73.1 million in the prior year. In 2023, capital expenditures for property, plant and equipment as well as for capitalized development projects and other intangible assets increased compared to the previous year, while at the same time investments in other intangible assets fell. In the previous year, this item included investments from a joint development agreement. In addition, 2023 includes inflows from the sale of debt instruments of other companies from a factoring agreement concluded at the end of 2023 in the amount of EUR 3.9 million.

Finally, cash flow from financing activities was at negative EUR 0.2 million in 2023 down compared to the level of positive EUR 5.4 million in 2022. The net cash outflow in in 2023 mainly resulted from scheduled repayments and interest payments for existing liabilities to banks and to Adtran Holdings, Inc. This outflow is offset in 2023 by inflows from financial liabilities in connection with a new factoring agreement in the amount of EUR 13.3 million.The net cash inflow in 2022 resulted in particular from the utilization of existing credit lines to finance working capital. In addition, higher inflows from the exercise of stock options were taken into account in 2022.

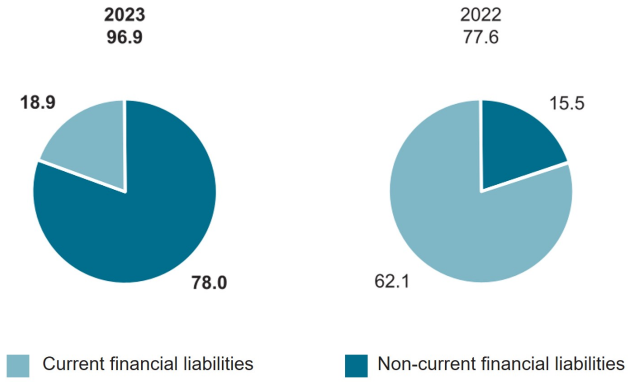
Overall, including the net effect of foreign currency translation on cash and cash equivalents of negative EUR 1.3 million (2022: positive EUR 2.3 million), cash and cash equivalents again significantly decreased by EUR 27.9 million in 2023, from EUR 58.4 million at year-end 2022 to EUR 30.6 million at the end of 2023, after a decrease of EUR 50.5 million in the prior year.

Financing and liquidity

Adtran Networks' financial management is performed centrally by Adtran Networks SE. Its objective is to provide sufficient funds to ensure ongoing operations and to support the group's projected growth. Beyond the strong equity base appropriate for the business, Adtran Networks finances its business by means of loans provided by Adtran Holdings, Inc. and liabilities with maturities typically exceeding the useful life of the assets being financed. For any liability taken, Adtran Networks is focused on minimizing related interest cost, as long as access to funds is not at risk. Excess funds are generally used to redeem liabilities.

Financial liabilities

(on December 31, in millions of EUR)



In 2023, financial liabilities increased by EUR 19.3 million to EUR 96.9 million at the end of 2023. Current liabilities to banks due to loan agreements of EUR 56.4 million at the end of 2022, were fully repaid and replaced by financing via Adtran Holdings, Inc. in the maximum amount of USD 75 million, which can be drawn and repaid at any time. At the end of 2023, USD 57.5 million (EUR 52.8 million) had been drawn from this financing facility. They are reported under non-current financial liabilities due to the contract term until 2028. Due to a new factoring agreement concluded at the end of 2023, the Group continues to report a current liability to banks as at December 31, 2023.

Current lease liabilities slightly decreased by EUR 0.1 million, to EUR 5.6 million at the end of December 2023 while non-current lease liabilities increased by EUR 9.7 million to EUR 25.3 million.

Further details about the group's financial liabilities can be found in notes (14) and (15) to the consolidated financial statements.

Net cash[23]

Net cash represents one of the four key performance indicators for the group. Mainly as a result of the decline in cash and cash equivalents, Adtran Networks' net cash declined significantly by EUR 23.2 million from net debt of EUR 19.2 million at year-end 2022 to net debt of EUR 42.4 million at the end of 2023. Cash and cash equivalents of EUR 30.6 million on December 31, 2023, and of EUR 58.4 million on December 31, 2022, were invested mainly in euro, USD and in GBP.

[23] Net cash is calculated by subtracting total financial liabilities from cash and cash equivalents. Total financial liabilities comprise current and non-current financial liabilities to banks, including factoring agreements, as well as current and non-current financial receivables and liabilities to Adtran Holdings Inc., including receivables and liabilities from the domination and profit and loss transfer agreement and current and non-current lease liabilities in accordance with IFRS 16 Leases. A negative calculation result is referred to as net debt.

Net cash/(debt) as of December 31 is calculated as follows:

(in millions of EUR)	2023	2022
Liabilities to banks		
current	(13.3)	(56.4)
non-current	—	—
Financial liabilities to Adtran Holdings, Inc.		
non-current	(52.8)	—
Lease liabilities		
current	(5.6)	(5.6)
non-current	(25.3)	(15.6)
Receivable from Adtran Holdings, Inc. due to the control and profit and loss transfer agreement	23.9	—
Cash and cash equivalents	30.6	58.4
Net cash/(debt)	**(42.4)**	**(19.2)**

äAs of December 31, Adtran Networks reports liquidity ratios as follows:

		2023	2022
Cash ratio	Cash and cash equivalents / Current liabilities	0.21	0.24
Quick ratio	Monetary current assets* / Current liabilities	1.00	0.76
Current ratio	Current assets / Current liabilities	2.46	1.56

* Monetary current assets are defined as the sum of cash and cash equivalents, short-term investments and securities and trade accounts receivable.

Return on capital employed (ROCE[24])

Return on capital employed in 2023 was at 3.0 %,down from 4.4 % reported in 2022. The decrease is mainly due to the lower operating result in 2023. Capital employed increased by EUR 18.0 million, in particular due to the increase in total assets in 2023.

(base data in millions of EUR)		2023	2022
Operating income		13.3	18.1
Average total assets*		646.4	625.9
Average current liabilities*		209.4	211.9
ROCE	Operating income / Ø total assets – Ø current liabilities	**3.0 %**	**4.4 %**

* Arithmetic average of five quarterly period-end values (Dec. 31 of the prior year and Mar. 31, Jun. 30, Sep. 30 and Dec. 31 of the year).

Summary: Net assets and financial position

Despite the significant improvement in cash flow from operating activities, cash and cash equivalents significantly decreased. Nevertheless, Adtran Networks' net assets and financial position remains stable in 2023.

Transactions with related parties

Transactions with related individuals and legal entities are discussed in notes (39) and (40) to the consolidated financial statements.

[24] ROCE is the operating result for the current period divided by the capital employed. The capital employed is the difference between the average balance sheet total and the average current liabilities of the period, calculated as the arithmetic average of the quarterly balance sheet date values.

Performance of Adtran Networks SE

In addition to reporting on the Adtran Networks Group, the development of Adtran Networks SE is explained below.

Adtran Networks SE prepares its annual financial statements in accordance with the provisions of the German Commercial Code. The corresponding complete financial statements are published separately.

Offices and organization

The company maintains its registered office in Meiningen, Germany. This is also the location of the main production and development facility of the company. In Martinsried/Munich, the company maintains its headquarter with all central functions and the sales and marketing organization. Furthermore, Adtran Networks maintains some small to midsize national and international offices.

Operational performance

In the past financial year, Adtran Networks SE generated sales totaling EUR 431.3 million. This corresponds to a decrease of 15.2 % compared to sales of EUR 508.8 million in the previous year. Despite substantial order backlogs at the beginning of the year, the easing of the semiconductor crisis led to a weakening of demand among most customers due to high inventories, particularly in the market segments of telecommunications service providers and Internet content providers (ICPs).

EMEA remained the most important sales region in 2023, followed by the Americas and Asia-Pacific. Sales in EMEA decreased by 16.5 % from EUR 340.5 million to EUR 284.3 million. The share of total sales decreased from 66.9 % in 2022 to 65.9 % in 2023. Despite the decline in sales, Adtran Networks SE is strong in the EMEA region and is achieving good success with its mature partner strategy and broad, loyal customer base. In the Americas region, sales fell by 2.3%, from EUR 99.1 million in 2022 to EUR 96.8 million in 2023. This is also due to lower demand from telecommunications service providers and internet content providers, while the regional share of total annual sales increased to 22.4 % in 2023 after 19.5 % in 2022. In the Asia-Pacific region, sales decreased by 27.7 % from EUR 69.3 million in 2022 to EUR 50.1 million in 2023. The decline is due to a drop in demand from key customers as a result of high inventory levels. The Asia-Pacific region contributed 11.6 % to total sales in 2023, compared to 13.6 % in 2022.

Cost of sales decreased from EUR 327.0 million in 2022 to EUR 270.0 million in 2023. The share of sales of 62.6 % decreased compared to the previous year (64.3 %).

Gross profit decreased from EUR 181.8 million or 35.7 % of sales in 2022 to EUR 161.3 million or 37.4% of sales in 2023. The company's gross profit is influenced by shifts in the regional distribution of sales and changes in the customer and product mix.

Selling and marketing expenses increased from EUR 33.8 million in 2022 to EUR 41.1 million in 2023, mainly due to higher recharges from group companies.

General administrative expenses fell from EUR 39.2 million in 2022 to EUR 24.7 million in 2023. The decrease versus 2022 is due to significant lower legal and consulting services in connection with the business combination with Adtran Holdings in 2022.

After increased capitalization of internally generated intangible assets worth EUR 45.8 million in 2023 compared to EUR 42.1 million in the previous year, research and development costs amounted to EUR 119.6 million or 27.7 % of sales compared to EUR 117.5 million or 23.1 % of sales in the previous year.

Other operating result (other operating income less other operating expenses) fell significantly from EUR 34.2 million in the previous year to EUR 1.4 million in 2023. Other operating result in 2022 was largely impacted by the disclosure of hidden reserves of assets when contributed to Adva Network Security GmbH, Berlin.

In 2023 income from affiliated companies was distributed to the company in the amount of EUR 10.9 million. This investment income resulted from dividend distributions from Adtran Networks North America Inc (Norcross/Atlanta, USA), Adtran Networks (UK) Ltd (York, United Kingdom), Adtran Networks Singapore Pte Ltd (Singapore) and Oscilloquartz SA (Saint-Blaise, Switzerland). There were no profit distributions in the previous year.

Summary: Operational performance

Predominantly the decline in revenues combined with higher operating cost led to the significant negative result after taxes, which was fully offset by the loss absorption by Adtran Holdings, Inc..

Net assets and financial position

Adtran Networks SE's total assets decreased by EUR 17.4 million to EUR 462.5 million as at December 31, 2023, compared to EUR 479.9 million on the previous year's reporting date.

Fixed assets decreased from EUR 222.3 million to EUR 219.2 million and now account for 47.4 % of the balance sheet total, compared to 46.3 % at the end of the previous year. The decrease in fixed assets is mainly due to the reduction in financial assets, in which shares in affiliated companies fell by EUR 9.5 million from EUR 74.3 million to EUR 64.8 million. In addition, loans to affiliated companies fell by EUR 3.3 million from EUR 5.1 million to EUR 1.8 million in the financial year due to scheduled repayments. The reduction in financial assets is offset by the increase in internally generated industrial property rights and similar rights by EUR 6.0 million from EUR 117.5 million to EUR 123.5 million and by the increase in property, plant and equipment by EUR 4.2 million from EUR 17.7 million to EUR 21.9 million. Current assets decreased in the financial year from EUR 254.7 million in the previous year to EUR 240.5 million. Current assets therefore accounted for 52.0% of total assets as at December 31, 2023, compared to 53.1% at the end of 2022. The reduction in current assets is mainly due to the decrease in inventories from EUR 122.2 million in the previous year to EUR 118.1 million in 2023. This reduction is due to the decrease in orders for materials and the increased depreciation of old materials. Furthermore, current assets decreased from EUR 14.4 million in the previous year to EUR 8.0 million due to the decline in cash and cash equivalents.

Equity increased from EUR 278.0 million at the end of 2022 to EUR 278.4 million at the end of 2023 and amounted to 60.2 % of total assets after 57.9 % at the previous year's reporting date.

Liabilities decreased from EUR 164.8 million in the previous year to EUR 147.4 million. This change is mainly the result of the reduction in liabilities to banks by EUR 59.1 million due to repayments of utilized credit lines and the reduction in trade payables by EUR 23.1 million. These reductions were offset by the EUR 74.3 million increase in liabilities to affiliated companies. Provisions fell from EUR 26.0 million in the previous year to EUR 22.0 million at the end of 2023. Deferred income increased from EUR 11.1 million in the previous year to EUR 14.7 million in 2023 .

Capital expenditures

Investments in the 2023 financial year totaled EUR 59.8 million (previous year: EUR 96.2 million). Of this amount, EUR 49.1 million (previous year: EUR 55.6 million) was invested in intangible assets, EUR 10.5 million (previous year: EUR 8.4 million) in property, plant and equipment and EUR 0.3 million in financial assets (previous year: EUR 32.2 million). The investments in intangible assets result in particular from the addition of internally generated industrial property rights and similar rights and assets. Investments in property, plant and equipment primarily include expenditure on measuring and testing equipment and for the Terafactory, which was under construction until the middle of the year. The investments in financial assets relate to loans to affiliated companies.

Liquidity

The development of cash and cash equivalents analyses as follows:

(in millions of EUR)	**2023**	**2022**
Operating cash flow	108.6	17.7
Investing cash flow	(56.2)	(78.9)
Financing cash flow	(58.8)	13.2
Net change in cash and cash equivalents	**(6.4)**	**(47.9)**
Cash and cash equivalents at the beginning of the year	14.4	62.3
Cash and cash equivalents at the end of the year	**8.0**	**14.4**

During 2023 and 2022, the company was able to meet all payment obligations.

Cash and cash equivalents of EUR 8.0 million as at December 31, 2023 and EUR 14.4 million as at December 31, 2022 were largely denominated in euros and US dollars. The reduction of EUR 6.4 million resulted in particular from the increase in payment obligations. As a result, net liquidity decreased compared to the previous year. Net liquidity is calculated by subtracting total financial liabilities from cash and cash equivalents. Total financial liabilities comprise current financial liabilities to a new factoring agreement concluded as at December 19, 2023 as well as current and non-current financial receivables and liabilities to Adtran Holdings Inc. receivables from the control and profit and loss transfer agreement.

Financing

Liabilities to banks decreased from EUR 63.3 million at the end of 2022 to EUR 4.2 million at the end of 2023 and consisted exclusively of a current financial liability in connection with a new factoring agreement concluded in 2023, whereby the main credit risks were not transferred. Existing credit lines with banks were fully repaid and replaced by financing via Adtran Holdings, Inc. in the maximum amount of USD 75 million, which can be drawn down and repaid at any time. At the end of 2023, USD 57.5 million (EUR 52.8 million) had been drawn down from this credit line. It is reported under non-current financial liabilities due to the contractual term until 2028. There is also a short-term intercompany loan with Adva Network Security GmbH in the amount of EUR 5.0 million as at the end of 2023.

Dividend payments

In 2023 there were no dividend payments for 2022 (prior year: nil for 2021). Adtran Networks SE does not plan to pay out a dividend for 2023.

Summary: Net assets and financial position

Despite the significant improvement in operating cash flow, cash at banks and in hand decreased. Nevertheless, Adtran Networks SE's net assets and financial position remains stable in 2023.

Events after the balance sheet date

There were no events after the balance sheet date that have a material impact on the net assets and financial position or the results of operations.

Disclosures under takeover law in accordance with Section § 289a (1) HGB and Section § 315a (1) HGB

Share capital and shareholder structure

On December 31, 2023, Adtran Networks SE had issued 52,054,500 no-par value bearer shares (December 31, 2022: 52,004,500). The common shares entitle the holder to vote at the Annual Shareholders' Meeting and to receive dividends in case of a distribution. No restrictions are attached to the common shares. No other class of shares had been issued during the reporting period.

At year-end 2023, Adtran Holdings, Inc., located at 901 Explorer Blvd NW, Huntsville, AL 35806, United States, held a total of 33,957,538 shares or 65.32 %* of the share capital of Adtran Networks SE (at year-end 2022: 33,957,538 representing 65.3 % of the share capital).Samson Rock Event Driven Master Fund Limited held a total of 5,100,000 shares representing 10.02 % including instruments. No other shareholder has filed with the company to hold more than 10 % of the company's shares outstanding on December 31, 2023. Further details on share capital and shareholder structure are disclosed in note (20) to the consolidated financial statements.

* Capital shares refer to the total number of shares held in relation to the share capital as of December 31, 2023.

Restriction of voting rights and share transfers

At year-end 2023, the management board of Adtran Networks SE had no knowledge of any restrictions related to voting rights or share transfers.

Appointment and dismissal of management board members

The appointment and dismissal of members of the management board of Adtran Networks SE follows the direction of the German Stock Corporation Act (Aktiengesetz, AktG), the German SE Implementation Act (SE-Ausführungsgesetz, SEAG) as well as the provisions in section 6 of the company's current articles of association (last amended by the supervisory board resolution on January 2, 2024, which was registered with the commercial register on February 13, 2024). According to these articles, in principle the supervisory board appoints the members of the management board and does so for a maximum period of five years. However, it is the company's practice to appoint the members of the management board for two years only. Repeated appointment is possible. According to the company's statutes, the management board of Adtran Networks SE shall regularly consist of two individuals and the supervisory board shall have the right to determine and appoint a higher number of individuals. If the management board consists of more than one individual, the supervisory board may appoint one member of the management board chief executive officer or speaker of the management board and another member his or her deputy. The supervisory board may revoke an already effective appointment for important reasons. Scott St. John resigned as member of the management board effective January 21, 2023. Christoph Glingener has resigned as the chairman of the management board with effect June 30, 2023. Thomas Richard Stanton was appointed new chairman of the management board with effect from July 1, 2023 until December 31, 2024. Until January 21, 2023, Adtran Networks SE's management board consisted of Christoph Glingener (chief executive officer), Ulrich Dopfer (chief financial officer) and Scott St. John (chief marketing & sales officer). Since January 22, 2023 until June 30, 2023, the Management Board of Adtran Networks SE consisted of Christoph Glingener (Chief Executive Officer) and Ulrich Dopfer (Chief Financial Officer). Since July 1, 2023 the management board consists of Thomas Richard Stanton (chief executive officer), Christoph Glingener (chief technology officer) and Ulrich Dopfer (chief financial officer).

Changes to articles of association

Following article 9 SE Regulation in conjunction with section 51 SEAG, amendments to the articles of association of Adtran Networks SE are made pursuant to section 179 German Stock Corporation Act (Aktiengesetz, AktG) in conjunction with Section 133 German Stock Corporation Act (Aktiengesetz, AktG) considering a 75 % majority vote, as well as the provisions in section 4 para. 6 and section 13 para. 3 of the current articles of association of the company (last amended by the supervisory board resolution on January 2, 2024, which was registered with the commercial register on February 13, 2024). Accordingly, in principle any changes to the articles of association other than purely formal amendments need to be resolved by the shareholders' meeting. However, the shareholders' meeting has authorized the supervisory board to change the version of the articles of association in accordance with capital increases from authorized capital and conditional capital.

Issuance and buy-back of shares

The rights of the management board to issue new shares are regulated in section 4 paragraphs 4 and 5k of the articles of association (last amended by the supervisory board resolution on January 2, 2024 registered with the commercial register on February 13, 2024), of Adtran Networks SE. According to Adtran Networks SE's current articles of association, the management board is authorized with approval of the supervisory board to increase the capital stock by up to 24,965,477 new shares from authorized capital, amounting to a total of EUR 24,965,477 against cash or contribution in kind with possible exclusion of subscription rights (authorized capital 2019/I). As of December 31, 2023, the authorized capital amounted to EUR 24,965,477, so that at that time the management board was capable of issuing up to 24,965,477 shares, equating to 49.75 % of total shares outstanding. In addition, as of December 31, 2022, a conditional capital of EUR 4,100,469 was recorded in the commercial register (conditional capital 2011/I). The conditional capital can only be used for granting stock option rights to members of the management board, to employees of the company and to management and employees of affiliated companies. The conditional capital increase is put into effect only if and insofar as the holders of the option rights exercise these rights. 50,000 new shares were already created in 2023 as a result of the exercise of stock options but will only be registered in the trade register after the balance sheet date. Thus, the number of shares that can be issued by the management board from the conditional capital is reduced to 3,491,861.

At year-end 2023, the management board was authorized to buy back up to a total of 10.0 % of the existing share capital at the time of resolution by the Annual Shareholders' Meeting or – if this value is lower – at the time the authorization is exercised. This right was granted to the management board until May 21, 2024, by a resolution of the shareholders' meeting on May 22, 2019. Shares bought back may be used for all legally permitted purposes, in particular as consideration for the acquisition of companies, parts of companies or investments in companies, for issuing stock to employees of the company or affiliated companies, for serving share subscription rights from the company's stock option plans, and for redeeming the shares pursuant to the legal provisions.

Takeover bid-driven change of control provisions

At the end of 2023, Adtran Networks SE did not have any financial liabilities with banks and which could be impacted by a change of control.

Definition of aims and terms for the rise of the women portion in the supervisory board, the management board and in both leadership levels below the management board

Following the entry into force of the "Law on Equal Participation of Women and Men in Management Positions in the Private and Public Sector" (FüPoG), the supervisory board of Adtran Networks SE has last set on November 15, 2017, that a women's portion of 33.33 % in the supervisory board shall be maintained until March 31, 2021, and a women's portion of 0% in the management board until December 31, 2021. As of March 31, and December 31, 2021, these shares have been realized.

On February 23, 2021, the supervisory board gave itself a new competence profile for the period that followed. This stipulates that the three-person supervisory board should consist of at least one woman and at least one man until the end of the annual general meeting that decides on the discharge in the 2024 financial year. The status quo of 33.33 % women has thus been updated.

On March 8, 2023, the supervisory board resolved to maintain the current status (0 % proportion of woman) within the management board until December 31, 2023. For setting a target of 0 % the following justification is given: Following the public takeover bid in 2022, a domination and profit and loss transfer agreement with Adtran Holdings, Inc. as the controlling company was entered in the commercial register in January 2023 and thus became effective. The Supervisory Board would like to wait and see how the ongoing integration process develops before adjusting the target figure. In any case, the supervisory board will pay attention to diversity when making new appointments. However, achieving the desired higher proportion of women on the management board continues to be made more difficult by the lower proportion of women with the seniority required for a position on the management board in the professions relevant to the company's business area.

Following the entry into force of the FüPoG, the management board of Adtran Networks SE had set an 8 % women's share for the first management level and a 30 % women’s share for the second management level below the management board; both to be achieved by June 30, 2017. As of June 30, 2017, the women’s portion on the first management level has been 7 %, and 32 % on the second management level, exceeding the self-imposed target on the second management level, but slightly missing the self-imposed target of the first management level. This was due to an in-house change of a reporting line that lifted a male executive from the second to the first management level; besides that, the management structure and team remained unchanged at both management levels. For the following period, Adtran Networks SE's management board has set a target of 7 % for the women's share on the first level of management and of 30 % on the second level of management below management board, both to be achieved until June 30, 2022. As of June 30, 2022, the women’s portion on the first management level has been 9 %, and 37 % on the second management level. This exceeded the self-set target on the first and second management level.

At the end of June 2022, the Management Board of Adtran Networks SE set a 13 % women’s share for the first management level below the Management Board and a 35.2 % women’s share for the second management level below the Management; both to be achieved by June 30, 2027. As of December 31, 2022, the women’s portion on the first management level has been 10 % and 37 % on the second management level. As of December 31, 2023, the women’s portion on the first management level has been 21 % and 36 % on the second management level. This exceeded the self-set target on the first and second management level.

Combined separate non-financial report

Adtran Networks has chosen to prepare a combined separate non-financial report, which can be found in Part 2 of the Sustainability Report. This part is prepared in accordance with the requirements of Section 315b (3) of the German Commercial Code (HGB) and is hereinafter simplified as the “non-financial report”. This non-financial report is prepared in accordance with § 15c in conjunction with 289c to 289e of the German Commercial Code (HGB) and the EU Taxonomy Regulation[25] and has been subjected to a voluntary limited assurance engagement in accordance with ISAE 3000 (Revised) by PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft (PwC) regarding the relevant legal requirements. The non-financial report will be published on the sustainability page in the About Us section of the website www.adva.com at the same time as the annual report on April 18, 2024.

[25] The EU Taxonomy Regulation (EU) 2020/852 is an EU regulation that defines criteria whether business activities are eligible for being rated as ecologically sustainable. It affects companies that are obliged to publish a non-financial report.

Employees

On December 31, 2023, Adtran Networks had 2,101 employees worldwide, including 36 apprentices (prior year: 2,014 including 27 apprentices).

On average, Adtran Networks had 2,069 employees during 2023, up from 2,004 in 2022. Furthermore, there were 44 and 36 temporary employees working for Adtran Networks at year-end 2023 and 2022, respectively.

Personnel expenses in the group increased from EUR 218.2 million in 2022 to EUR 221.9 million in 2023, representing 30.6 % and 36.2 % of revenues, respectively.

On December 31, 2023, Adtran Networks SE had 609 employees, thereof 44 apprentices (prior year: 613 employees, thereof 36 apprentices). This corresponds to a total reduction of 4 employees or 0.7 % compared to the previous year.

The breakdown of employees of Adtran Networks SE by functional area is as follows:

	2023	2022	Change
Purchasing and production	153	160	(7)
Sales, marketing and service	109	117	(8)
Management and administration	97	99	(2)
Research and development	206	201	5
Apprentices	44	36	8
Total employees	**609**	**613**	**(4)**

Personnel expenses in the Adtran Networks SE increased from EUR 60.1 million in 2022 to EUR 60.2 million in 2023, representing 14.1% of revenues in 2023 compared to 11,8 % in 2022.

The employee compensation packages comprise fixed and, at some hierarchy levels, variable elements and stock units. These compensation packages enable employees to participate appropriately in the success of the group, and support employee retention, while at the same time rewarding individual efforts, teamwork, innovation and productivity. Furthermore, they should also enable individual achievements to be recognized as well as promote team spirit, innovation and productivity. In addition, employees are regularly honored for special achievements and extraordinary commitment through the group's Spot Award program. In addition, the group is committed to offering all employees comprehensive on-the-job training, as well as specific continuing education opportunities in order to advance their personal and professional development.

The group offers different types of continuing education programs based on employee development needs. These needs are identified, documented, and reviewed semi-annually, within an electronic performance appraisal and competency management system.

Within Adtran Networks, all relevant local regulations for health and safety in the workplace are complied with, and in some countries are regularly monitored by independent engineering offices for safety in the workplace.

Adtran Networks is committed to the creation of a workplace free of discrimination and harassment. The group recruits, hires, trains and promotes individuals at all job levels without regard to race, religion, ancestry, sexual orientation, marital status, national origin, age, gender and physical or mental disability. Adtran Networks is committed to a fair and equitable workplace where everyone is a respected and valued member of the team. The group's core values (ONE – Ownership, Nurture and Excellence) guide employees and managers in all business activities.

An efficient employee representation without trade union ties is in place on a global basis, reflecting the international employee base and overall orientation of the group.

An efficient employee representation without trade union ties (with a global Works Council - ADVA Works Council and a local Works Council - Betriebsrat at the Meiningen site in Germany) is in place on a global basis, reflecting the international employee base and overall orientation of the group.

At its main production and development facility in Meiningen, Germany, Adtran Networks currently provides 44 apprenticeship positions, whereof 27 lead to professions as electronics technician for equipment and systems, industrial management assistant, electronics technician for information and telecommunications systems and as warehouse logistics expert. In Meiningen, Germany, the company is among the most recognized apprenticeship providers for industrial electronics professions in its region for a long time. In addition, Adtran Networks offers a dual study program in Germany which combines a university degree with firmly integrated practical on-the-job work experience in the company. This enables the students to put the knowledge they have learned into practice in a direct context. Currently 17 students are trained within this program.

Risk and opportunity report

Adtran Networks' future development offers a broad variety of opportunities. It is however also subject to risks, which in certain cases could endanger the group's continued existence. The management board has implemented a comprehensive risk management and internal control system that enables the detection of risks in a timely manner and allows the group to take corrective action and to benefit from identified opportunities. An integral aspect of the group's strategy is its ability to anticipate developments in the marketplace and future customer needs. Special emphasis is given to product development, the quality of the group's products and the validation, selection and oversight of key business partners.

Risk management system

Since Adtran Networks was founded as Adtran Networks SE in 1994, its business has become more diversified. The group markets its products and solutions in part via a variety of distribution partners but has become less dependent on these partners over the years due to continued investment in a direct distribution model in core geographies. Beyond focusing on enhancing revenue and profit predictability, a comprehensive risk management system has been established which is coordinated by the Internal Audit and Risk Management function.

Being a globally operating company, Adtran Networks implemented its risk management system on the basis of applicable laws and regulations and by considering common international standards and best practices such as the COSO[26] framework and the ISO[27] 31000 standard. Additionally, it integrates supporting management systems such as especially the group's compliance management. The management board nevertheless recognizes that a risk management system cannot in all cases prevent the occurrence of events that may cause material damage to the group.

Adtran Networks' strategic goals are set by the parent company, Adtran Holdings. They build the basis for Adtran Networks' risk management system and are organized into four areas: people and culture, growth and profitability, operational efficiency and portfolio and innovation. The strategic goals are reviewed and updated on a yearly basis and constitute the basis for Adtran Holdings' annually updated three year business plan. Adtran Networks' three year business plan is a subset of, and forms an integral part, of Adtran Holdings' three year plan. It is defined by the executive management team of Adtran Networks and reviewed by the supervisory board. Each of the strategic goals is defined in detail and then broken down into specific departmental and individual targets. The strategic goals are traced to each employee so that every individual can focus and be evaluated on the own performance and contribution to Adtran Networks' overall success.

Adtran Networks measures the accomplishment of its strategic goals against revenues, pro forma EBIT and net cash as well as the non-financial criterion of customer satisfaction measured by the net promoter score. These metrics represent the key performance indicators. The Adtran Holdings management board sets target values for all four metrics for the year to come and measures actual values against the target values: revenues, pro forma EBIT and net cash on a monthly basis and the net promoter score on an annual basis. Corrective action is taken quickly should a deviation from the plan occur or be reasonably predicted to occur. This information is summarized and communicated to the management board in monthly, quarterly and yearly reports. Key performance measures on the Adtran Networks' level are revenues, pro forma EBIT and net cash. All of these metrics are measured monthly, quarterly and yearly. The results are presented to, and discussed by the Adtran Networks supervisory board.

Budgets are reviewed on Adtran Holdings level on a monthly basis and adjustments are made if necessary. The Adtran Holdings' accounting, controlling and treasury departments provide to the executive management of Adtran Holdings globally consolidated reports on available cash funds and the development of margins and current assets (e.g., inventories and receivables) on a quarterly basis. These reports also include budgeted, forecasted and actual revenues and expenditures. On the level of Adtran Networks budgets are reviewed quarterly; outcomes of these reviews are reported to the supervisory board. The structure and content of these reports is continuously adapted to the most current requirements.

Adtran Holdings regularly monitors the creditworthiness of its customers, including customers of Adtran Networks, and updates credit limits as needed. Material expenditures and investments must be approved in advance through an electronic purchase order system. In conjunction with continuously updated revenue and cash forecasts, a detailed monthly preview of the anticipated group development within the next three to twelve months is put together and communicated to the management board. Moreover, the group's accounting, controlling and legal departments review potential legal and litigation risks on a quarterly basis in order to obtain a reliable estimate of the potential loss, considering all relevant information and expectations. Adtran Networks' executive management discusses all significant business transactions with the supervisory board and obtains its approval if necessary.

In order to ensure observance of all applicable laws and regulations and to support the group's ongoing growth and internationalization, Adtran Holdings' executive management implemented a compliance management system which applies to,

[26] Five major accounting organizations formed a group known as COSO (Committee of Sponsoring Organizations of the Treadway Commission) to provide guidance on evaluating internal control. They issued this guidance as the COSO Internal Control Framework.
[27] ISO is an organization that defines and publishes internationally valid standards. Several of the ISO standards are relevant to Adtran Networks, including 9001 (quality management), 14001 (environmental management system), 22301 (business continuity management), 31000 (risk management) and 50001 (energy management).

and integrates, Adtran Networks. Key compliance measures include a code of conduct, a range of group-wide policies, the training of employees and the active encouragement to report suspected incidents of non-compliance and to seek support in case of uncertainties or questions.

All implemented measures and processes of the risk management system as well as of the compliance management system are continuously reviewed and improved.

Adtran Networks differentiates between two main categories of risks and opportunities – those considered major and those considered non-material. A risk or opportunity is considered major if its expected net impact on the group's pro forma EBIT is or exceeds EUR 3 million in terms of Adtran Networks' three-year business plan. If not attributable to the pro forma EBIT, Adtran Networks' net income is used as reference. The expected net impact is calculated by multiplying the potential net impact of a particular risk or opportunity with its net likelihood of occurrence. As a result of the integration and harmonization of the risk management systems in all entities of the Adtran Group the assessment of long-term non-financial risks and opportunities is not performed any longer.

For each major risk, the group assigns a dedicated risk owner who is responsible for defining and implementing an adequate and effective response for risk mitigation. Adherence with this process is monitored by Adtran Networks' internal audit and risk management function which conducts structured reviews with each risk owner according to a defined schedule and at a minimum once per quarter. Should any such major risk materialize, the assigned risk owner has the responsibility to immediately report this to the executive management. Independent of specific risk ownership, all employees of Adtran Networks are compelled to escalate additional material risk items directly and informally to Adtran Networks' internal audit and risk management function and the chief financial officer.

Based on the outlined analytical tools and processes, Adtran Networks ranked 16 risks as major risks at the end of 2023 all of which are financial risks (end of 2022: 16), which are discussed in detail below.

Adtran Networks' risks are aggregated by means of Monte Carlo simulations. The total risk is compared to Adtran Networks' risk bearing capacity to identify potentially existence-threatening accumulations of risks. If the aggregated risk exceeds the risk bearing capacity, the management board is immediately informed to initiate counter measures and to reduce the risk exposure.

Based on its review of the internal control and risk management system and the reporting of the internal audit function, the executive management of Adtran Networks is not aware of any circumstances that would speak against the adequacy and effectiveness of these systems[28].

The risks and opportunities of Adtran Networks essentially correspond to those of the Adtran Networks group. In addition to the risks listed here, there is also a risk with regards to the fluctuation of income from investments and the recoverability of shares in affiliated companies. Adtran Networks does not consider these risks to be material.

[28] The disclosures in this paragraph are so-called non-management report disclosures as defined in the basis of preparation section of this combined management report.

Major risks 2024-2026

1 Inability to perform new customer product introductions/homologations

2 Geopolitical risks (Geopolitical and trade)

3 Global economic slowdown (Macroeconomic risks)

4 Uncompetitive product(s) due to delayed release(s)

5 Bribery and compliance violations by intermediaries

6 Financial risk

7 Risk of operational supply gaps caused by interrupted supply chains

8 Excessive or obsolete inventory

9 Uncompetitive product due to technological disruption (actualized)

10 Data breach or network/service outage occur due to a security issue in deployed products

11 Inability to retain the talent with the competencies required to meet key objectives

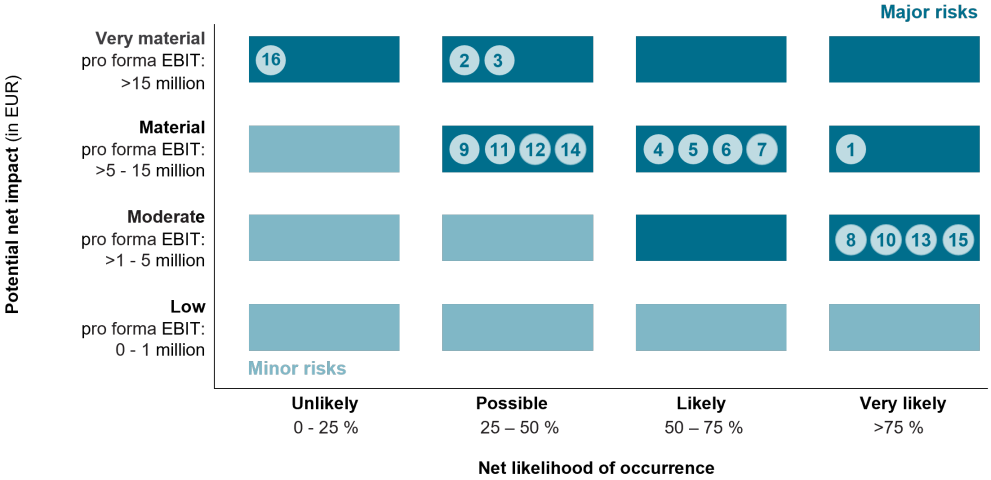
12 Uncompetitive product cost

13 Harassment or discrimination claims or proceedings

14 New legal requirements and over-regulation

15 Cyber-risks

16 Unsatisfying Product Quality (unsatisfying supplier and manufacturing quality)



Growth and profitability risks

Macroeconomic risks (possible; very material)

As an international player, Adtran Networks is exposed to the economic cycles of many countries and territories of the world. Economic downturns may lead to a reduced demand for telecommunication equipment and, as a consequence, may lead to a reduction of revenues and margins. In the years 2021 to 2022 many national economies recovered from the Covid pandemic and many industries saw continuously strong demands which could not be satisfied by existing capacities. Due to the partially massive demand overhangs, and fueled by other factors such as the Ukraine war, prices increased on large scale leading to record-high inflation rates. In many countries raw material prices and energy costs doubled or tripled leading to high additional expenses for private and business customers. Central banks were and are combating inflation with their usual sets of tools, most importantly by increasing the prime rates which resulted in a substantial increase of loan interest rates. The high interest rates paired with a great level of uncertainty about the future development of businesses, changes in labor markets, political decisions and private incomes led to a significant decrease in private and business consumption. While the economic decline and the particular pressure on the telecommunications market is factored in, in our 2024 operating plan, the magnitude of the decline might exceed the assumed scale.

Geopolitical risks (possible; very material)

This risk encapsulates the potential negative impacts on global and regional markets due to geopolitical tensions, trade disputes, and political instabilities. These factors contribute to an unpredictable business environment, affecting supply chains, market access, and overall economic stability. The global business operations of Adtran Networks are being threatened by conflicts or rising tensions between countries which could lead to sanctions, trade embargoes, or military actions, impacting global trade relations. Among the risk factors are changes in government, policy unpredictability, or internal conflicts within countries that can affect Adtran Networks business operations and market conditions, wars and armed conflicts between countries (such as the continuing Russian invasion of Ukraine) and activities of terrorist organizations (which led to the Israel-Hamas armed conflict). Consequences of this risk realization could be incarnated in difficulties in sourcing materials, increased costs, and delays in production and delivery, restrictions on market entry, increased tariffs, and non-tariff barriers affecting competitiveness and profitability and shifts in consumer preferences and demands due to economic uncertainty or nationalistic sentiments. The executive management of Adtran Networks chose to adopt the following mitigation strategies: reducing when possible the dependency on a single country or region for supplies, adapting business strategies to quickly respond to changing market conditions and continuously monitoring the geopolitical landscape to anticipate and prepare for changes.

Financial risks
(likely; material)

This risk pertains to the potential failure in effectively managing and executing key financial processes. This includes: transacting with customers, closing financial books, accurately reporting financial results, complying with various regulatory standards (SEC, BaFin, US GAAP, and IFRS), supporting financial audits. The inability to perform these functions can lead to material weaknesses in financial reporting, resulting in significant financial and reputational damage to Adtran Networks. To mitigate this risk management implemented the following: establishing, monitoring and regularly updating financial management systems and controls, process of continuously monitoring compliance with relevant regulations and standards, clear communication pathways between departments involved in financial processes. In addition, financial management ensures that financial staff are well-trained and up-to-date with current regulations and standards. Periodic risk assessments and internal audits are conducted to identify and address potential weaknesses in financial processes and controls. As part of the Adtran group and with the parent company being stock-listed in the US, Adtran Networks is obliged to maintain SOX controls. These controls, introduced in 2023, further develop and formalize the portfolio and complement the existing set of controls.

New legal requirements and over-regulation
(possible; material)

Due to the expansion to new markets and the globalization of business operations, Adtran Networks faces potential challenges and liabilities of changing and partially exuberant regulatory environments. The group’s business is subjected to risk factors such as: new laws or amendments to existing regulations, evolving industry standards, growing public and governmental scrutiny on business practices (e.g., data privacy, environmental impact, and ethical conduct). Adtran Networks responses to these threats by engaging the following strategies: developing a robust compliance framework adaptable to various regulatory environments, educating employees about regulatory requirements and the importance of compliance, keeping abreast of changes in legislation and industry standards, involving experts for consultations and for ensuring understanding of compliance with applicable regulations, integrating regulatory compliance considerations into strategic planning and business decision-making.

Portfolio and innovation risks

Inability to perform new customer product introductions / homologations
(very likely; material)

For a telecommunications equipment and software producer, the introduction of new products to customers is pivotal for sustaining competitiveness, driving revenue growth and maintaining a technological leadership position in the industry. Should Adtran Networks be unable to solve internal factors such as limited resources, missing features, the inability to react fast enough and to adapt to external factors like changing market demands, evolving regulatory and security requirements and increased competition, the group’s development could be impacted negatively. Since some of the group’s competitors operate in a broader market and have considerably more resources available due to their greater size, Adtran Networks must continue to focus its efforts on investing in research and development to support customer homologation, ensuring that product quality meets both internal standards and external regulatory requirements and keeping abreast of market trends and customer needs to align product development. In addition, the group has implemented the Issue Tracker. This contrivance is being used by Technical staff and Quality Management Team to track high priority issues, align on status and correctness of the chosen approach. Another tool utilized by an internal integrated business unit is quarterly business reviews (QBR) on which integrated metrics are being analyzed. Adtran Networks also makes special emphasis on improved customer-specific testing and stays updated with changing regulations and ensuring compliance to facilitate smooth homologation.

Uncompetitive products due to technological disruption
(possible; material)

Adtran Networks’ products or services may become uncompetitive as a result of technological advancements and innovations in the market. Technological disruption often leads to appearance on a market of new, more efficient, or more appealing products, which can quickly make existing offerings of Adtran Networks obsolete or less desirable. This risk may realize due to the following internal factors: wrong product strategy, inefficiencies in product development, inadequate resource allocation, poor project management, or technical challenges. External factors that may cause products or services to become uncompetitive are among others: market shifts, regulatory hurdles and the dependency on external partners and suppliers. The risk of a potential technological disruption is remediated by continuous reviews of market and product requirements, implementing efficient product development processes to minimize delays, incorporating risk assessment in the planning stage to foresee and mitigate potential causes of delay, ensuring effective communication and coordination among different departments and external partners and by having backup plans for potential setbacks in the product development lifecycle.

Uncompetitive product cost
(possible; material)

Adtran Networks achieves cost advantages through its ability to scale economically and through the optimization of product design. The loss of competitive product cost would drastically reduce the group's success in winning new business and would have a negative effect on gross and operating margins. The significant pricing pressure for innovative connectivity solutions must be met strategically by improving processes, controls and technology while maintaining adequate R&D budgets, as well as operationally by achieving cost leadership in sourcing product components. A dedicated team identifies competitive price and cost targets for new products, monitors product cost changes throughout the development process and negotiates, tracks and forecasts product and related component costs. The achievement of the annual cost reduction targets for sourcing components is tracked by quarterly status reports. The establishment of parallel production lines in different territories to mitigate geopolitical and supply chain risks leads to an increase in capital expenditures and operational cost. Adtran Networks diligently assesses the advantages and disadvantages of second sources and parallel production lines versus the additional cost incurred.

Uncompetitive product(s) due to delayed release(s)
(likely; material)

High competition and rapid technological change are the decisive characteristics of the market for innovative connectivity solutions for cloud and mobile services. Continuous success not only requires the identification of innovative solutions for future network and customer requirements by maintaining cost leadership, but to also release such innovations at the projected time as delays may undermine their competitiveness. As a result, Adtran Networks implemented a joint development and operations organization (DevOps[1]) clustered into technology value streams to maximize effectiveness and break up barriers. All value streams operate according to one common tool-supported development process.

Operational efficiency risks

Operational supply gaps caused by interrupted supply chains
(likely; material)

Adtran Networks sources product components either based on forecasts or upon receipt of a customer purchase order. Any shortage in the required material can have a significant negative impact on the group's performance. This may be caused by natural disasters which are expected to occur in higher frequency and at larger scales due to the climate change, pandemics, political conflicts, or specific problems of a supplier. The availability of critical components is centrally planned, monitored and controlled for all the manufacturing sites for a six months' period. Adtran Networks is monitoring the supply situation very closely and is taking actions dependent on changing market conditions.

Cyber risks
(very likely; moderate)

The integrity, confidentiality and availability of our information systems and data is key for the functioning of our business processes and consequently for the company's success. Cyber-attacks against organizations are increasing worldwide in both, quantity and quality, and attackers are more frequently targeting midsize companies like Adtran Networks. Cybersecurity studies of 2023 also indicate that manufacturing is one of the most targeted industries which resulted in 447 compromised organizations from this area publicly exposed on leak sites. The same studies show that Germany continues to be one of the countries most impacted by extortion attempts. In the Ransomware and Extortion report of 2023 by Unit 42 Germany is named 3rd after USA and UK with 129 extortion attempts during the year.

Cyber-crimes are committed by a wide range of perpetrators ranging from single hackers to professional organizations partially operating on behalf of national governments. The motives for cyber-attacks are similarly wide ranging from ransom extortion to industrial espionage and sabotage. Preventing from, and combating cyber threats is a never-ending challenge which in Adtran Networks is accomplished by a series of measures. These include among others the continuous monitoring of the information security risk landscape, making staff aware for cyber threats through adequate trainings, fast patch management, restrictive access right management, a centralized information technology function which enforces rigid and global security policies, regular review of the information technology disaster recovery plan and incident management as well as network, system and application monitoring, strong security measures, including encryption and multi-factor authentication.

Although information security measures are continuously improved and adapted to combat new threat profiles, there is no guarantee that the measures will prevent Adtran Networks from cyber-crimes.

Data breach or network/service outages due to a security issue in deployed products
(very likely; moderate)

This risk involves the possibility of a data breach or a disruption in network or service operations due to security vulnerabilities in products that Adtran Networks has deployed. This can include software, hardware, or online services. Such incidents can lead to unauthorized access to sensitive data, loss of data integrity, and interruption in essential services. Data breach or network/service outages which occur as a result of a security issue in deployed products may lead to a loss of customer's trust if seen as negligence and could result in claims for compensation. Roadmap commitments might get missed as fixing a severe security issue could absorb R&D resources for a significant time. New shipments might get on hold until the security issue is fixed.

Among the risk factors are important factors such as software and hardware vulnerabilities, inadequate security measures, advanced cyber attacks and third party risks. The impact of incidents could be significant, including customers' service disruption, loss of sensitive data, financial losses, erosion of customers' confidence.

The Management of Adtran Networks included various mitigation strategies to control this risk: proper internal secure product development standards (SPLC – secure product life-cycle) are in use, as well as adequate product security incidents response teams (PSIRT) for all products. Adtran Networks utilizes regular security audits and assessments: thorough security reviews of products to identify and address vulnerabilities. Robust security protocols are engaged for implementing strong security measures, including encryption and multi-factor authentication. Continuous monitoring and incident response planning is being performed: Adtran Networks established systems for continuous monitoring and having a well-defined incident response plan. Employees are being educated on security best practices and the importance of compliance. Vendor and third-party management processes are: ensuring that third-party components and services meet security standards. Monitoring and reporting: implementing systems for ongoing monitoring of security threats and vulnerabilities, and regularly reporting on security status and incidents.

Excessive or obsolete inventory (very likely; moderate)

Adtran Networks normally purchases components based on customer orders or forecasts. However, in some situations such as during the semiconductor crisis, or if lead times of single components heavily exceed standard lead times, Adtran Networks may opt on buying components on stock in order to reduce throughput times and customer lead times. Pre-purchasing materials for products without firm orders bears the risk that customers will not demand relevant products. Pre-ordered materials reserved for a certain customer project is often reusable in other customer projects (standard components). Some components, however, cannot be used in any other customer project (non-standard components). Adtran Networks tries to reduce the pre-purchasing of non-standard materials to a minimum in order to limit the obsolescence risk. Despite our close alignments with customers, careful material demand analyses and other means to limit inventory risks, there is a residual risk that components on stock exceed customer demands or cannot be used in any customer project and cannot be resold to other market players, or can be sold, but at a price below the purchasing cost.

Unsatisfying supplier and manufacturing quality (unlikely; very material)

Adtran Networks' product quality is significantly influenced by its suppliers and contract manufacturers. Failure of a single part may cause the whole system to be dysfunctional. Early detection of component as well as production deficiencies is thus critical for the group's success. Deteriorating quality levels could not only lead to delays in installation, return of products or cancellation of orders, but also to penalties and lawsuits, contract terminations and liability claims. Preventive actions to avoid quality deterioration include close collaboration with key suppliers during the development of critical components, structured and tool-based processes for supplier and manufacturer identification and qualification, robust contracting including adequate indemnifications, and regular audits of key suppliers and all manufacturers.

People and culture risks

Compliance violations by intermediaries (likely; material)

Adtran Networks' markets its products and solutions in part via a variety of distribution partners due to required economies of scale, local (legal) requirements and in order to benefit from existing contractual as well as personal relationships and post-sale support organizations and capabilities. While the group's ability to control the partners' activities are limited, compliance violations by intermediaries may, under specific circumstances, be attributed to Adtran Networks. For mitigation, Adtran Networks implemented robust risk-based due diligence procedures including upfront vetting of new intermediaries and periodic reviews and updates. In addition, Adtran Networks' sales agreements contain clauses in which the intermediaries guarantee compliance with the rules. Existing commission-based compensation is tightly controlled and new contracts are avoided where possible.

Inability to retain the talent with the competencies required to meet key objectives (possible; material)

The digital transformation continues at a rapid pace and has led to a permanent shortage of skilled workers within the technology industry. While particularly intense in developed countries, competition for talent is fierce all over the globe. As a result, the group is continuously challenged to retain and nurture its employees in order not to lose their knowledge, skills and relationships required to develop, sell and maintain the group's innovative products and solutions. The merger of Adtran Networks and Adtran means a special challenge as organizational changes by nature lead to uncertainty and fears among employees. Moreover, the combination of two corporations also means the merger of their cultures. An additional stress factor is the extra work caused by the integration of systems and processes. All of the aforementioned factors may cumulate and lead to the internal resignation, or the leaving, of employees. The acquisition of new personnel is also hampered temporarily as some people prefer a stable work environment to a changing environment. On the other hand, organizational change is attractive to highly motivated and creative talents. Covid-19 changed the way employees work. Many of them, especially in the software and IT sector can opt for remote jobs which increases the attrition risk. Adtran Networks tries to meet employees' expectations by offering them a variety of flexible work models.

Harassment or discrimination claims or proceedings (very likely; moderate)

This risk involves the potential for claims or legal proceedings to be brought against Adtran Networks due to allegations of harassment or discrimination in the workplace. Such claims can arise from employees, customers, or other stakeholders and can be based on gender, race, age, sexual orientation, religion, disability, or other protected characteristics. Among factors, which may provoke this risk coming into being are lack of clear, communicated policies against harassment and discrimination, a workplace culture that tolerates or overlooks inappropriate behavior, insufficient efforts to promote diversity, equity, and inclusion in the workplace. The executive management of the Adtran Group remedies this risk by developing and enforcing clear policies against harassment and discrimination, establishing confidential and accessible channels for reporting incidents, promoting the reporting of any type of violations in its Code of Conduct ("speak up culture") and by conducting impartial investigations in case of incidents.

Minor and financial risks

Beyond the discussed 16 major risks, there is a broad range of minor risks that can also have a negative impact on Adtran Networks. These uncertainties include financial risks as well as the risk of customer defaults, balance sheet risks such as the impairment of intangible assets, and changes in interest rate levels. Uncertainties also exist with regards to the timing of carrier investment cycles and to distribution partnerships, to legal risks pertaining to potential claims under product and warranty liabilities as well as patent rights, to secure confidentiality of personal and business sensitive data. Risks relating to energy supply and risks from possible acquisitions are also worth mentioning. The management board of Adtran Networks does not consider any of these risks or other uncertainties to have a major impact on the group in case of their occurrence.

Changes to the overall risk situation and classified major risks in 2023

The composition of Adtran Networks' major risks is partly different than the prior year. "Loss of key customers or channel partners", "market pricing pressure", "wrong product strategy" and "exchange rate risks" are no longer considered major risks. New major risks added to the Company's risk portfolio are: "Inability to perform new customer product introductions/ homologations", "geopolitical risks", "data breach or network/service outage occur due to a security issue in deployed products", "financial risks" due to Adtran Networks since 2023 has to comply with SEC rules. "Harassment or discrimination claims or proceedings" and "New legal requirements and over-regulation" were also new risks added into the list of the major threats. In line with Adtran Group's risk management approach, non-financial risks are no longer identified and assessed. Nine out of 16 of the most major risks are the same, as listed in the company's risk & opportunity report 2022.

Opportunity identification

The identification of opportunities is largely identical to the processes, tools and concepts as described in the "risk management system" section above. The annual definition of the group's opportunities is supported by the management board, which has regular discussions with key customers and industry thought leaders in order to identify new opportunities and technological trends. Throughout the group, agile processes maximize the group's ability to take advantage of newly identified trends. Current major opportunities are as follows:

Market share gains in Europe
(very likely; very material)

The Covid-19 pandemic and global supply chain issues have highlighted the economic importance of digitization and a secure communications infrastructure and has prompted a rethink in politics and business. The use of device technology with questionable origin is now viewed very negatively, and many European countries/companies are actively working to reduce the dependence on large Chinese network equipment suppliers in their networks. Additionally, global supply chain disruptions, during the recent global silicon shortage, were causing network operators in Europe to re-look at the vendor landscape, which often results in a desire for them to partner with vendors who are "local" on a regional basis. For Adtran Networks, as an established company headquartered in Europe, these new dynamics create additional opportunities. The expansion of the company's capabilities in Germany through the opening of the new Terafactory in Meiningen further strengthens Adtran networks' credibility as a local supplier.

Portfolio cross-selling
(very likely; very material)

Adtran Networks operates in three distinct technology areas: open optical transmission technology, programmable cloud access solutions and high-precision network synchronization. In addition to a variety of opportunities in each of these technology areas, the group sees a high likelihood of cross-selling these solutions into Adtran Inc.'s customer base. The combined company has started to educate traditional broadband-only customers of Adtran and identified significant cross-selling opportunities.

Additional demand for packet-based access solutions with increasing software content
(likely; material)

With the introduction of 5G and the emergence of edge computing solutions, CSPs are redefining their strategies in the network access space. Adtran Networks has invested heavily in expanding its cloud access portfolio to help CSPs find new revenue streams. As a result, Adtran Networks has the world's most comprehensive portfolio of fiber-based Ethernet access and aggregation solutions that enable industry-leading data transmission. In addition to FSP[29] 150 hardware, Adtran Networks' Ensemble software portfolio provides virtual network solutions that enable CSPs to offer new services to enterprise IT departments. NFV enables CSPs to quickly create and deploy new services anywhere in the world. Driven by close partnerships with some of the world's leading enterprise IT suppliers, the group sees the potential for numerous new customer wins and a higher share of software revenue in this area.

Additional demand for services through use of machine learning (ML) and artificial intelligence (AI)
(likely; material)

More and more customers are using the company's range of services in the planning, construction and commissioning of their networks. In addition, there are contracts for the maintenance and protection of networks already in operation. Adtran Networks is continuously expanding its service catalog, for example using ML and AI to offer new services for improved network resilience. The pandemic and geopolitical tensions have increased the demand for data-driven insights and services to automate and protect networks. Further significant revenue increases are possible.

Information technology security
(very likely; material)

Large enterprises and government agencies are concerned about the security of their data and business processes and are therefore building new data backup and data storage solutions, which in turn require transmission technology to link sites. In addition, the EU's General Data Protection Regulation (GDPR), which came into force in 2019, is leading to increased data protection requirements for all companies operating in Europe. A few years ago, network technology primarily had to provide cost-effective bandwidth. Today, the focus is increasingly on security. This inevitably has an impact on the technical realization of the cloud as well as customers' selection of manufacturers. Adtran Networks is the one remaining European specialist in optical transmission technology and a reliable partner for thousands of companies. Its ConnectGuard™[30] security portfolio offers customers comprehensive protection in different network scenarios and brings numerous competitive advantages. With the founding of Adva Network Security (ANS) in 2022, the company showed its strong commitment to this highly relevant market. As

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[29] The Fiber Service Platform is Adtran Networks comprehensive product portfolio that provides carriers and enterprises with innovative connectivity solutions for access, metro and long-haul networks.
[30] Brand name for Adtran Networks' encryption technology, implemented in many of the company's products.

a German company with strong visibility and presence with data center and network operators worldwide, ANS anticipates a positive market environment with additional opportunities in security-related infrastructure.

New markets for synchronization solutions (very likely; material)

In addition to mobile network operators' increasing demands for high-precision synchronization solutions, Adtran Networks' Oscilloquartz technology is gaining traction in other applications. Most notably, securing critical infrastructure against GNSS[31] failures is becoming increasingly important, opening opportunities with government agencies and operators of mission-critical infrastructure. Also relevant are the synchronization of global databases of internet content providers, the accuracy of timestamps for financial trading, the synchronization of power grids with distributed generation, time distribution in digital infrastructure deployment, and the synchronization of media networks. All these applications offer additional opportunities for this technology area.

Expansion of addressable market and share gains through decarbonization (possible; material)

According to current knowledge, climate change and the resulting threats to our planet are largely due to high CO_2 emissions worldwide. The transport of goods and people has played a not insignificant role in this. In addition, of course, the energy consumption of communication networks is also increasing as data traffic grows. This creates opportunities for Adtran Networks: on the one hand, the lockdown of the past two years demonstrated that numerous economic processes, as well as processes of daily life, often function with significantly less mobility. Home office and video conferencing have significantly reduced the need for business travel in many industries. The aspect of "green thanks to ICT" – i.e., more resource-efficient processes through the use of communications technology to replace the need for trips and flights – is stimulating network expansions in many countries of the world and having a positive effect on the growth of Adtran Networks' addressable market. On the other hand, Adtran Networks' activities in the area of sustainability are highly advanced. These are described in detail in the separately published sustainability report. The company's efforts to sustainably reduce the energy efficiency of its products as well as its own operational processes have been recognized by numerous organizations and go well beyond the commitment of direct competitors, especially from the US and the Far East. The company's innovation can reduce the energy consumption of communications networks. Adtran Networks' customers, some of whom have set very ambitious climate targets, benefit from these improvements and appreciate the company's efforts. Now that some countries even require CO_2 levies to be paid, this also creates an economic advantage for network operators and, in turn, a competitive advantage for Adtran Networks.

Additional sales opportunities from ongoing market consolidation (possible; material)

Vendor consolidation in optical transmission technology will continue. In 2019, an Israeli competitor of the group was acquired by a US technology company. This acquisition further reduced the number of independent companies focusing on optical network solutions. Adtran Networks is the remaining European specialist in this technology and has built a positive reputation among its customer base. Through the acquisition of Overture in 2016 and the acquisition of MRV in 2017, the group itself has contributed to the ongoing industry consolidation and gained strength and relevance. A consolidated competitive landscape can lead to slower market price erosion and new opportunities for Adtran Networks to win additional customers as a primary or secondary supplier. The merger with Adtran strengthens Adtran Networks' market power and generates additional economies of scale. A consolidated competitive landscape is expected to slow down price erosion and may open new opportunities to win new customers as main or second supplier.

Vertical integration for cost reductions in product components and new markets (likely; moderate)

Adtran Networks is increasingly investing in the development of optoelectronic components. These investments enable greater vertical integration and greater independence from suppliers. On the one hand, this leads to an improved cost structure for certain functions in Adtran Networks' systems. In addition, Adtran Networks benefits from an expansion of the total addressable market (TAM). The pluggable transceiver modules of the successful MicroMux family as well as the 100ZR module developed jointly with Coherent (formerly II-VI) will make an increasing contribution to consolidated revenues and margins in 2024 and beyond, with strong growth potential.

[31] GNSS refers to a constellation of satellites transmitting positioning and timing data from space. GNSS receivers determine their location by using that data. By definition, a GNSS provides global coverage.

Changes to the overall opportunity situation and the classified major opportunities in 2023

The company sees itself well positioned to take advantage of the great opportunities which include additional potential thanks to the merger with Adtran Holdings, Inc. in 2022. The efforts of the western developed countries to remove Huawei and ZTE equipment from their networks continue to provide new market opportunities in a consolidating market. Coupled with increasing demands driven by information security requirements, high-precision synchronization required by new customer groups as well as its new range of software and service offerings, Adtran Networks has a strong foundation for great performance.

Overall opportunity and risk assessment

Based on careful inspection of the group's opportunity and risk profile at the time of the preparation of the combined management report, the management board of Adtran Networks believes that the group's opportunities offset the risks. Adtran Networks overall balance between opportunities and risks is similar to the one at the time of the publication of the combined management report. The management board has not identified any risk which would endanger the going concern of the Adtran Networks group.

Internal controls related to financial reporting

The management board of Adtran Networks is responsible for establishing and maintaining an adequate system of internal controls. It has implemented an internal control system that enables the management board to ensure completeness, accuracy and reliability of financial reporting at group and legal entity level. When designing its internal control system, Adtran Networks used the COSO framework as a key reference and source of guidance. The internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting. No system of internal control over financial reporting, including one determined to be effective, may prevent or detect all misstatements.

Control environment

The control environment is the foundation of the internal control system in every organization. Adtran Networks fosters an environment of openness and integrity with a clear commitment to excellence, competence and the development of its employees. The group's leadership principles of integrity/honesty, decisiveness and respect are based on this philosophy, and the culture is reflected in the overall tone set by the management board. Adtran Networks has a clear organizational structure with well-defined authorities and responsibilities. The bodies charged with the governance and control of the group actively participate in the running and steering of the business. The business is managed on a global basis and run via functional areas. Financial steering of the group and financial stewardship for individual legal entities is handled by the chief financial officer, under the audit committee's guidance.

In 2023 due to the merger with Adtran, which was already listed on NASDAQ, Adtran Networks (ex-ADVA) had devoted considerable effort to ensure its consolidated operations meet the requirements set forth by the Sarbanes-Oxley Act (SOX). In 2023 the focus was on the implementation and testing of new internal controls designed to uphold the standards of financial reporting. Recognizing the importance of these controls in safeguarding the integrity of Adtran Networks financial information, management established a dedicated team to ensure SOX-compliance. This team conducted comprehensive evaluations to identify and mitigate potential risks for financial statements veracity, and performed work to ensure that internal controls over Adtran Networks consolidated financial statements are effective both by design and operationally. Through a combination of targeted control descriptions and training sessions, internal monitoring, and external consultants, Adtran Networks had created an internal control framework that, is focus on ensuring compliance with SOX requirements.

Following the initial year of SOX compliance implementation, the evaluation process has identified several internal controls as deficient. These findings highlight specific areas for enhancement within Adtran Networks' internal control system. In response, corrective measures are being formulated and implemented to address these deficiencies. The organization is focused on strengthening the effectiveness of internal controls and reinforcing compliance with SOX requirements. Improvement efforts are planned for the subsequent financial year, aiming to rectify the identified deficiencies and improve financial reporting framework.

Risk assessment

As part of the internal controls related to financial reporting, the risk assessment follows the process described in the "risk management system" section.

Control activities

At an individual entity level, Adtran Networks' larger and more complex business units use an integrated enterprise resource planning solution, which also serves as general ledger system. Information technology controls have been implemented to restrict user access, ensure proper authorization of changes to the system and efficient handling of user help desk requests. Specific processes are defined and applied for the following reporting cycles in these business units: cash reporting, revenue recognition, accounts payable, capitalization of development expenses and recognition of subsidies for research, inventory reporting, fixed assets, payroll and provisions. Adtran Networks carries out monthly analytical reviews and quarterly balance sheet reviews based on a four-eye principle between the local accounting and the consolidation functions.

For the consolidated financial statements, the balance sheet and income statement positions requiring a significant degree of judgment and estimation when being valued are determined and analyzed with the involvement of management. This is the case for impairment testing reviews (annual or when a triggering event occurs), capitalization of development projects (when the industrialization stage is reached) and tax reporting, specifically deferred taxes (quarterly). Adtran Networks additionally carries out monthly intercompany reconciliations as part of the consolidation process and analytical reviews of actual vs. expected results based on a four-eyes principle between the financial planning and the consolidation functions.

All business units follow a set of global accounting policies and reporting guidelines applying to the whole group. The financial statements preparation process is monitored globally via a calendar that is communicated to all involved parties on a monthly basis. Checklists are completed both in the individual business units and at the consolidation level to ensure completeness of all closing steps. Periodic reviews by group management are conducted to detect errors and omissions.

Information and communication tools

The internal control system at Adtran Networks is supported by tools to store and exchange information, enabling the management board to make informed business decisions about financial reports and disclosures. The following components ensure proper information and communication for financial reporting:

- Accounting systems for individual entities are matched to the degree of complexity of the business unit. For most entities, an integrated enterprise resource planning system, which also serves as general ledger system, is in place. All local accounts are mapped to the group chart of accounts, which is used group-wide.
- The group consolidation is supported by a database tool which is linked to the enterprise resource planning and financial planning systems via interfaces. The global financial planning system is used extensively in analyzing actual vs. expected results and thus monitoring the results of the consolidation.
- Global accounting policies for the more complex financial statement positions of the group and a group chart of accounts for all other positions are available. Accounting policies are updated regularly and are implemented only after a thorough internal review and training.

Internal monitoring

As part of the ongoing monitoring, the chief financial officer is informed about all material misstatements and control breakdowns at group and business unit level on a quarterly basis in the executive summary to the financial statements. The reporting of deficiencies follows the principles of open and transparent communication. Follow-up is ensured through regular meetings where corrective actions are presented.

Internal financial audit

Adtran Networks maintains an internal audit function to regularly assess financial processes and systems.

Based on an annual risk assessment, the internal audit function develops an audit plan proposal for the upcoming year. The proposed plan is presented to, aligned with, and finally ratified by the audit committee. The internal audit function performs internal audit reviews throughout the year according to the audit plan. Audit results are discussed with responsible managers. In case of identified process or system weaknesses, the internal audit function makes recommendations and improvement actions are defined and agreed with the responsible manager(s). The progress of these and their success in removing the identified weaknesses is reviewed by the audit function. The state of internal auditing is reported quarterly to the audit committee and includes feedback about the progress of audits performed versus the audit plan, about the results of terminated audit reviews and about improvements resulting from actions taken.

Outlook

The statements in this chapter apply to the Adtran Networks group as well as to Adtran Networks SE. Further details on the projected market environment, as well as the resulting opportunities, can be found in the “General economic and market conditions” section and in the “Business overview” section.

The year 2023 turned out to be much more difficult than initially expected. At the beginning of the year, the outlook for business development was still positive. The end of the pandemic and a significant improvement in the availability of semiconductors indicated a return to normality in the industry. Adtran Networks’ delivery capability significantly improved, additional costs associated with overcoming material shortages diminished, and global logistics operations largely returned to smooth functioning. However, the improved ability to deliver had a negative impact on customers’ ordering behavior. The larger network operators in particular had built up risk stocks in order to remain able to act in the event of a further deterioration in manufacturers’ ability to deliver. Once confidence in the ability to deliver had returned, these risk stocks were reduced and new orders were cut back, in some cases dramatically. The overall situation was exacerbated by high inflation and the associated rise in central bank interest rates. This increased the borrowing costs for network expansion, while the shortage of skilled workers and higher personnel costs also contributed to a noticeable slowdown in customer demand.

This complex mix of factors led to a reduction in annual sales to EUR 613.7 million. This decline of 13.8 % compared to the previous year was in line with the forecast range, which was adjusted during the year and assumed a reduction in the single-digit to low double-digit percentage range. The decline in sales had a negative impact on the company's profitability. Nevertheless, the company was able to impress with a pro forma EBIT margin of 6.5 %. In the annual forecast published for the 2023 financial year, the management board had initially expected a year-on-year increase in revenue in the high single-digit to low double-digit percentage range and a further increase in pro forma EBIT compared to the 2022 financial year. Even though the results in the second quarter were in line with the forecast expectations, the management board revised the outlook for the 2023 financial year in August. They projected that revenue would decline by a high single-digit to low double-digit percentage compared to the financial year 2022 and that the pro forma operating result in relation to revenue would be in the low single-digit percentage range.

Net debt amounted to EUR 42.4 million at the end of the 2023 financial year, compared to net debt of EUR 19.2 million in the previous year. This was below expectations of achieving a net liquidity position in the mid double-digit million range and is due in particular to the significantly weaker sales performance.

As for customer satisfaction, Adtran Networks uses the net promoter score (NPS) to track progress. With a score of 37.7 %, the company only just missed the high positive level of at least 40% targeted by the management board. Customer.guru (https://customer.guru/net-promoter-score) - a NPS survey and benchmarking tool - provides estimates for Adtran Networks' peer group. According to this portal, Adtran Networks' NPS remains very high on an international scale, even when compared across industries.

With a view to business development in 2024, the management board expects demand to remain weak until the third quarter. Many customers have not yet finished optimizing their inventories, which is having an impact on incoming orders. In addition, the ongoing tense political climate, the unpredictable trajectory of inflation, and relatively high interest rates are all making customers reluctant to invest. In the long term, however, the macro environment remains positive for Adtran Networks. Digitization has taken center stage in both politics and business, and the need for a secure and high-performance communications infrastructure has never been greater. We live in an era of mobile working, e-learning and video conferencing increasingly replacing face-to-face offices, classrooms and meeting rooms. Business travel and in-person meetings are being supplemented by virtual meetings, and a new hybrid form of communication has taken hold. The pandemic has highlighted the need to leverage new forms of human interaction, and digital solutions have ensured business continuity under challenging conditions. Communications networks have become the backbone of economies and are now considered a valuable strategic asset. This new mindset continues to drive demand for network technology and is supported by various government incentives and funding programs around the world.

With the investments of the past years, Adtran Networks has comprehensively prepared itself technologically for the transformation of networks with the aspects of cloud, mobility, 5G, automation and security. In addition to the high-quality performance features of optical data transmission, precise network synchronization technology and programmable cloud access solutions, the service portfolio also delivers increasing added value. Adtran Networks develops, produces and delivers communication technology for the digital future. According to estimates by industry analysts, the total addressable market for the company was around USD 10.8 billion[32] in 2023 and will grow to USD 12.1 billion by 2028, although the potential additional opportunities from the shift in demand from Asian (especially Huawei) to European manufacturers are not quantified here (see also chapter "Market, Target Groups and Growth Drivers").

[32] World market excluding China for Metro and Backbone WDM (Omdia, “Optical Networks Forecast”, published November 2023), Access Switching and Ethernet Demarcation, (Omdia: “Service Provider Switching and Routing Forecast”, October 2023) and network synchronization (Adtran Networks own estimates)

Against the backdrop of the aforementioned factors and considering the planning parameters, personnel and exchange rates, the executive board expects a further year-on-year decline in revenue of around 25 % in 2024. However, the executive board assumes that pro forma EBIT in 2024 can be maintained at a level comparable to 2023 due to the stringent opex adjustments. The company's aim is to rapidly reduce its debt and consistently adhere to the defined capital management targets described in Note (34) to the consolidated financial statements. For the financial year 2024, the executive board expects net debt in the low to mid-double-digit million range. No corresponding annual forecast is published at Adtran Holdings level.

The group will continue to selectively invest in product development, technology and revenue-generating opportunities. In addition, the management board expects, due to the continued focus on innovation, quality and service, that customer satisfaction measured by the net promoter score will once again reach a high, positive level of at least 35% in the current financial year. Actual results may differ materially from expectations if risks materialize or the underlying assumptions prove unrealistic. The major risks facing Adtran Networks are discussed in the “risk and opportunity report” section.

Declaration on corporate governance

Compliance with the rules of proper corporate governance is of great importance to Adtran Networks - it is the foundation for the group's success. According to section 289f and § 315d of the German Commercial Code (Handelsgesetzbuch, HGB) in connection with Principle 22 of the German Corporate Governance Code in the version dated April 28, 2022, Adtran Networks SE is obliged to publish a "declaration on corporate governance". Adtran Networks publishes the "declaration on corporate governance" on the corporate governance page in the About us / Investors section of its website www.adva.com. The remuneration report for the 2023 financial year and the auditor's report in accordance with Section 162 AktG, the applicable remuneration system in accordance with Section 87a (1) and (2) sentence 1 AktG and the most recent remuneration resolution in accordance with Section 113 (3) AktG are also publicly available there.

Meiningen, April 16, 2024

Thomas R. Stanton

Christoph Glingener Ulrich Dopfer

IFRS consolidated financial statement

Disclaimer:

Potential inconsistencies in the table values are based on rounding differences.

Consolidated statements of financial position as of December 31, 2023

(in thousands of EUR)	Note	Dec. 31, 2023	Dec. 31, 2022
Current assets			
Cash and cash equivalents	(8)	30,554	58,447
Trade accounts receivable	(9)	115,615	123,651
Thereof receivables from Adtran Holdings, Inc. and its subsidiaries	*(39)*	*980*	*198*
Receivables from Adtran Holdings, Inc. due to loss absorption	(39)	23,934	—
Contract assets	(11)	340	248
Inventories *)	(10)	106,273	128,829
Tax assets	(26)	2,995	2,673
Other current assets *)	(12)	78,166	59,480
Total current assets		**357,877**	**373,328**
Non-current assets			
Right-of-use assets	(13)	28,269	18,634
Property, plant and equipment	(13)	39,911	35,911
Goodwill	(13)	64,899	71,307
Capitalized development projects	(13)	104,555	97,975
Intangible assets acquired in business combinations	(13)	5,241	8,519
Other purchased and internally generated intangible assets	(13)	22,006	19,604
Deferred tax asset	(26)	11,743	16,535
Other non-current assets	(12)	23,320	6,099
Total non-current assets		**299,944**	**274,584**
Total assets		**657,821**	**647,912**

*) From 2023, advance payments to contract manufacturers will be reported under other current receivables. Previously, these advance payments were reported under inventories. The previous year's disclosure has been adjusted accordingly. Further information can be found in note (12).

(in thousands of EUR)	Note	Dec. 31, 2023	Dec. 31, 2022
Equity and liabilities			
Current liabilities			
Current lease liabilities	(14)	5,558	5,648
Current liabilities to banks	(15)	13,286	56,430
Trade accounts payable	(16)	43,123	88,713
Thereof payables to Adtran Holdings, Inc. and its subsidiaries	*(39)*	*1,382*	*1,985*
Current provisions	(18)	18,430	17,331
Tax liabilities	(26)	2,173	5,248
Current contract liabilities and advance payments	(19)	25,298	21,188
Refund liabilities	(19)	612	506
Other current liabilities	(16)	37,054	44,647
Total current liabilities		**145,534**	**239,711**
Non-current liabilities			
Non-current lease liabilities	(14)	25,270	15,554
Provisions for pensions and similar employee benefits	(17)	6,734	5,550
Other non-current provisions	(18)	1,859	1,769
Deferred tax liabilities	(26)	12,218	2,869
Non-current contract liabilities	(19)	13,031	8,622
Other non-current liabilities	(16)	22,412	4,757
Total non-current liabilities		**134,297**	**39,121**
Total liabilities		**279,831**	**278,832**
Stockholders' equity entitled to the owners of the parent company	(20)		
Share capital		52,055	52,005
Capital reserve		335,352	333,531
Accumulated deficit		6,950	(35,116)
Net income		(14,514)	18,132
Accumulated other comprehensive income		(1,853)	528
Total stockholders' equity		**377,990**	**369,080**
Total equity and liabilities		**657,821**	**647,912**

Consolidated income statements for the financial year January 1 to December 31, 2023

(in thousands of EUR, except earnings per share and number of shares)	Note	2023	2022
Revenues	(21)	**613,671**	**712,114**
Cost of goods sold *)		(395,109)	(477,165)
Gross profit *)		**218,562**	**234,949**
Selling and marketing expenses *)	(22)	(68,526)	(76,210)
Thereof net impairment results on financial assets	(9)	*339*	*(1,145)*
General and administrative expenses *)	(22)	(42,085)	(51,747)
Research and development expenses *)	(22)	(105,642)	(99,344)
Other operating income	(23)	11,251	11,246
Other operating expenses	(23)	(258)	(782)
Operating income		**13,302**	**18,112**
Interest income	(24)	333	107
Interest expenses	(24)	(3,614)	(2,240)
Foreign currency exchange gains	(25)	16,606	31,021
Foreign currency exchange losses	(25)	(20,611)	(26,934)
Other financial gains	(25)	—	—
Other financial losses	(25)	—	—
Income before tax		**6,016**	**20,066**
Income tax benefit (expense), net	(26)	(20,530)	(1,934)
Net income entitled to the owners of the parent company		**(14,514)**	**18,132**
Earnings per share in EUR	(30)		
basic		(0.28)	0.35
diluted		(0.28)	0.35
Weighted average number of shares for calculation of earnings per share			
basic		52,015,913	51,744,182
diluted		52,024,918	51,787,712

*) Since 2023, rental expenses for offices have been allocated to the functional areas. Previously, these were included in general and administrative expenses. The previous year's figures have been adjusted accordingly. Further information can be found in Note (22).

Consolidated statements of comprehensive income

(in thousands of EUR)	Notes	2023	2022
Net income entitled to the owners of the parent company		**(14,514)**	**18,132**
Items that may be reclassified to profit or loss in future periods			
Exchange differences on translation of foreign operations		(1,407)	2,870
Items that will not get reclassified to profit or loss in future periods			
Remeasurement of defined benefit plans	(17)	(974)	1,853
Comprehensive income entitled to the owners of the parent company	(20)	**(16,895)**	**22,855**

Consolidated cash flow statements

(in thousands of EUR)	Notes	2023	2022
Cash flow from operating activities			
Income before tax		6,016	20,066
Adjustments to reconcile income before tax to net cash provided by operating activities			
Non-cash adjustments			
Amortization of non-current assets	(13)	68,786	72,699
Loss from disposal of property, plant and equipment and intangible assets	(13)	418	155
Stock compensation expenses	(38)	5,282	3,733
Other non-cash income and expenses		333	546
Foreign currency exchange differences		1,297	(4,963)
Changes in asset and liabilities			
Decrease (increase) in trade accounts receivable		4,056	(40,747)
Decrease (increase) in inventories		22,556	(65,405)
Decrease (increase) in other assets		(36,213)	18,919
Increase (decrease) in trade accounts payable		(44,987)	3,520
Increase (decrease) in provisions		1,200	1,337
Increase (decrease) in other liabilities		17,967	8,999
Income tax paid and refunded		(9,105)	(4,024)
Net cash provided by operating activities		**37,606**	**14,835**

(in thousands of EUR)	Notes	2023	2022
Cash flow from investing activities			
Investments in property plant and equipment	(13)	(18,995)	(17,494)
Investments in intangible assets	(13)	(49,229)	(55,657)
Cash receipts from sale of debt instruments of other entities		3,888	—
Interest received		306	73
Net cash used in investing activities		**(64,030)**	**(73,078)**
Cash flow from financing activities			
Proceeds from capital increase and exercise of stock options	(20)	346	4,326
Repayment of lease liabilities		(6,370)	(5,768)
Increase in financial liabilities to Adtran Holdings, Inc.		75,576	—
Cash repayment of financial liabilities to Adtran Holdings, Inc.		(22,859)	—
Proceeds from liabilities to banks	(15)	10,000	33,500
Cash repayment of liabilities to bank	(15)	(66,500)	(25,000)
Increase in financial liabilities from factoring agreements	(15)	13,286	—
Interest paid		(3,640)	(1,670)
Net cash used in financing activities		**(161)**	**5,388**
Net effect of foreign currency translation on cash and cash equivalents		(1,308)	2,315
Net change in cash and cash equivalents		**(27,893)**	**(50,540)**
Cash and cash equivalents on January 1		58,447	108,987
Cash and cash equivalents on December 31		**30,554**	**58,447**

Details on the preparation of the consolidated cash flow statement are included in note (29).

Consolidated statement of changes in stockholders' equity

(in thousands of EUR, except number of shares)	Share capital Number of shares	 Par value	Capital reserve
Balance on January 1, 2022	**51,445,892**	**51,446**	**327,777**
Capital increase, including exercise of stock options	558,608	559	3,767
Stock options outstanding	—	—	1,987
Net income	—	—	—
Exchange differences on translation of foreign operations	—	—	—
Remeasurement of defined plans	—	—	—
Comprehensive income	—	—	—
Balance on December 31, 2022	**52,004,500**	**52,005**	**333,531**
Balance on January 1, 2023	**52,004,500**	**52,005**	**333,531**
Capital increase, including exercise of stock options	50,000	50	296
Stock options outstanding	—	—	1,525
Profit transfer/loss absorption by Adtran Holdings, Inc.	—	—	—
Net loss	—	—	—
Exchange differences on translation of foreign operations	—	—	—
Remeasurement of defined plans	—	—	—
Comprehensive income	—	—	—
Balance on December 31, 2023	**52,054,500**	**52,055**	**335,352**

Details on changes in stockholders' equity are presented in note (20).

	Accumulated deficit including net income (loss)	Accumulated other comprehensive income (loss)	Total stockholders' equity entitled to the owners of the parent company
	(35,116)	**(4,195)**	**339,912**
	—	—	4,326
	—	—	1,987
	18,132	—	*18,132*
	—	*2,870*	*2,870*
	—	*1,853*	*1,853*
	18,132	4,723	22,855
	(16,984)	**528**	**369,080**
	(16,984)	**528**	**369,080**
	—	—	346
	—	—	1,525
	23,934	—	23,934
	(14,514)	—	*(14,514)*
	—	*(1,407)*	*(1,407)*
	—	*(974)*	*(974)*
	(14,514)	(2,381)	(16,895)
	(7,564)	**(1,853)**	**377,990**

Notes to the consolidated financial statements

General information

(1) Information about the company and the group

Following the resolution of the annual shareholder's meeting on May 24, 2023, ADVA Optical Networking SE was renamed to Adtran Networks SE with effect from June 8, 2023.

Adtran Networks SE (hereinafter also referred to as the "company" or "Adtran Networks SE") is a Societas Europaea domiciled in Meiningen, Germany, with its registered office at Märzenquelle 1–3, 98617 Meiningen, and is registered as HRB 508155 at the commercial register in Jena. The management board authorized the consolidated financial statements for the year ended December 31, 2023, for issuance on April 16, 2024.

The Adtran Networks group (hereinafter also referred to as "Adtran Networks", "the group") develops, manufactures and sells optical and Ethernet[1]-based networking solutions to telecommunications carriers[2] and enterprises to deliver data, storage, voice and video services.

Telecommunications service providers, private companies, universities and government agencies worldwide use the group's systems. Adtran Networks sells its product portfolio both directly and through an international network of distribution partners.

Significant accounting policies

(2) Basic principles for the preparation of the consolidated annual financial statements

The group's consolidated annual financial statements for the financial years ended December 31, 2023, and December 31, 2022, are prepared in accordance with the International Financial Reporting Standards (IFRS) published by the International Accounting Standards Board (IASB), as applicable in the European Union (EU) in consideration of interpretations of the Financial Reporting Interpretations Committee (IFRIC) and the applicable additional German statutory regulations according to § 315e Abs. 1 HGB. The consolidated financial statements have been prepared on a historical cost basis, except for the fair value measurement through profit or loss of certain financial instruments and share-based payments.

The financial year correlates with the calendar year. The consolidated annual financial statements are presented in euro. Unless otherwise stated, all amounts quoted are in thousands of euros. The balance sheet is separated into current and non-current assets and liabilities. The classification of income and expenses in the income statement is based on their function within the entity. When items on the balance sheet and in the income statement are summarized in the interest of clarity, this is explained in the notes to the consolidated financial statements.Due to rounding, figures in tables may not add up exactly to the totals shown and percentages shown may not exactly reflect the absolute figures to which they relate.

The annual financial statements of the individual subsidiaries of the holding company Adtran Networks SE, as subsumed in the consolidated annual financial statements, are all prepared using the same accounting and valuation policies and the same balance sheet date.

The Group is controlled by Adtran Holdings, Inc., Huntsville, Alabama, USA, as the ultimate parent company. Further information can be found in note (39).

(3) Effects of new standards and interpretations

The accounting policies followed are consistent with these of the prior financial year, except for the adoption of new and amended IFRSs and interpretations (IFRICs) during the year.

[1] Ethernet is a packet-based data transmission protocol with a data rate of 10Mbit/s. Fast Ethernet provides a data rate of 100Mbit/s, Gigabit Ethernet 1Gbit/s and 10 Gigabit Ethernet 10Gbit/s. Today also 40, 100 and 400 Gigabit Ethernet solutions are commercially available with data rates of 40Gbit/s, 100Gbit/s and 400Gbit/s, respectively.

[2] Carriers, in general, are companies that build and maintain communications networks for commercial use. Beyond incumbent telephony companies, these also include new alternative carriers, which were established during the deregulation of the telecommunications market, and special service providers, which offer outsourced services (e.g., software applications or data storage) for enterprise customers.

Standards, amendments and interpretations applicable for the first time in 2023

In 2023, following standards and interpretations have been adopted for the first time.

Standard	Topic	First-time adoption*	Expected impact on the financial position and performance
IFRS 17 including amendments	Insurance contracts	Jan. 1, 2023	none
Amendments to IAS 1	Disclosure of accounting principles	Jan. 1, 2023	none
Amendments to IAS 8	Definition of accounting-related estimates	Jan. 1, 2023	none
Amendments to IAS 12	Deferred taxes relating to assets and liabilities from a single business transaction	Jan. 1, 2023	none
Amendments to IAS 12	International tax reform - Pillar two model rules	May 23, 2023	none

* To be applied in the first reporting period of a financial year beginning on or after this date.

New accounting requirements not yet applicable for first-time adoption in 2023

The IASB and the IFRIC have issued further Standards and Interpretations in 2023 and previous years that were not applicable for the financial year 2023. In addition, the first-time adoption is partly still subject to endorsement by the EU.

Standard	Topic	First-time adoption*	Expected impact on the financial position and performance
Amendments to IAS 7 and IFRS 7	Supplier Finance Arrangements	Jan. 1, 2024	under review
Amendments to IAS 1	Classification of liabilities as current or non-current and non-current liabilities with covenants	Jan. 1, 2024	under review
Amendments to IFRS 16	Lease liabilities in a sale and leaseback agreement	Jan. 1, 2024	none
Amendments to IAS 21	Lack of exchangeability - New disclosures on the usage of estimated exchange rate	Jan. 1, 2025	under review

* To be applied in the first reporting period of a financial year beginning on or after this date.

(4) Recognition and measurement

Inventories

Inventories are valued at the lower of cost or net realizable value. The cost of purchase is determined by the average method. Production costs include direct unit costs, an appropriate portion of necessary manufacturing overheads and production-related depreciation that can be directly assigned to the production process. Administrative and social insurance charges that can be assigned to production are also considered. Financing charges are not classified as part of the at-cost base. The net realizable value is the estimated selling price that could be realized on the closing date in the context of ordinary business activity, less estimated costs of completion and costs necessary to make the sale.

Inventory depreciation covers risks relating to slow-moving items or technical obsolescence based on applicable net realizable value test. Where the reasons for previous write-downs no longer apply, these write-downs are reversed.

Property, plant and equipment

Property, plant and equipment is stated at historic cost less accumulated depreciation and accumulated impairment losses, if any. The present value of the expected cost for the decommissioning of the asset after its use is included in the cost of the respective asset if the recognition criteria for a provision are met.

Subsequent costs are included in the asset's carrying amount or recognized as separate asset only when it is probable that future economic benefits associated with this item will flow to the group and the cost can be measured reliably. All other repairs and maintenance costs are charged to the income statement during the financial period in which they are incurred.

Depreciation on property, plant and equipment is calculated on a straight-line basis over the estimated useful lives of the assets as follows:

- Buildings — 20 to 39 years
- Technical equipment and machinery — 3 to 4 years
- Factory and office equipment — 3 to 10 years

No regular depreciation applies for land.

Leasehold improvements are capitalized and depreciated over the expected useful life on a straight-line basis.

An item of property, plant and equipment is derecognized upon disposal or when no future economic benefits are expected from its use or disposal. Any gain or loss arising on derecognition of the asset (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in the income statement when the asset is derecognized.

The assets' residual values, useful economic lives and methods of depreciation are reviewed at each financial year-end and adjusted prospectively, if appropriate.

Intangible assets

Intangible assets acquired separately are measured on initial recognition at cost. The cost of intangible assets acquired in a business combination is their fair value on the date of acquisition. Following initial recognition, intangible assets are carried at cost less any accumulated amortization and any accumulated impairment losses. Internally generated intangible assets, excluding capitalized development costs, are not capitalized, and expenditure is reflected in profit or loss in the year in which the expenditure is incurred.

The useful economic lives of intangible assets are assessed to be either finite or indefinite.

Intangible assets with finite lives are amortized on a straight-line basis over the expected useful lives of the assets as follows:

• Capitalized development projects	3 to 5 years
• Intangible assets acquired in business combinations	3 to 9 years
• Other purchased and internally generated intangible assets	3 to 6 years

Intangible assets with finite useful economic lives are assessed for impairment whenever there is an indication that the intangible asset may be impaired. The amortization period and the amortization method for an intangible asset with a finite useful life is reviewed at each financial year-end. The amortization expense on intangible assets with finite lives is recognized in profit or loss in the expense category consistent with the function of the intangible asset.

Intangible assets with an indefinite useful life are not amortized. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value in use. The useful life of an intangible asset with an indefinite life is reviewed at least annually to determine whether the indefinite life assessment continues to be applicable. If not, the change in the useful life assessment from indefinite to finite is made on a prospective basis. Apart from goodwill and development projects in progress all intangible assets are amortized over their useful lives.

Gains or losses arising from derecognition of an intangible asset are measured as the difference between their disposal proceeds and the carrying amount of the asset, and they are recognized in the income statement when the asset is derecognized.

Goodwill

An indefinite useful life is assumed for goodwill acquired in the context of business combinations. Impairment reviews are performed at the cash generating unit level on the balance sheet date or when there is an indication that the goodwill may be impaired in accordance with IAS 36. Impairment losses on goodwill recognized in prior periods are not reversed. See note (13).

Intangible assets acquired in business combinations

Intangible assets acquired in business combinations have a finite useful life. They are recognized at fair value at the acquisition date and amortized on a straight-line basis over estimated useful economic lives of five to nine years. They are tested for impairment if an indication exists that the recoverable amount of the asset may have decreased.

The breakdown of intangible assets into individual items is included in note (13).

Capitalized development projects

Development expenses for new products are capitalized as development projects if

- they can be unambiguously assigned to these products,
- the products under development are technically feasible and can be marketed,
- there is reasonable certainty that the development activity will result in future cash inflows,
- Adtran Networks intends and is able to complete and use the development project and
- there is the availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset.

Capitalized development projects include all costs that can be directly assigned to the development process. Financing charges are capitalized if the development project represents a qualifying asset in the sense of IAS 23.

After initial recognition of a development project as an asset, measurement is at historical cost, less accumulated amortization and impairment. The straight-line method of amortization is used from the start of production through the estimated selling periods for the products developed (generally between three and five years). Ongoing development projects are tested for impairment on level of the smallest cash generating unit on the balance sheet date or when there is an indication of potential impairment. Completed development projects are tested for impairment if there is an indication of potential impairment. Impairment losses are recognized if appropriate.

Research costs are expensed as incurred according to IAS 38.

Impairment of non-financial assets

Intangible assets with indefinite useful economic lives are tested for impairment annually and whenever there is an indication for potential impairment, either individually or at the cash generating unit level. Intangible assets with finite and useful economic lives are tested for impairment whenever there is an indication for potential impairment. Intangible assets are tested either individually or at the cash generating unit level.

If there is any indication that an asset may be impaired, the recoverable amount is estimated for the individual asset. If it is not possible to estimate the recoverable amount of the individual asset, the recoverable amount of the cash-generating unit to which the asset belongs is determined.

An impairment loss is only recognized if the carrying amount of the asset or respective cash generating unit exceeds its recoverable amount. The recoverable amount is the higher of the fair value less costs of disposal and value in use of the respective asset or cash generating unit. Prior impairments of non-financial assets (other than goodwill) are reviewed for possible reversal at each reporting date.

Government grants

Adtran Networks recognizes government grants for fixed assets as well as for grants related to research projects.

Government grants are recognized where there is reasonable assurance that the grant will be received, and all attached conditions will be met. When the grant relates to an expense item, it is recognized as income over the period necessary to match the grant on a systematic basis to the costs that it is intended to compensate. Where the grant relates to fixed assets, it is recognized as a reduction of purchase costs and released as a reduction of depreciation expense over the expected useful life of the related asset.

Grants related to research projects are recognized as other assets if the grant is approved and certified but the payment still outstanding. A respective liability is recorded in the amount of the grant which has been approved at initial recognition and is released through the income statement when the defined research tasks have been completed.

Borrowing Costs

Borrowing costs directly attributable to the acquisition, construction or production of an asset that necessarily takes a substantial period to get ready for its intended use or sale (qualifying asset) are capitalized as part of the cost of the respective assets. If borrowing costs cannot be directly attributed to the acquisition, construction or production of an asset, an assessment is made on whether general borrowing costs should be recognized that would have been avoided if the asset was not acquired, constructed or produced. All other borrowing costs are expensed in the period they occur. Borrowing costs consist of interest and other costs that an entity incurs in connection with the borrowing of funds.

Leasing

The group leases various properties and cars. Rental contracts are typically made for fixed periods of 3 to 5 years but may have extension options as described below. Lease terms are negotiated on an individual basis and contain a wide range of different terms and conditions. The lease agreements do not impose any covenants, but leased assets may not be used as security for borrowing purposes.

Leases are recognized as a right-of-use asset and a corresponding liability at the date at which the leased asset is available for use by the group. Each lease payment is allocated between the liability and finance cost. The finance cost is charged to profit or loss over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period. The right-of-use asset is depreciated over the shorter of the asset's useful life and the lease term on a straight-line basis. If a purchase option is considered reasonably certain, the amortization period corresponds to the useful life.

Assets and liabilities arising from a lease are initially measured on a present value basis. Lease liabilities include the net present value of the following lease payments:

- fixed payments (including in-substance fixed payments), less any lease incentives receivable
- variable lease payment that are based on an index or a rate
- amounts expected to be payable by the lessee under residual value guarantees
- the exercise price of a purchase option if the lessee is reasonably certain to exercise that option, and
- payments of penalties for early termination of the lease if the exercise of a termination option is considered reasonably certain.

The lease payments are discounted using the interest rate implicit in the lease, if that rate can be determined, or the group's incremental borrowing rate. This is basically the interest rate that the respective lessee would have to pay in order to raise the necessary borrowed capital to acquire an asset in a similar economic environment with a similar term and security or similar conditions that offers him a comparable right of use.

Right-of-use assets are measured at cost comprising the following:

- the amount of the initial measurement of lease liability
- any lease payments made at or before the commencement date less any lease incentives received
- any initial direct costs, and
- restoration costs.

Payments associated with short-term leases and leases of low-value assets are recognized on a straight-line basis as an expense in profit or loss. Short-term leases are leases with a lease term of 12 months or less. Low-value assets comprise IT-equipment and small items of office furniture.

Extension and termination options are included in a number of property and equipment leases across the group. These terms are used to maximize operational flexibility in terms of managing contracts. The majority of extension and termination options held are exercisable only by the group and not by the respective lessor.

To optimize lease costs during the contract period, the group sometimes provides residual value guarantees in relation to car leases. The group initially estimates and recognizes amounts expected to be payable under residual value guarantees as part of the lease liability. The amounts are reviewed, and adjusted if appropriate, at the end of each reporting period.

Post-employment benefits

Adtran Networks maintains defined benefit plans in four countries based on the pensionable compensation of its employees and their length of service. Some of these pension plans are financed through external pension funds. Provisions for pensions are actuarial measured using the projected unit credit method for defined benefit pension plans, considering not only the pension obligations and vested pension rights known at the reporting date, but also expected future salary and benefit increases. The interest rate used to determine the present value of the obligations is generally set based on the yields on high-quality corporate bonds or government bonds in the respective currency area. The return on existing plan assets and expenses for interest added to obligations are reported in finance costs. Service cost is classified as operating expenses. Past service cost not recognized due to a change in the pension plan shall immediately be recognized in the period in which the change took effect. Gains and losses arising from adjustments and changes in actuarial assumptions are recognized immediately and in full in the period in which they occur within other comprehensive income. Further details on recognition and measurement of employee benefits are included in note (17).

In addition, Adtran Networks grants defined contribution plans to employees of some group entities in accordance with statutory or contractual requirements. The payments are made to state or private pension insurance funds. Under defined contribution plans, the employer does not assume any other obligations beyond the payment of contributions to an external fund. The amount of the future pension payments will exclusively depend on the contribution made by the employer (and their employees, if applicable) to the external fund, including income from the investment of such contributions. The amounts payable are expensed when the obligation to pay the amounts is established and classified as operating expenses.

Share-based compensation transactions

Employees (including senior executives) of Adtran Networks receive remuneration in the form of share-based compensation transactions, whereby employees render services as consideration for equity instruments (equity-settled transactions) or they are granted stock appreciation rights, which are settled in cash (cash-settled transactions). Share-based compensation transactions are reported and valued in accordance with IFRS 2.

Equity-settled transactions

The cost of equity-settled transactions with employees is measured by reference to the fair value on the grant date. The fair value is determined by an external expert using an appropriate pricing model. See note (38) for further details.

The cost of equity-settled transactions is recognized, together with the corresponding increase in equity, straight-line over the period in which the relevant employees become fully entitled to the award (vesting date). Vesting period ends with the first exercise possibility. From that day, the employee is entitled to benefit. No expense is recognized for awards that do not ultimately vest, except for awards where vesting is conditional upon market condition, which are treated as vesting irrespective of whether or not market condition is satisfied if all other performance conditions are satisfied.

Where the terms of an equity-settled transaction award are modified, the minimum expense recognized is the expense as if the terms had not been modified if the original terms of the award are met. An additional expense is recognized for any modification that increases the total fair value of the share-based compensation transaction or is otherwise beneficial to the employee as measured on the date of modification.

Where an equity-settled award is cancelled, it is treated as if it vested on the date of cancellation, and any expense not yet recognized for the award is recognized immediately. This includes any award where non-vesting conditions within the control of either the entity or the employee are not met. However, if a new award is substituted for the cancelled award and designated as a replacement award on the date that it is granted, the cancelled and new awards are treated as if they were a modification of the original award, as described in the previous paragraph. All cancellations of equity-settled transactions are treated equally.

The dilutive effect of outstanding options is reflected in the computation of earnings per share. See note (30).

Cash-Settled transactions

The cost of cash-settled transactions is measured initially at fair value on the grant date. The fair value is expensed straight-line over the vesting period with recognition of a corresponding provision. The provision is re-measured on each balance sheet date up to and including the settlement date, with changes in the fair value recognized in profit or loss.

Provisions

Provisions are recognized when the group has a present obligation (legal or constructive) as a result of a past event, when it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. The amount recognized as a provision represents the best estimate of the expenditure required to settle the present obligation.

If the group expects at least a partial reimbursement for an item for which a provision has been recognized, for example under an insurance contract, the reimbursement is recognized as a separate asset but only when the reimbursement is virtually certain. The expense related to any provision is presented in profit or loss, net of any reimbursement. If the effect of the time value of money is material, provisions are discounted using a current pre-tax rate that reflects, where appropriate, the risks specific to the liability. Where discounting is used, the increase in the provision over time is recognized in other financial gains and losses, net.

Share capital

Common stock is disclosed in stockholder’s equity.

Incremental costs directly attributable to the issuance of new ordinary shares or options are shown in equity as a deduction, net of tax, from the proceeds.

Where any group company purchases the company’s equity share capital (treasury shares), the consideration paid, including any directly attributable incremental costs, is deducted from equity until the shares are cancelled or reissued. Where such shares are subsequently reissued, any consideration received, net of any directly attributable incremental transaction costs, is included in equity.

Financial instruments

Financial instruments are contracts that give rise to a financial asset in one entity and a financial liability or equity instrument in another entity. Adtran Networks recognizes financial assets and financial liabilities in the balance sheet when a company in the group becomes a contractual party to the financial instrument.

All customary purchases and sales of financial assets are recognized on the trading date, i.e. the date on which Adtran Networks enters into the obligation to purchase the asset.

Financial assets and financial liabilities are generally reported at gross value. Netting only applies if the offsetting of the amounts is legally enforceable and it is intended to actually offset them. In general, Adtran Networks does not intend to offset any amounts.

Financial assets

Adtran Networks’s financial assets include, in addition to trade receivables, cash and cash equivalents, other receivables, other investments and derivative financial instruments.

Classification

Financial assets are initially allocated to one of the following measurement categories in accordance with IFRS 9:

1. measured at amortized cost
2. measured at fair value through profit or loss
3. measured at fair value through other comprehensive income (debt instruments)
4. measured at fair value through other comprehensive income (equity instruments)

Financial assets that are debt instruments according to IAS 32 are classified based on the business model for managing the financial assets and the contractually agreed cash flows. Debt instruments are classified as amortized cost if the business model “hold to collect” applies and contractual cash flows solely consist of principal and interest on the outstanding redemption. If the business model is based on the collection of contractual cash flows as well as on the sale of the instruments and the cash flows only consist of principal and interest, the financial assets are classified at fair value through other comprehensive income (FVOCI). Financial assets held for sale and derivative financial instruments that are not designated as hedges, and financial assets that do not consist solely of payments of principal and interest are classified as at fair value through profit or loss (FVTPL).

Debt instruments are reclassified if the business model for managing those assets changes.

Financial assets with embedded derivatives are considered at their entirety when determining whether their cash flows are solely repayment of the principal and interest.

For investments in equity instruments that are not held for trading, an irrevocable option to account for the equity investments at fair value through comprehensive income (FVOCI) at the time of initial recognition is available. Adtran Networks has not made use of this option.

Adtran Networks classifies receivables that are not subject to factoring, cash and cash equivalents, and rent deposits as financial assets, which are carried at amortized cost. Trade receivables for which a factoring agreement is in place are classified as financial assets at fair value through profit or loss.

Receivables from loss compensation due to existing profit/loss transfer agreements are recognized in the amount of the loss under commercial law to be compensated for the past financial year.

The group has not made use of the option to classify financial assets at fair value through profit or loss upon initial recognition.

Initial measurement

At initial recognition, the group measures a financial asset at its fair value. Trade receivables are initially measured at the transaction price in accordance with IFRS 15. In the case of a financial asset not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition of the financial asset are included in the fair value on initial recognition. Transaction costs of financial assets carried at fair value through profit or loss are expensed immediately.

Subsequent measurement

The subsequent measurement of Adtran Networks' financial assets is based on their classification:

1. at amortized cost: Interest income from these financial assets is reported in the financial income using the effective interest method. Gains and losses on derecognition as well as impairment gains and losses are recorded in the income statement and reported under other operating income and expenses,
2. at fair value through profit or loss: Gains or losses on debt instruments, which are subsequently measured at fair value through profit or loss, are included in the income statement as other operating income or expenses in the period in which they arise. Gains and losses on derivatives are recognized in other financial income in the income statement.

The group subsequently measures all equity instruments at fair value. Changes in fair value are recognized in other gains (losses) in the income statement as applicable.

Impairment

The group assesses expected future credit losses associated with its debt instruments measured at amortized cost based on future expectations. A respective risk provision or, in case of an actual loss that already occurred, an impairment loss is recognized.

Financial assets are in default or credit impaired if there is an objective evidence of impairment. This applies in case of bankruptcy, knowledge of impending insolvency proceedings or if financial assets are overdue more than one year.

Financial assets are considered to be impacted by credit worthiness and are written off if there is no reasonable expectation recovering the financial asset. This could be, inter alia, if debtor payments are delayed more than two years or if the debtor fails to commit to a repayment plan.

General approach

Generally, financial assets are considered as having a low default risk at initial recognition resulting in a 12-month expected credit loss provision. In case of a significant increase in credit risk, the lifetime expected credit losses are recognized. Amongst others debtor’s payment delays of more than 30 days or the decrease of the rating are considered an indicator for increase in default risk.

Adtran Networks assesses expected credit losses using the general approach for cash and cash equivalents and material other financial assets, except for trade receivables. Further details are described in note (33) on financial risk management.

Simplified approach

For trade receivables and contract assets with no significant financing component the group applies the simplified approach, which requires lifetime expected credit losses to be recognized from initial recognition of the receivables.

In order to measure expected credit losses, trade receivables are summarized on the basis of common credit risk characteristics considering the region of business and overdue days. The expected credit losses are based on customers' historical payment behavior for a period of three years as well as on historical defaults. These are reviewed once a year and adjusted to take current and future information on macroeconomic elements (e.g. geopolitical events, currency fluctuations, inflation, trade wars, state subsidies) into account, that have an influence on customers' ability to meet their financial obligations.

Contract assets relate to work in progress that has not been invoiced and bears essentially the same risk characteristics as trade receivables. The group has therefore concluded that the expected loss rates for trade receivables are a reasonable approximation of the loss ratios for contract assets.

Derecognition

Adtran Networks derecognizes financial assets (or parts of their financial assets where applicable) when the rights to receive cash flows from the financial asset have expired or have been transferred and the group substantially transferred all opportunities and risks associated with the ownership.

In the case of sales of trade receivables the requirements for a receivable transfer according to IFRS 9.3.2.4 (a) are met. Receivables are derecognized if substantially all risks and rewards are transferred. If the receivables are transferred in accordance to IFRS 9.3.2.4 (a) and the review of IFRS 9.3.2.6 shows that neither substantially all risks and rewards have been transferred nor retained, Adtran Networks recognizes the remaining continuing involvement in accordance with IFRS 9.3.2.16. Adtran Networks continues to manage the receivables sold (servicing). Adtran Networks retains control of disposal over the receivables sold.

Financial liabilities

The financial liabilities of Adtran Networks include trade payables and other liabilities, bank overdrafts, loans and derivative financial instruments. The accounting treatment of lease liabilities is dealt with separately as presented in the section "Leasing".

Financial liabilities from the profit transfer due to existing profit/loss transfer agreements are reported in the amount of the profit in accordance with commercial law to be transferred for the past financial year.

Classification

Financial liabilities are initially assigned to one of the following valuation categories in accordance with IFRS 9:

1. measured at amortized cost
2. measured at fair value through profit or loss.

The group has not used the option to designate financial liabilities as "at fair value through profit or loss" on initial recognition of financial liabilities.

Initial measurement

At initial recognition, the group measures a financial liability at its fair value less, in the case of a financial liability not at fair value through profit or loss, transactions costs that are directly attributable to the acquisition of the financial liability.

Subsequent measurement

The measurement of financial liabilities of Adtran Networks depends on their classification as follows:

1. Financial liabilities at fair value through profit or loss: This category includes derivative financial instruments that are not designated as hedging instruments in accordance with IFRS 9 hedge accounting rules. Gains and losses are recognized in financial income in the income statement.
2. Financial liabilities measured at amortized cost: This category includes trade payables and interest-bearing loans. After initial recognition, these are measured at amortized cost using the effective interest method. Gains and losses are recognized in profit or loss when the liabilities are derecognized as well as in case of amortization using the effective interest method. Amortization according to the effective interest method is included in interest expenses in the profit and loss account.

Derecognition

A financial liability is derecognized when the obligation under the liability is settled, cancelled or expired. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, this exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability. In case of minor changes in conditions a change in the present value will be considered in profit or loss.

Derivative financial instruments and hedging activities

The group entered into forward rate agreements to hedge foreign currency exposure of expected future cash flows in foreign currency.

Derivatives are initially recognized at fair value on the date a derivative contract is entered into and are subsequently re-measured to their fair value at the end of each reporting period. The accounting for subsequent changes in the fair value depend on whether the derivative is designated as a hedging instrument.

The group did not apply hedge accounting rules according to IFRS 9 during the years ended December 31, 2023 and 2022. Thus, changes in fair value of the derivatives are recognized in profit or loss immediately.

Contracts with customers

Revenue recognition

Revenue is recognized when a performance obligation is satisfied, i.e. when control of the goods or services is transferred to the customer. Control is passed either at a point in time or over time.

When hardware is sold control is transferred at a point in time depending on the delivery terms. Software licenses are either sold together with the hardware or sold separately. Control in case of software is transferred when the customer is able to use the software. In the case of software sold separately, revenue is recognized at the point of time.

In case of service level agreements[3] or maintenance contracts as well as period-related software licenses revenue is recognized over a period of time provided that further services are to be rendered during the term of the contract. The customer receives and uses all services at the same time as they are provided by the company.

Bill-and-hold arrangements or consignment stores are recognized when the performance obligation to transfer a product are met and the customer obtains control.

Transaction price

In general, the transaction price is the price from the order further considering the specific arrangements of the underlying contract. For contracts that contain multiple performance obligations, the transaction price is allocated to the individual performance obligations based on the relative individual selling price. A consideration to be paid to a customer is recorded as a reduction in the transaction price, hence reducing revenues, unless the payment relates to a specific delivery of goods by the customer or service provided by the customer.

The transaction price from a contract may contain fixed and/or variable components.

With regard to financial components, the practical remedy of not considering the effects of a financing component is applied if the maximum duration of the period between transfer of goods or services and payment by the customer does not exceed one year.

The group does not adjust any of the transaction prices for the time value of money.

[3] Commitment between a service provider and a client. Aspects of the service such as quality and availability are agreed between the service provider and the service user.

Contract assets and liabilities

A contract asset is recognized when Adtran Networks has transferred the goods or services. The contract asset is recognized as a receivable if an unconditional payment entitlement of the company exists.

A contract liability is recognized if the company receives the consideration before it has delivered the goods or services. This applies in particular to advance payments for service level agreements and maintenance contracts.

Contract assets and liabilities related to one contract are netted and shown as either contract assets or contract liability.

In addition, certain customers have the benefit of customer loyalty programs which result in the recognition of a contract liability and reduction of revenues based on the relative individual selling price.

Volume rebates can be identified as incentive programs where the company makes a payment to the customer once a specified sales volume has been achieved with the customer. Volume rebates are not related to separate performance obligations but are considered as a variable component of the transaction price.

Customer rights of return are considered in the transaction price based on experience.

The company has made use of the option to recognize all costs in relation to conclude and extend a contract which would be amortized over a period of maximum one year upon activation, directly in profit and loss. This concerns all such costs.

Warranties

Exclusively all warranties are so-called “assurance type” warranties and therefore do not form separate performance obligations. For these essentially legal warranties, accruals according to IAS 37 are considered.

Cost of goods sold

The cost of goods sold comprises the costs incurred in the production and rendering of services. This item subsumes both the direct cost of materials and production directly assignable to a product and indirect (overhead) costs, including the depreciation of production equipment, amortization of production related intangible assets and write-downs on inventories. The cost of goods sold also includes appropriation to the warranty provision and amortization of purchased technologies. Income from the reversal of write-downs on inventories reduces the cost of goods sold.

Interest income and expenses

For all financial instruments measured at amortized cost, interest income or expenses are recorded using the effective interest rate, which is the rate that exactly discounts the estimated future cash payments or receipts through the expected life of the financial instrument or a shorter period, where appropriate, to the net carrying amount of the financial asset or liability.

Taxes

Current income tax

Current income tax assets and liabilities for the current and prior periods are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are these that are enacted or substantively enacted on the respective balance sheet date.

Deferred income tax

Deferred tax is provided using the liability method on temporary differences at the balance sheet date between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes.

Deferred tax liabilities are recognized for all taxable temporary differences, except:

- where the deferred income tax liability arises from the initial recognition of goodwill or of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss; and
- in respect to taxable temporary differences associated with investments in subsidiaries, where the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the near future.

Deferred tax assets are recognized for all deductible temporary differences, carry forward of unused tax credits and unused tax losses, to the extent that it is probable that taxable profit will be available against which the deductible temporary differences, and the carry forward of unused tax credits and unused tax losses can be utilized, except:

- where the deferred tax asset related to the deductible temporary difference arises from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss; and
- in respect of deductible temporary differences associated with investments in subsidiaries, deferred tax assets are recognized only to the extent that it is probable that the temporary differences will not reverse in the foreseeable future and no taxable profit will be available against which the temporary differences can be utilized.

The carrying amount of deferred tax assets is reviewed on each balance sheet date and reduced to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilized. Unrecognized deferred tax assets are reassessed on each balance sheet date and are recognized to the extent that it has become probable that future taxable profit will allow the deferred tax asset to be utilized.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply to the year when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted on the balance sheet date. Future changes in tax rates are recognized on the balance sheet date if their impact is materially certain as part of the tax legislation process.

According to IAS 12.74 deferred tax assets and liabilities have been set off in 2023 insofar as offsetting qualifications apply.

The best estimate for any uncertain current and deferred income tax items to be recognized is the expected tax payment.

Earnings per share

The group calculates basic and diluted earnings per share in accordance with IAS 33. Basic earnings per share are calculated based on the weighted average number of no- par value shares outstanding during the reporting period. Diluted earnings per share are calculated based on the weighted average number of no-par value shares outstanding during the reporting period, but also including the number of no-par value shares that could come into existence if all stock options that are in the money were exercised on the balance sheet date.

(5) Significant accounting judgements, estimates and assumptions

The preparation of the group's financial statements requires management to make judgments, estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities and the disclosure of contingent liabilities on the reporting date. However, uncertainty about these assumptions and estimates could result in outcomes that could require a material adjustment to the carrying amount of the asset or liability affected in the future. Assumptions used to make estimates are regularly reviewed. Changes in estimates only affecting one accounting period are only considered in that accounting period. In the case of changes in estimates that affect the current and future accounting periods, these are considered appropriately in the current and subsequent accounting periods.

Discussed below are the key judgments and assumptions concerning the future and other key sources of estimation and uncertainty on the balance sheet date that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year.

Valuation of inventories

Inventories are valued at the lower of cost or net realizable value.The net realizable value is the estimated selling price that could be realized on the closing date in the context of ordinary business activity, less estimated costs of completion and costs necessary to make the sale. Estimates of the net realizable value have to be based on the most reliable information at the time the estimates are made. Inventory depreciation covers risks relating to slow-moving items or technical obsolescence. Application of moving average price or net realizable value as well as consideration of risks in the inventory depreciation is subject to estimates that have a significant effect on the carrying amount of inventories.

In addition, significant estimates are involved in the determination of provisions related to the valuation of excess and obsolete material available at contract manufacturers. The assessment of whether and to what extent available material for which non-cancelable purchase commitments exist can be used in the future is based on past experience.

Development expenses

Development expenses are capitalized in accordance with the accounting policy described in note (4). Initial capitalization of costs is based on management judgment assuming that technological and economic feasibility is confirmed, usually when a product development project has reached a defined milestone according to an established project management model. In determining the amounts to be capitalized, management makes assumptions regarding the expected future cash generation of the assets, discount rates to be applied and the expected period of benefits. See note (13) for the carrying amounts involved.

Impairment of non-financial assets

The group assesses whether there are any indicators of impairment for all non-financial assets on each reporting date. Goodwill and other indefinite life intangibles are tested for impairment annually and at other times when such indicators exist. Other non-financial assets are tested for impairment when there are indicators that the carrying amounts may not be recoverable. When value-in-use calculations are undertaken, management must estimate the expected future cash flows from the asset or cash generating unit and choose a suitable discount rate in order to calculate the present value of these cash flows. See note (13) for the carrying amounts involved.

Pension obligations

Pension and similar post-employment obligations as well as the related expenses are recognized based on actuarial calculations. The actuarial valuation of the present value of pension obligations depends on a number of assumptions regarding the discount rate, the expected salary increase rate, the expected pension trend, and life expectancy. In the event that changes in the assumptions regarding the valuation parameters are required, the future amounts of the pension obligations as well as the pension benefit costs may be affected materially. For further details on the valuation of pension obligations, see note (17).

Share-based compensation transactions

The group measures the cost of equity-settled and cash-settled transactions with employees by reference to the fair value of the equity instruments on the date at which they are granted or on the balance sheet date. Estimating fair value requires determining the most appropriate valuation model for a grant of equity instruments, which is dependent on the terms and conditions of the grant. This also requires determining the expected life of the option, volatility and dividend yield, as well as further assumptions. See note (38) for the carrying amounts involved.

Provisions

Significant estimates are involved in the determination of provisions related to warranty costs and legal proceedings a. The estimate of warranty claims is based on historic data and is extrapolated into the future. Legal proceedings often involve complex legal issues and are subject to substantial uncertainties. Accordingly, management exercises considerable judgment in determining whether there is a present obligation as a result of a past event at the end of the reporting period, whether it is more likely than not that such a proceeding will result in an outflow of resources and whether the amount of the obligation can be reliably estimated. Other provisions are described in note (18).

Accounting for combined supply and service contracts

Adtran Networks provides contracts that have more than one separate performance obligation (multiple element arrangements). The transaction price is allocated to the performance obligations in the contract by reference to their relative standalone selling prices.If a standalone selling price is not directly observable Adtran Networks will need to estimate it. These estimates have a significant impact on the timing of revenue recognition.

Leases

In determining the lease term, management considers all facts and circumstances that create an economic incentive to exercise an extension option, or not exercise a termination option. Extension options (or periods after termination options) are only included in the lease term if the lease is reasonably certain to be extended (or not terminated).

Taxes

Uncertainties exist with respect to the interpretation of complex tax regulations and the amount and timing of future taxable income. Given the wide range of international business relationships and the long-term nature and complexity of existing contractual agreements, differences arising between the actual results and the assumptions made, or future changes to such assumptions, could necessitate future adjustments to tax income and expenses already recorded. The group establishes provisions, based on reasonable estimates, for possible consequences of audits by the tax authorities of the respective countries in which it operates. The amount of such provisions is based on various factors, such as experience of previous tax audits and differing interpretations of tax regulations by the taxable entity and the responsible tax authority. Such differences of interpretation may arise on a wide variety of issues depending on the conditions prevailing in the respective group company’s domicile.

Deferred tax assets are recognized for all unused tax losses to the extent that it is probable that taxable profit will be available to utilize these losses. Significant management judgment is required to determine the amount of deferred tax assets that can be recognized, based upon the likely timing and level of future taxable profits together with future tax planning strategies. See note (26) for the carrying amounts involved.

Non-financial risks

The assessment of the impact of non-financial risks (global warming, circular economy, new regulations) on the recognition and measurement of assets and liabilities is based on significant management judgments and assumptions. Non-financial risks are assessed by management as long-term risks that currently have no significant impact on net realizable values, recoverable amounts, useful lives or the requirement to recognize provisions.

(6) Principles of consolidation, scope of consolidation and shareholdings

Subsidiaries are all entities over which Adtran Networks SE directly or indirectly has control. Subsidiaries are fully consolidated from the date on which control is transferred to the group. They are deconsolidated at the date when the control ends. Adtran Networks SE controls an entity when it is exposed to or has the rights to variable returns from its involvement and has the ability to affect those returns through its power to direct the activities of the entity.

Intercompany revenues, expenses, income, receivables and payables within the group are eliminated.

Intercompany profits that arise from deliveries of products and services provided within the group are eliminated.

Business combinations

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, measured at acquisition date fair value and the amount of any non-controlling interest in the acquiree. For each business combination, the acquirer measures the non-controlling interest in the acquiree either at fair value or at the proportionate share of the acquiree’s identifiable net assets. Acquisition costs incurred are expensed.

When a group company acquires a business, it assesses the financial assets and liabilities acquired for appropriate classification and designation in accordance with the contractual terms, economic circumstances and relevant conditions on the acquisition date. This includes the separation of embedded derivatives in host contracts by the acquiree.

If the business combination is achieved in stages, the acquisition date fair value of the acquirer’s previously held equity interest in the acquiree is re-measured to fair value on the acquisition date through profit and loss.

Any contingent consideration to be transferred by the acquirer will be recognized at fair value on the acquisition date. Subsequent changes in the fair value of contingent considerations that represent an asset or liability are recognized in the income statement in accordance with IFRS 9.

Goodwill is initially measured at cost being the excess of the consideration transferred over the group’s net identifiable assets acquired and measured at fair value as well as liabilities assumed and measured at fair value. If this consideration is lower than the fair value of the net assets of the company acquired, the difference is recognized in profit or loss after reassessment.

After initial recognition, goodwill is measured at cost less any accumulated impairment losses. For the purpose of impairment testing, goodwill acquired in a business combination is, from the acquisition date, allocated to each of the group’s cash generating units that are expected to benefit from the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units.

Where goodwill forms part of a cash-generating unit and where part of the operation within that unit is disposed of, the goodwill associated with the operation disposed of is included in the carrying amount of the operation when determining the gain or loss on disposal of the operation. Goodwill disposed of in this circumstance is measured based on the relative values of the operation disposed of and the portion of the cash-generating unit retained.

Scope of consolidation

The consolidated financial statements for the year ended December 31, 2023, include the financial statements of Adtran Networks SE plus all of the 20 (prior year: 20) wholly owned subsidiaries listed below (hereafter collectively referred to as "the group companies"):

(in thousands)		IFRS equity	IFRS net income/ (loss)	Share in equity owned directly	Share in equity owned indirectly
Adtran Networks North America, Inc., Norcross/Atlanta (Georgia), USA (Adtran Networks North America)	USD	93,709	11,569	— %	100 %
Adtran Networks (UK) Ltd., York, United Kingdom (Adtran Networks York)	GBP	15,849	1,623	100 %	— %
Oscilloquartz SA, Saint-Blaise, Switzerland (OSA Switzerland)	CHF	5,080	328	100 %	— %
Adtran Networks Spolka z o.o., Gdynia, Poland (Adtran Networks Poland)	PLN	64,849	4,759	100 %	— %
Adtran Networks Israel Ltd., Ra'anana/Tel Aviv, Israel (Adtran Networks Israel)	ILS	9,188	5,969	100 %	— %
ADVA Optical Networking (Shenzhen) Ltd., Shenzhen, China (ADVA Optical Networking Shenzhen)	CNY	51,150	6,891	100 %	— %
Oscilloquartz Finland Oy, Espoo, Finland (OSA Finland)	EUR	275	39	100 %	— %
ADVA IT Solutions Pvt. Ltd., Bangalore, India (ADVA IT Solutions)	INR	66,019	—	— %	100 %
ADVA Optical Networking Trading (Shenzhen) Ltd., Shenzhen, China (ADVA Optical Networking Trading)	USD	2,079	197	— %	100 %
Adtran Networks Singapore Pte. Ltd., Singapore (Adtran Networks Singapore)	SGD	2,116	156	100 %	— %
Adtran Networks Hong Kong Ltd., Hongkong, China (Adtran Networks Hongkong)	USD	1,204	141	— %	100 %
ADVA Optical Networking (India) Private Ltd., Gurgaon, India (ADVA Optical Networking India)	INR	249,976	52,514	1 %	99 %
ADVA Optical Networking Serviços Brazil Ltda., São Paulo, Brazil (ADVA Optical Networking São Paulo)	BRL	2,740	224	99 %	1 %
Adtran Networks Japan Co., Ltd., Tokyo, Japan (Adtran Networks Tokyo)	JPY	98,853	4,076	100 %	— %
Adtran Networks AB, Kista/Stockholm, Sweden (Adtran Networks Stockholm)	SEK	3,689	935	100 %	— %
ADVA NA Holdings Inc., Norcross/Atlanta (Georgia), USA (ADVA NA Holdings)	USD	60,711	(1)	100 %	— %
Adtran Networks Pty Ltd., Sydney (New South Wales), Australia (Adtran Networks Australia)	AUD	1,725	(44)	— %	100 %
Adtran Networks B.V., Hilversum, Netherlands (Adtran Networks Netherlands)	EUR	329	13	100 %	— %
Adtran Networks Canada Inc., Ottawa, Kanada (Adtran Networks Canada)	CAD	4,115	481	100 %	— %
Adva Network Security GmbH, Berlin, Germany (ANS)	EUR	40,400	8,133	100 %	— %

Changes in the scope of consolidation

In 2023, a new factoring agreement resulted in the requirement to consolidate a structured entity for the first time in accordance with IFRS 10.7(b). The True Value S.á r.l./Compartment 8, Luxembourg, was set up in December 2023 to execute the sale of receivables of Adtran Networks SE, Adtran Networks North America, Inc. and Adtran, Inc. to NordLB. In this company, Adtran Networks determines the main relevant activities despite not having an equity interest and thus influences the variable returns. The initial consolidation led in particular to the recognition of trade receivables of EUR 15,233 thousand and a financial liability of EUR 13,286 thousand. Beyond this, the inclusion of the structured company had no significant impact on the net assets, financial position and results of operations of Adtran Networks.

There were no further changes to the scope of consolidation in 2023.

(7) Foreign currency translation

The functional currency of each group company is the currency of the main economic environment in which the company operates. The reporting currency of Adtran Networks' consolidated financial statements is the functional currency of the parent company, Adtran Networks SE (euro).

Currency translation on entity level

Transactions in foreign currencies are initially recorded by the group entities at their respective functional currency rates prevailing on the date of the transaction. Monetary assets and liabilities denominated in foreign currencies are retranslated at the functional currency spot rate of exchange ruling on the reporting date. Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates on the dates of the initial transactions. Non-monetary items measured at fair value in a foreign currency are translated using the exchange rates on the date when the fair value is determined. The exchange differences arising from the translation are recognized in profit or loss in financial income/expense.

Currency translation on group level

The assets and liabilities of foreign operations are translated into euro at the rate of exchange prevailing on the reporting date, and their income statements are translated at the average rate for the reporting period. The exchange differences arising from the translation are recognized in accumulated other comprehensive income. On disposal of a foreign operation, the component of accumulated other comprehensive income related to that particular foreign operation is recognized in the income statement.

Any goodwill arising on the acquisition of a foreign operation and any fair value adjustments to the carrying amount of assets and liabilities arising on acquisition are treated as assets and liabilities of the foreign operation and translated at the closing rate.

The relevant exchange rates for translating foreign operations into the reporting currency are as follows:

	Closing rate Dec. 31, 2023	Closing rate Dec. 31, 2022	Average rate Jan. 1 to Dec. 31, 2023	Average rate Jan. 1 to Dec. 31, 2022
AUD	1.62630	1.56930	1.62743	1.51504
BRL	5.36180	5.63860	5.39942	5.42318
CAD	1.46420	1.44400	1.45932	1.36851
CHF	0.92600	0.98470	0.97158	1.00393
CNY	7.85090	7.35820	7.65028	7.07352
GBP	0.86905	0.88693	0.86957	0.85228
HKD	8.63140	8.31630	8.46349	8.23379
ILS	3.99930	3.75540	3.98083	3.53103
INR	91.90450	88.17100	89.27303	82.63131
JPY	156.33000	140.66000	151.49295	137.70900
PLN	4.33950	4.68080	4.54068	4.68382
SEK	11.09600	11.12180	11.46644	10.61874
SGD	1.45910	1.43000	1.45180	1.45016
USD	1.10500	1.06660	1.08105	1.05142

Notes to the consolidated statement of financial position

(8) Cash and cash equivalents

Cash and cash equivalents include current funds as well as current financial assets with a remaining maturity that does not exceed three months from the date of acquisition and that are readily convertible to a known amount of cash and only subject to an insignificant risk of changes in value.

On December 31, 2023, cash of EUR 2,545 thousand (December 31, 2022: EUR 2,669 thousand) is held in China and is subject to local exchange control regulations. These local exchange control regulations provide for restrictions on exporting capital from the country, other than through normal dividends.

Cash at banks earns interest at floating rates based on daily bank deposit rates.

Cash equivalents are invested for varying periods of between one day and three months, depending on the immediate cash requirements of the group, and earn interest at the respective short-term deposit rates.

(9) Trade accounts receivable

Trade accounts receivable are non-interest-bearing and are due within 30 to 120 days in general. For specific projects, other payment terms may be agreed.

Gross and net trade accounts receivable are as follows:

(in thousands of EUR)	Dec. 31, 2023	Dec. 31, 2022
Gross trade accounts receivable	**119,102**	**127,547**
Allowance for expected credit losses	(3,487)	(3,896)
Net trade accounts receivable	**115,615**	**123,651**

A reconciliation of the risk provision for trade accounts receivable carried at amortized cost is included in the table below:

(in thousands of EUR)	2023	2022
Jan. 1	**3,896**	**2,629**
Increase of risk provision	—	230
Release of risk provision	(339)	—
Addition of specific allowances	—	915
Usage	(7)	—
Foreign currency translation effects	(63)	122
Dec. 31	**3,487**	**3,896**

Further information on default risk from trade accounts receivable is included in note (33) on financial risk management.

In Q4 2023, the group transitioned from the pre-existing revolving factoring agreement to a joint receivable purchase and servicing agreement together with Adtran Inc. as an additional seller. The new agreement results in the requirement to consolidate a special purpose entity. For further information refer to note (6).

(10) Inventories

The table below summarizes the composition of inventories:

(in thousands of EUR)	Dec. 31, 2023	Dec. 31, 2022
Raw materials and supplies	32,978	45,733
Work in progress	7,645	3,673
Finished goods	65,650	79,423
	106,273	**128,829**

In 2023, impairment of inventories amounting to EUR 11,825 thousand (prior year: EUR 8,619 thousand) was recognized as an expense within cost of goods sold. This amount includes reversals of earlier write-downs amounting to EUR 770 thousand (prior year: EUR 999 thousand) due to higher selling and input prices.

In 2023 and 2022, material costs of EUR 280,371 thousand and EUR (369,233) thousand, respectively, have been recognized.

(11) Contract assets

Contract assets amounting to EUR 340 thousand (prior year: EUR 248 thousand) relate to claims from return deliveries. Contract assets are subject to the impairment requirements of IFRS 9, however the identified impairment losses were insignificant.

(12) Other current and non-current assets

Other current assets are as follows:

(in thousands of EUR)	Dec. 31, 2023	Dec. 31, 2022
Non-financial assets		
Advance payments to contract manufacturers	49,489	41,460
Prepaid expenses	4,089	4,688
Receivables due from tax authorities	2,682	1,073
Receivables related to warranty services	1,506	1,728
Other	778	1,322
Total current non-financial assets	**58,543**	**50,271**
Financial assets		
Receivables from Adtran Holdings, Inc. from loss absorption	23,934	—
Government grant allowances for research projects	18,854	6,860
Positive fair values of derivative financial instruments	5	59
Reserves relating to a revolving factoring agreement	159	1,113
Volume discounts of suppliers	—	—
Other	605	1,177
Total current financial assets	**43,557**	**9,209**
	102,100	**59,480**

Other current assets are non-interest-bearing and are generally due within 0 to 60 days.

Receivables related to warranty services include expected returns of parts replaced in advance.

From 2023, advance payments to contract manufacturers will be reported under other assets. The previous year's disclosure was adjusted accordingly. Previously, these advance payments were reported under inventories.

Further disclosures on derivative financial instruments are given in note (32).

Other non-current assets are as follows:

(in thousands of EUR)	Dec. 31, 2023	Dec. 31, 2022
Financial assets		
Investments	0	0
Government grant allowances for research projects	21,411	4,240
Rent deposits	1,768	1,609
Other	141	250
Total non-current assets	**23,320**	**6,099**

The fair value of the investment of 7.1 % (previous year: 7.1 %) of the shares in Saguna Networks Ltd., Nesher, Israel, amounted to zero at year-end 2023. A review of the fair value at year-end did not indicate any write-up.

On December 31, 2023, government grants for 28 research projects are recognized (December 31, 2022: 32 research projects). The increase in government grants for research projects is mainly due to the new research project. These public grants relate to programs promoted by the EU and national governments. Adtran Networks does not expect any defaults based on high credit rankings.

The rent deposits are mainly assets held in trust. Adtran Networks does not expect any defaults.

On December 31, 2023 and 2022, no non-financial non-current assets have been reported.

The classification of financial instruments according to IFRS 9 is included in note (32).

(13) Fixed assets

The following changes in fixed assets were recorded in 2023 and 2022:

(in thousands of EUR)	Historical cost						
	Jan. 1, 2023	Additions	Disposals/ retirements	Reclassifications	Currency translation adjustments	Change in scope of consolidation	Dec. 31, 2023
Finance leases (prior to IFRS 16)	—	—	—	—	—	—	—
	—	**—**	**—**	**—**	**—**	**—**	**—**
Right-of-use assets							
Leased cars	2,698	1,470	(46)	—	(26)	—	4,096
Leased premises	34,658	17,047	(6,933)	—	(352)	—	44,420
	37,357	**18,517**	**(6,979)**	**—**	**(377)**	**—**	**48,517**
Property, plant and equipment							
Land and buildings	19,143	3,358	(166)	5,779	(45)	—	28,068
Technical equipment and machinery	126,207	11,789	(2,324)	693	(72)	—	136,292
Factory and office equipment	17,472	1,878	(477)	—	(39)	—	18,833
Assets under construction	6,570	1,970	—	(6,528)	—	—	2,011
	169,391	**18,995**	**(2,967)**	**(57)**	**(156)**	**—**	**185,205**
Intangible assets							
Goodwill	121,370	—	—	—	(1,217)	—	120,153
Capitalized development projects	345,359	45,820	—	—	—	—	391,179
Thereof capitalized development projects in progress	*36,739*	*18,043*	*(836)*	*(14,732)*	—	—	*39,214*
Intangible assets acquired in business combinations	78,557	—	—	—	(426)	—	78,131
Other purchased and internally generated intangible assets	85,612	3,409	(4,339)	57	(132)	—	84,607
Thereof internally generated intangible assets in progress	*17,911*	*1,509*	—	*(492)*	—	—	*18,927*
	630,899	**49,229**	**(4,339)**	**57**	**(1,775)**	**—**	**674,070**
	837,646	**86,740**	**(14,286)**	**—**	**(2,309)**	**—**	**907,792**

	Accumulated depreciation								Net book values	
	Jan. 1, 2023	Depreciation of the period	Impairment of the period	Depreciation on disposals/ retirements	Reclassifications	Currency translation adjustments	Change in scope of consolidation	Dec. 31, 2023	Dec. 31, 2023	Dec. 31, 2022
	—	—	—	—	—	—	—	—	—	—
	—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
	1,366	847	—	(46)	—	(10)	—	2,158	1,939	1,332
	17,356	5,264	—	(4,412)	—	(119)	—	18,090	26,331	17,302
	18,723	**6,111**	**—**	**(4,458)**	**—**	**(129)**	**—**	**20,247**	**28,269**	**18,634**
	14,257	980	—	(166)	—	(38)	—	15,034	13,035	4,885
	104,422	12,051	—	(1,916)	—	(128)	—	114,428	21,864	21,785
	14,801	1,526	—	(468)	—	(27)	—	15,832	3,001	2,671
	—	—	—	—	—	—	—	—	2,011	6,570
	133,480	**14,558**	**—**	**(2,549)**	**—**	**(194)**	**—**	**145,294**	**39,911**	**35,911**
	50,063	—	4,553	—	—	638	—	55,254	64,899	71,307
	247,384	39,241	—	—	—	—	—	286,624	104,555	97,975
	—	—	—	—	—	—	—	—	*39,214*	*36,739*
	70,038	3,269	—	—	—	(416)	—	72,891	5,241	8,519
	66,009	1,055	—	(4,339)	—	(124)	—	62,600	22,006	19,604
	—	—	—	—	—	—	—	—	*18,927*	*17,911*
	433,493	**43,565**	**4,553**	**(4,339)**	**—**	**98**	**—**	**477,370**	**196,701**	**197,406**
	585,696	**64,233**	**4,553**	**(11,346)**	**—**	**(225)**	**—**	**642,911**	**264,881**	**251,950**

(in thousands of EUR)	Historical cost						
	Jan. 1, 2022	Additions	Disposals/ retirements	Reclassifications	Currency translation adjustments	Change in scope of consolidation	Dec. 31, 2022
Finance leases (prior to IFRS 16)	—	—	—	—	—	—	—
	—	**—**	**—**	**—**	**—**	**—**	**—**
Right-of-use assets							
Leased cars	3,706	804	(1,732)	—	(80)	—	2,698
Leased premises	35,762	2,164	(3,348)	—	81	—	34,658
	39,468	**2,968**	**(5,080)**	**—**	**1**	**—**	**37,356**
Property, plant and equipment							
Land and buildings	18,791	335	(69)	12	74	—	19,143
Technical equipment and machinery	118,489	10,468	(4,507)	263	1,494	—	126,207
Factory and office equipment	17,153	1,616	(1,291)	—	(6)	—	17,472
Assets under construction	1,837	5,075	—	(345)	4	—	6,570
	156,270	**17,494**	**(5,868)**	**(70)**	**1,566**	**—**	**169,392**
Intangible assets							
Goodwill	119,459	—	—	—	1,911	—	121,370
Capitalized development projects	303,254	42,105	—	—	—	—	345,359
Thereof capitalized development projects under construction	*39,191*	*22,483*	—	*(24,935)*	—	—	*36,739*
Intangible assets acquired in business combinations	75,818	—	—	—	2,741	—	78,558
Other purchased and internally generated intangible assets	71,891	13,553	(121)	70	218	—	85,611
Thereof internally generated intangible assets under construction	*5,096*	*12,815*	—	—	—	—	*17,911*
	570,421	**55,658**	**(121)**	**70**	**4,870**	**—**	**630,899**
	766,160	**76,120**	**(11,069)**	**—**	**6,437**	**—**	**837,647**

	Accumulated depreciation								Net book values	
	Jan. 1, 2022	Depreciation of the period	Impairment of the period	Depreciation on disposals/ retirements	Reclassifications	Currency translation adjustments	Change in scope of consolidation	Dec. 31, 2022	Dec. 31, 2022	Dec. 31, 2021
	—	—	—	—	—	—	—	—	—	—
	—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
	2,236	926	—	(1,725)	—	(70)	—	1,367	1,332	1,470
	14,741	5,078	—	(2,343)	—	(120)	—	17,356	17,302	21,021
	16,977	**6,004**	**—**	**(4,068)**	**—**	**(190)**	**—**	**18,723**	**18,634**	**22,491**
	13,336	878	—	(69)	—	112	—	14,257	4,885	5,455
	94,816	12,675	—	(4,357)	—	1,288	—	104,422	21,785	23,673
	14,792	1,413	—	(1,287)	—	(116)	—	14,801	2,671	2,361
	—	—	—	—	—	—	—	—	6,570	1,837
	122,944	**14,966**	**—**	**(5,713)**	**—**	**1,284**	**—**	**133,480**	**35,911**	**33,326**
	47,864	—	3,460	—	—	(1,261)	—	50,063	71,307	71,595
	205,468	41,916	—	—	—	—	—	247,384	97,975	97,786
	—	—	—	—	—	—	—	—	*36,739*	*39,191*
	63,835	3,748	—	—	—	2,455	—	70,038	8,519	11,982
	63,351	2,605	—	(121)	—	172	—	66,008	19,604	8,540
	—	—	—	—	—	—	—	—	*17,911*	*5,096*
	380,518	**48,269**	**3,460**	**(121)**	**—**	**1,366**	**—**	**433,493**	**197,405**	**189,903**
	520,439	**69,240**	**3,460**	**(9,902)**	**—**	**2,460**	**—**	**585,696**	**251,950**	**245,720**

Right-of-use assets

Lease terms of between 36 and 120 months were applied considering the minimum rental periods and contractual extension options. In 2023, depreciation of EUR 847 thousand for vehicles (2022: EUR 926 thousand) and EUR 5,264 thousand for office and building rentals (2022: EUR 5,078 thousand) are included in operating profit. Further an impairment of EUR 332 thousand for reduced usage of the office in Bangalore, as well as the related leasehold improvements, was included in operating profit in 2020. No impairment was made in 2021.

In 2023 an amount of EUR 979 thousand, which relates to short-term leases is recognized in profit and loss (2022: EUR 796 thousand). In addition, in 2023 variable payments of EUR 3,308 thousand were not included in the measurement of lease liabilities and are also recognized in profit and loss (2022: EUR 2,499 thousand). These mainly relate to operating costs and maintenance of leased assets. There are no major lease payments related to low value contracts. In the cash flow statement, the cash outflows resulting from these items are included in the cash flow from operating activities.

Further information on the corresponding lease liabilities is provided in note (14).

Property, plant and equipment

The classification and changes in property, plant and equipment are shown in the analysis of changes in fixed assets.

In 2023 and 2022, there were neither impairments nor write-backs of property, plant and equipment impaired in prior years.

Goodwill

The table below shows the composition of goodwill allocated to cash-generating units:

(in thousands of EUR)	Dec. 31, 2023	Dec. 31, 2022
Adtran Networks SE plus	45,978	47,242
Adtran Networks York	—	4,462
Adtran Networks North America	18,921	19,602
	64,899	**71,307**

Impairment of goodwill

In 2023, the goodwill Adtran Networks York was fully impaired. In 2022, the goodwill Adtran Networks York OSA Switzerland was fully impaired.

Key assumptions used in impairment testing

All entities, which are acting on their own account and are capable to generate revenues independently based on own customer relationships and own distribution channels are considered as separate cash-generating units. All dependent development service providing, logistical service and sales service providing entities are considered together with the Adtran Networks SE in one combined cash-generating unit (Adtran Networks SE plus). This as Adtran Networks SE as owner of all technologies is responsible for future developments and utilization and cost-plus contracts exist between the respective companies and Adtran Networks SE for the remuneration of the services. For impairment test purposes goodwill is generally allocated to the cash-generating unit in which the subsidiary is included, on which acquisition the goodwill has been recognized. Therefore, 61 % of the goodwill recognized in the course of the acquisition of Overture Networks Inc. has been allocated to Adtran Networks SE plus and 39 % has been allocated to Adtran Networks North America based on fair value of technology and customer relationship at the date of the acquisition. 40 % of customer relationships recognized in the purchase price allocation related to the acquisition of MRV group have been allocated to Adtran Networks North America. The technology from the acquisition of the MRV Communications group was allocated 100 % to Adtran Networks SE plus. Accordingly, the allocation of the relevant goodwill amounted to 77 % : 23 % in cash generating units Adtran Networks SE plus and Adtran Networks North America. Unchanged from prior years, the cash-generating units, to which the corporate assets are allocated, are Adtran Networks SE plus, Adtran Networks York, Adtran Networks North America and OSA Switzerland.

On December 31, 2023 and 2022, the value in use of the goodwill was calculated based on future cash flows (discounted-cash-flow-method). The calculation is most sensitive to the following assumptions:

- Gross margins
- Discount rates
- Raw material prices
- Market share expected

Cash flows include the projected cash flows for the four subsequent years as per the approved budget and four-year planning from 2024 - 2027 for gross margins, market share and raw material prices. For further periods, a perpetual income is estimated based on nil growth with inflation offset. The discount rate used for the calculation is calculated according to the Capital Asset Pricing Model (CAPM). The cost of equity is composed of a risk-free interest rate and a specific risk mark-up calculated as the difference of the average market rate of return and the risk-free interest rate multiplied with the specific risk related to the company (beta coefficient). The beta coefficient is calculated on a peer group basis. The calculation uses pre-tax discount rates depending on the different cash generating units.

Following pre-tax discount rates have been assumed:

(in %)	2023	2022
Adtran Networks SE plus	15.87	16.24
Adtran Networks York	18.52	17.20
Adtran Networks North America	18.71	18.45
OSA Switzerland	11.88	13.09

The growth rate for the extrapolation of expected cash flows for all cash-generating units is 1.00 %.

Sensitivity analysis

No disclosures on sensitivities are provided, as a further impairment is unlikely to occur as of the balance sheet date. An increase in the discount rates by 0.59 percentage points and above results in a need for impairment.

Capitalized development projects, intangible assets acquired in business combinations and other purchased and internally generated intangible assets

The table below summarizes the carrying amounts:

(in thousands of EUR)	Dec. 31, 2023	Dec. 31, 2022
Capitalized development projects	104,555	97,975
Intangible assets acquired in business combinations	5,241	8,519
Other intangible assets	22,006	19,604
	131,801	**126,099**

Capitalized development projects include expenses related to the development of technologies and products for connectivity solutions for cloud[4] and mobile services, network functions virtualization and synchronization.

In 2023, borrowing costs of EUR 1,154 thousand (2022: EUR 486 thousand) were capitalized related to development projects with an expected duration of more than 12 months. Borrowing costs were capitalized at the weighted average rate of the financial liabilities of 1.7 %.

Other intangibles assets mainly include licenses and software.

[4] Cloud in the context of IT describes a concept where applications no longer run on the user's in-house IT infrastructure (for example, a server) but are outsourced to a service provider whose IT infrastructure is not visible or known in detail – as if it was hidden in a cloud. A typical example is the use of software as a service, where the software is not stored on the user's machine, but on servers of the software service provider.

Intangible assets acquired in business combinations are as follows:

(in thousands of EUR)	Dec. 31, 2023	Dec. 31, 2022
Purchased software technology Overture	—	—
Purchased technology MRV	—	1,011
Purchased customer relationships Overture	29	759
Purchased customer relationship MRV	5,211	6,749
	5,241	**8,519**

Amortization of intangible assets with a finite useful life comprises:

(in thousands of EUR)	Dec. 31, 2023	Dec. 31, 2022
Capitalized development projects	39,241	41,916
Intangible assets acquired in business combinations	3,269	3,748
Other intangible assets	1,055	2,605
	43,565	**48,268**

Amortization of intangible assets acquired in business combinations are as follows:

(in thousands of EUR)	Dec. 31, 2023	Dec. 31, 2022
Purchased software technology Overture	—	58
Purchased technology MRV	1,218	1,582
Purchased customer relationships Overture	719	739
Purchased customer relationship MRV	1,332	1,369
	3,269	**3,748**

* Ensemble is a trademark used by Adtran Networks for the company's software solutions.

At initial recognition the useful lives of intangible assets acquired in business combinations were as follows:

Purchased software technology Overture	5 years, 7 months
Purchased technology MRV	7 years
Purchased customer relationships Overture	8 years
Purchased customer relationship MRV	9 years, 9 months

In 2023 and 2022, no impairment for capitalized development projects as well as purchased technologies was recognized.

In the consolidated income statement, amortization and impairment of capitalized development projects and amortization of purchased technology is included in cost of goods sold. Amortization of purchased customer relationship assets is included in selling and marketing expenses.

(14) Lease liabilities

Variable lease payments of EUR 3,308 thousand have not been included in the measurement of lease liabilities and were recognized in profit and loss (2022: EUR 2,499 thousand). In the cash flow statement, the cash outflows resulting from these items are included in the cash flow from operating activities.

The interest expense of EUR 879 thousand is included in the financial result (2022: EUR 780 thousand).

The maturity of lease liabilities is as follows:

(in thousands of EUR)	Dec. 31, 2023	Dec. 31, 2022
Up to 1 year	5,558	5,648
One to three years	10,141	8,316
More than three years	15,128	7,238
	30,827	**21,202**

(15) Liabilities to banks and financial liabilities to Adtran Holdings, Inc.

In February 2023 all bank loans and credit lines were repaid. In return, a revolving credit facility of USD 75,000 thousand was concluded with Adtran Holdings, Inc. on January 31, 2023. As at December 31, 2023, Adtran Networks had drawn EUR 52,733 thousand (USD 57,500 thousand) of this financing. The interest rate in 2023 was 3.76% p.a..The loan matures on January 31, 2028 and can be repaid at any time. As early repayment cannot be demanded by the lender, it is reported as a non-current financial liability.

On March 29, 2023, Adtran Networks concluded an agreement with NordLB for a credit line of up to EUR 15,000 thousand. This agreement was terminated by Adtran Networks on December 14, 2023 and repaid in full on December 29, 2023.

In December 2023, Adtran Networks concluded a new factoring agreement. The recognition of this agreement resulted in a current financial liability of EUR 13,286 thousand as at December 31, 2023.

The tables below show details on liabilities to banks and their maturity at 2022 year-end:

		Maturity		
(in thousands of EUR)	Dec. 31, 2022	≤ 12 months	13 to 36 months	> 36 months
Syndicated loan	22,930	22,930	—	—
Syndicated loan credit line	10,000	10,000	—	—
NordLB credit line	15,000	15,000	—	—
DZ Bank credit line	8,500	8,500	—	—
Total liabilities to banks	**56,430**	**56,430**	**—**	**—**

The fair value of the financial liability to Adtran Holdings, Inc. corresponds to the carrying amount.

Further information is included in note (32).

(16) Trade accounts payable and other current and non-current liabilities

The trade accounts payable are non-interest-bearing and generally due within 30 to 90 days. The increase in trade accounts payable mainly results from demand-oriented purchases of materials.

Other current liabilities are as follows:

(in thousands of EUR)	Dec. 31, 2023	Dec. 31, 2022
Non-financial liabilities		
Liabilities to employees for variable compensation and payroll	6,274	21,513
Liabilities to employees for vacation	1,995	2,618
Liabilities due to withheld wage income tax and social security contribution	4,612	3,938
Liabilities due to tax authorities	3,606	6,837
Obligations from subsidized research projects	18,719	7,134
Total current non-financial liabilities	**35,206**	**42,040**
Financial liabilities		
Negative fair value of derivatives	507	590
Other	1,340	2,016
Total current financial liabilities	**1,848**	**2,607**
	37,054	**44,647**

Other non-current liabilities include:

(in thousands of EUR)	Dec. 31, 2023	Dec. 31, 2022
Non-financial liabilities		
Obligations from subsidized research projects	21,534	4,719
Other	17	17
Total non-current non-financial liabilities	**21,551**	**4,736**
Financial liabilities		
Other	860	20
Total non-current financial liabilities	**860**	**20**
	22,411	**4,756**

On December 31, 2023, other current financial liabilities mainly include accrued software license contracts.

The classification of financial instruments according to IFRS 9 is included in note (32).

(17) Provisions for pensions and similar employee benefits

Post-employment benefit plans are classified as either defined contribution or defined benefit plans.

Plan assets related to defined contribution plans are managed separately from the assets of the relevant company by a trustee. For such plans, the company pays fixed contributions into a separate entity or a fund and does not assume any other obligations. Payment obligations to defined contribution plans are recognized in profit or loss when they occur. Payment to government managed pension plans with fixed contributions are considered as defined contribution plans. Adtran Networks group maintains defined contribution plans in different group companies. In 2023, total expenses related to defined contribution plans amount to EUR 10,949 thousand (prior year: EUR 10,241 thousand).

Under defined benefit plans the company is required to pay agreed benefits granted to present and past employees. Defined benefit plans may be funded or unfunded. The group maintains defined benefit plans in Switzerland, Italy, India and Israel.

The defined benefit plans in Switzerland are remuneration-dependent commitments for which a guaranteed minimum interest rate is set. Benefits paid in conjunction with these plans comprise old-age retirement pensions as well as invalidity and surviving dependents' benefits. The assets of the pension plans are managed by trustees. The administration is carried out in accordance with local legal requirements. In Switzerland, in addition to the regular case of pension payments at retirement age, the retirement assets can also be paid out in full or in part as a lump sum. Furthermore, in certain cases, for example in the event of the acquisition of residential property, there is the possibility of early withdrawal of the retirement assets. In the event of a change of job, the employee's retirement assets are transferred from the pension fund of the previous employer to the pension fund of the new employer.

The pension plans in Israel, Italy and India are defined benefit plans, which in the case of Italy and India are unfunded. The assets of the pension plan in Israel are managed by trustees in accordance with local legal requirements. In Italy, Israel and India, a single lump-sum payment is usually made upon retirement.

On December 31, 2023, Adtran Networks reports provisions for pensions amounting to EUR 6,734 thousand (December 31, 2022: EUR 5,550 thousand).

The carrying amount are as follows:

(in thousands of EUR)	Dec. 31, 2023	Dec. 31, 2022
Present value of defined benefit obligations	29,580	26,596
Fair value of plan assets	(22,846)	(21,046)
Provisions for pensions and similar employee benefits	**6,734**	**5,550**

The change in the net defined benefit liability for pension plans derives as follows:

(in thousands of EUR)	Defined benefit obligations	Fair value of plan assets	Total
Jan. 1, 2022	**29,146**	**(21,745)**	**7,401**
Expenses and income			
Current service cost	1,136	—	1,136
Past service cost	—	—	—
Interest expense (+)/income (-)	264	(176)	88
Remeasurements			
Gains (-)/losses (+) arising from changes in financial assumptions	(4,860)	—	(4,860)
Gains (-)/losses (+) arising from changes in demographic assumptions	—	—	—
Gains (-)/losses (+) arising from experience	293	—	293
Gains (-)/losses (+) on plan assets, excluding amounts included in interest income	—	2,320	2,320
Employee contributions	310	(310)	—
Transfers to funds	—	(744)	(744)
Assets distributed on settlements	—	(2)	(2)
Benefits paid through plan assets and payments made to plan assets, net	(157)	157	—
Disbursements of Adtran Networks	(119)	—	(119)
Exchange rate differences and other changes	583	(546)	37
Dec. 31, 2022	**26,596**	**(21,046)**	**5,550**
Expenses and income			
Current service cost	936	—	936
Past service cost	527	—	527
Interest expense (+)/income (-)	710	(542)	168
Remeasurements			
Gains (-)/losses (+) arising from changes in financial assumptions	664	—	664
Gains (-)/losses (+) arising from changes in demographic assumptions	(607)	—	(607)
Gains (-)/losses (+) arising from experience	109	—	109
Gains (-)/losses (+) on plan assets, excluding amounts included in interest income	—	465	465
Liability assumed through tranfer of employees	227	—	227
Employee contributions	360	(360)	—
Transfers to funds	—	(764)	(764)
Assets distributed on settlements	—	58	58
Benefits paid through plan assets and payments made to plan assets, net	(156)	156	—
Disbursements of Adtran Networks	(703)	—	(703)
Exchange rate differences and other changes	917	(813)	104
Dec. 31, 2023	**29,580**	**(22,846)**	**6,734**

The payments made to plan assets result in particular from vested benefits brought in by joining the company as well as from other payments and repayments of benefits drawn in advance to top up the pension fund.

The past service cost in 2023 mainly resulted from the legal adjustment of the retirement age for women in Switzerland.

The liability assumed through the transfer of employees relates to the plan in India.

On December 31, 2023, EUR 26,548 thousand of the defined benefit obligations relate to active employees and EUR 3,032 thousand relate to pensioners (prior year: EUR 23,784 thousand and EUR 2,812 thousand, respectively).

The average remaining period of service for employees and the weighted average duration of the obligations as of December 31, 2023 are as follows:

(in years)	Switzerland	Italy	India	Israel
Average remaining period of service	9.00	9.60	n/a	n/a
Weighted average duration	14.90	7.40	7.00	9.70

On December 31, 2022 the average remaining period of service and the weighted average duration are as follows:

(in years)	Switzerland	Italy	India	Israel
Average remaining period of service	9.20	13.70	n/a	n/a
Weighted average duration	14.40	8.50	7.00	9.70

In general, the monthly payment of pensions starts if an employee in Switzerland reaches the retirement age, while in Israel, Italy and India a lump sum payment of the relevant accrued amount applies with retirement or resignation of an employee.

Employer contributions in 2024 are expected to amount to EUR 894 thousand (2022 expected for 2023: EUR 782 thousand). The expected pension payments for 2024 amount to EUR 1,442 thousand. In 2022 pension payments of EUR 975 thousand had been expected for 2023.

In 2023, the projected units credit method is used to calculate the defined benefit obligations considering the following material assumptions for valuation parameters:

	Switzerland	Italy	India	Israel
Discount rate	1.50 %	3.07 %	7.20 %	5.70 %
Inflation rate	1.50 %	2.00 %	n/a	2.40 %
Salary level trend	2.00 %	2.25 %	7.00 %	2.40 %
Pension level trend	0.00 %	n/a	n/a	n/a

In 2022, the following valuation parameters have been assumed:

	Switzerland	Italy	India	Israel
Discount rate	1.96 %	3.64 %	7.20 %	4.80 %
Inflation rate	2.00 %	2.00 %	n/a	2.60 %
Salary level trend	2.00 %	2.25 %	7.00 %	2.10 %
Pension level trend	0.00 %	n/a	n/a	n/a

Discount rates have been determined considering the weighted average duration of the obligations. The evaluation for Switzerland, Italy and Israel is based on high-quality corporate bonds with AA-rating. For India, the discount rate is based on government bond rates.

Adtran Networks is exposed to risks arising from defined benefit plans. Changes in actuarial parameters, especially in discount rates, may have significant influence on the pension obligations.

The sensitivity analysis provided below shows the extent to which the defined benefit obligation would have been affected by changes in the relevant assumptions in 2023:

(in thousands of EUR)		Change in defined benefit obligation
Discount rate	Increase by 0.25 %	(857)
	Decrease by 0.25 %	903
Salary level trend	Increase by 0.25 %	115
	Decrease by 0.25 %	(116)
Pension level trend	Increase by 0.10 %	185
Life expectancy	Increase by 1 year	445
	Decrease by 1 year	(449)

The sensitivity analysis in prior year were as follows:

(in thousands of EUR)		Change in defined benefit obligation
Discount rate	Increase by 0.25 %	(719)
	Decrease by 0.25 %	754
Salary level trend	Increase by 0.25 %	105
	Decrease by 0.25 %	(110)
Pension level trend	Increase by 0.10 %	145
Life expectancy	Increase by 1 year	336
	Decrease by 1 year	(342)

Sensitivities for discount rate, salary level and pension trend have been considered in turn disregarding any potential dependencies between these assumptions. With exception of pension trend considerations separate actuarial computations have been performed for increase and decrease of the assumptions. Due to the structure of the pension plans, no sensitivity was determined for the case of falling pensions. This only applies to the pension plans in Switzerland, as all other arrangements assume lump-sum payments at the time of reaching retirement age.

Adtran Networks assumes inflation rate to have minor impact on the amount of defined benefit obligations.

On December 31, 2023, plan assets split to major asset categories as follows:

	Quoted market prices	Other than quoted market prices
Equity instruments	29.75 %	—
Bonds	32.25 %	—
Real estate	22.20 %	—
Alternative investments	8.68 %	—
Qualified insurance policies	—	1.40 %
Cash and cash equivalents	—	3.23 %
Other	—	2.49 %

On December 31, 2022, plan assets split to major asset categories as follows:

	Quoted market prices	Other than quoted market prices
Equity instruments	28.41 %	—
Bonds	32.10 %	—
Real estate	23.32 %	—
Alternative investments	8.67 %	—
Qualified insurance policies	—	1.42 %
Cash and cash equivalents	—	3.29 %
Other	—	2.79 %

Pension fund assets are monitored continuously and managed from a risk-and-yield perspective by the external trustees.

(18) Other provisions

The table below lists changes in the composition of the group's other provisions in the reporting period:

(in thousands of EUR)	Jan. 1, 2023	Usage	Release	Appropriation	Currency translation difference	Dec. 31, 2023
Current provisions						
Warranty provision	374	(1)	—	10	3	386
Personnel provisions	1,165	(1,174)	(113)	4,718	(13)	4,583
Consulting fees	3,028	(558)	(1,964)	410	(43)	873
Supplier obligations	11,770	(11,314)	(230)	10,882	(9)	11,099
Other current provisions	994	(871)	(11)	1,379	(2)	1,489
Total current provisions	**17,331**	**(13,917)**	**(2,318)**	**17,399**	**(65)**	**18,430**
Non-current provisions	—					
Warranty provision	1,769	(9)	—	31	11	1,802
Other non-current provisions	—	—	—	57	—	57
Total non-current provisions	**1,769**	**(9)**	**—**	**88**	**11**	**1,859**
Provisions total	**19,100**	**(13,926)**	**(2,318)**	**17,487**	**(54)**	**20,288**

The estimated expenses related to warranty claims reflect both past experience and current developments and are based on a percentage of sales revenues. The non-current warranty provisions mainly relate to a period of 12 to 24 months after the balance sheet date. Any differences between actual amounts and anticipated amounts are treated as changes in accounting estimates and affect earnings in the period in which the change occurs.

Current personnel provisions mainly include expenses for severance payments as well as employee's accident insurance and other expenses resulting from legal requirements.

From the 2023, the reversals of provisions from previous years will be reported in the respective operating costs. Other operating income only includes reversals of provisions from special items.

(19) Contract liabilities and refund liabilities

Contract and refund liabilities are as follows:

(in thousands of EUR)	Dec. 31, 2023	Dec. 31, 2022
Current contract liabilities		
Advance payments received	1,004	3,164
Current contract liabilities related to customer loyalty programs	908	583
Current deferred revenues related to service level agreements	23,387	17,441
Total current contract liabilities	**25,299**	**21,188**
Current refund liabilities	612	506
Total refund liabilities	**612**	**506**
Non-current contract liabilities		
Non-current deferred revenues related to service level agreements	13,031	8,622
Total non-current contract liabilities	**13,031**	**8,622**
	38,942	**30,316**

Current contract liabilities related to customer loyalty programs include mainly expected volume discounts and refunds to customers.

The revenues generated in the reporting period from contract liabilities existing at the beginning of the period amounted to EUR 20,759 thousand (previous year: EUR 20,398 thousand).

Management expects that 65 % of the outstanding or partially outstanding benefit obligations as of December 31, 2023, will be recognized as revenue in the 2024 financial year. The remaining 35 % is expected to be recognized as sales in the financial year 2025. The amount stated does not include variable compensation components which are limited.

(20) Stockholders' equity

Common stock and share capital

On December 31, 2023, Adtran Networks SE had issued 52,054,500 (prior year: 52,004,500) no par value bearer shares (hereinafter “common shares”), each representing a notional amount of share capital of EUR 1.00.

The common shares entitle the holder to vote at the annual general meeting and to receive dividends in case of a distribution. No restrictions are attached to the common shares.

Capital transactions

In connection with the exercise of stock options, 50,000 shares were issued to employees of the company and its affiliates out of conditional capital in 2023 (in 2022 in connection with the exercise of stock options 558,608 shares). The par value of EUR 50 thousand (prior year: EUR 559 thousand) was appropriated to share capital, whereas the premium resulting from the exercise of stock options of EUR 296 thousand (prior year: EUR 3,767 thousand) was recognized within capital reserve.

Other information on the share option programs is included in note (38).

Authorized capital

According to the company’s articles of association, the management board is authorized, subject to the consent of the supervisory board, to increase subscribed capital until May 21, 2024, only once or in successive tranches by a maximum of EUR 24,965,477 by issuing new common shares in return for cash or non-cash contributions (conditional capital 2019/I). Subject to the consent of the supervisory board, the management board is further authorized to decide whether to exclude stockholders’ subscription rights. Stockholders’ subscription rights can be excluded for capital increases for cash contributions as well as contributions in kind if during the term of this authorization and in exclusion of shareholder subscription rights, the shares issued against contributions in cash or in kind do not exceed 20 % of the share capital.

Conditional capital

The annual shareholder´s meeting on May 24, 2023 resolved no increase of conditional capital 2011/I.

Considering the above described capital transactions, the total conditional capital on December 31, 2023 amounts to EUR 3,491 thousand.

The changes in share capital, authorized and conditional capital are summarized below:

(in thousands of EUR)	Share capital	Authorized capital 2019/I	Conditional capital 2011/I
Jan. 1, 2023	**52,005**	**24,965**	**3,541**
Changes due to Annual Shareholders' Meeting resolutions	—	—	—
Stock options exercised	50	—	(50)
Dec. 31, 2023	**52,055**	**24,965**	**3,491**

Capital reserve

The capital reserve includes premium payments from the issuance of shares, as well as additional contributions to the company's equity associated with the exercise of stock options. Additionally, the capital reserve contains the correspondent accumulated compensation expenses related to equity-settled stock option rights issued amounting to EUR 28,488 thousand (prior year: EUR 26,963 thousand).

Accumulated deficit including net income (loss)

Accumulated deficit including net income (loss) includes the consolidated net income (loss) for the financial year as well as earnings generated in previous periods, insofar as these were not distributed or transferred or offset as part of profit and loss transfer agreements.

Accumulated other comprehensive income (loss)

Accumulated other comprehensive income (loss) is used to record exchange differences arising from the translation of the financial statements of foreign operations. In addition, the result from remeasurement of defined benefit obligations is included in this line item.

The development of accumulated other comprehensive income is as follows:

(in thousands of EUR)	Remeasurement of defined benefit plans	Exchange differences on translation of foreign operations
Jan. 1, 2022	**(2,006)**	**(2,190)**
Addition/release from remeasurement	2,253	—
Tax effect	(400)	—
Currency translation differences	—	2,870
Dec. 31, 2022	**(153)**	**680**
Addition/release from remeasurement	(1,064)	—
Tax effect	90	—
Currency translation differences	—	(1,408)
Dec. 31, 2023	**(1,127)**	**(728)**

In 2023 and 2022 no items were reclassified (recycled) from comprehensive income to profit or loss.

Changes in stockholders' equity are summarized in the consolidated statement of changes in stockholders' equity.

Voting rights

According to section 33 paragraph 1 and 2, section 38 paragraph 1 and section 40 of the German Securities Trading Law (Wertpapier-Handelsgesetz, WpHG) the company published the following information on the Adtran Networks homepage:

Date of change in investment	Name of investment owner	Threshold limit	0.0305
March 21, 2024	The Goldman Sachs Group, Inc., Wilmington, Delaware, USA	above 10 %	11.97 %
Feb. 07, 2024	UBS Group AG, Zürich, Switzerland	above 3%	2.84 %
Jan. 24, 2024	Morgan Stanley, Wilmington, Delaware, USA	below 3 %	2.97 %
Jan. 08, 2024	Raphael Kain	above 10 %	10.27 %
Nov. 28, 2023	Samson Rock Capital LLP, London, UK	above 10 %	10.02 %
Nov. 28, 2023	Samson Rock Event Driven Fund Limited, Grand Cayman, Cayman Islands	above 10 %	10.02 %
Oct, 26, 2023	John Adis	above 3%	3.19 %
Aug. 26, 2022	JPMorgan Chase & Co., Wilmington, Delaware, USA	below 3 %	2.99 %
Jul. 21, 2022	Janus Henderson Group Plc, St. Helier, Jersey, USA	below 3 %	1.61 %
Jul. 15, 2022	Dimensional Holdings Inc., Austin, Texas, USA	below 3 %	0.00 %
Jul. 15, 2022	DNB Asset Management AS, Oslo, Norway	below 3 %	0.00 %
Jul. 15, 2022	EGORA Ventures AG, Planegg, Germany	below 3 %	0.00 %
Jul. 15, 2022	Adtran Holdings, Inc., Wilmington, Delaware, USA	above 50 %	65.43 %
Jan. 26, 2022	Bank of America Corporation, Wilmington, Delaware, USA	above 3 %	3.66 %
Jan. 21, 2022	DWS Investment GmbH, Frankfurt, Germany	below 3 %	2.80 %
Jul. 19, 2021	Highclere International Investors Smaller Companies Fund, Westport, USA	below 3 %	2.80 %
Jun. 18, 2021	Teleios Global Opportunities Master Fund, Ltd. Grand Cayman, Cayman Islands	below 3 %	2.95 %
Jul. 20, 2020	DNB Asset Management S.A., Luxembourg, Luxembourg	below 3 %	2.99 %
Sep. 23, 2019	Duke University, Durham, North Carolina, USA	below 3 %	— %
Jan. 17, 2019	Internationale Kapitalanlagegesellschaft mit beschränkter Haftung, Düsseldorf, Germany	below 3 %	2.86 %
May 2, 2017	Finanzministerium im Auftrag des norwegischen Staates, Oslo, Norway	above 3 %	3.19 %
Feb. 20, 2017	Deutsche Asset Management Investment GmbH, Frankfurt, Germany	below 3 %	2.95 %

Notes to the consolidated income statement

(21) Revenues

In 2023 and 2022, revenues included EUR 96,938 thousand and EUR 94,230 thousand for services, respectively. The remaining revenues relate mainly to product sales.

In 2023, revenues related to customer loyalty programs amounting to EUR 252 thousand have been recognized (prior year: EUR 146 thousand).

In 2023, revenues amounting to EUR 545,549 thousand thousand (prior year: EUR 639,526 thousand) relate to performance obligations that were performed at a specific point in time, and revenues of EUR 69,122 thousand (prior year: EUR 72,587 thousand) relate to performance obligations that were delivered over a period of time.

A segmentation of revenues by geographic region is provided in the section on segment reporting under note (31).

(22) Selling and marketing, general and administration and research and development expenses

Selling and marketing, general and administration and research and development expenses mainly include personnel expenses relating to wages and salaries and social security costs.

In addition, general and administration expenses include expenses for external services provided for legal, accounting and tax purposes as well as expenses regarding rented office space and leased cars.

Research and development expenses additionally include external service expenses mainly for research and development services, calibration and certification and legal fees as well as depreciation expenses for equipment and cost of material used for research and development.

From 2023, the expenses for rented offices have been allocated to all functional areas via a cost allocation. The previous year's figures were adjusted accordingly. This resulted in the following shifts in operating expenses in 2022:

(in thousands of EUR)	2022
Cost of goods sold	(3,178)
Gross profit	**(3,178)**
Selling and marketing expenses	(1,979)
General and administration expenses	11,033
Research and development expenses	(5,876)

The decline in operating expenses results in particular from decreased personnel expenses. Additionally in 2022, high expenses for legal and consulting services in connection with the business combination with Adtran have been included.

(23) Other operating income and expenses

Other operating income and expenses are as follows:

(in thousands of EUR)	2023	2022
Other operating income		
Government grants received	4,683	2,312
Release of provisions	1,961	752
Income from the provision of services to Adtran Holdings Inc. and its subsidiaries	1,002	—
Income for the supply of development services	640	33
Supplier revenues	2,597	3,095
Refund of duty and logistic charges	—	2,449
Derecognition of liabilities	—	1,840
Other	368	765
Total other operating income	**11,251**	**11,246**
Other operating expenses		
Derecognition of trade accounts receivable	(102)	(9)
Other	(156)	(773)
Total other operating expenses	**(258)**	**(782)**
Other operating income and expenses, net	**10,993**	**10,464**

In 2023, the release of provisions mainly relates to provisions for legal disputes that were recognized as part of previous business combinations.

(24) Interest income and expenses

Interest income primarily includes interest from daily bank deposits and from other short-term deposits with maturities between one day and three months.

Interest expenses are primarily incurred on financial liabilities and on the sale of receivables. In addition, net interest expenses from valuation of defined benefit plans and interest expenses related to leases according to IFRS 16 are included. The increase in interest expenses is in particular due to the rise in interest rates as part of group financing. For further details, refer to notes (9), (14), (15), (17) and (32).

(25) Other financial gains and losses

Other financial gains and losses, net, comprise the following:

(in thousands of EUR)	2023	2022
Foreign currency exchange gains	16,606	31,021
Thereof: gains from forward rate agreements	*704*	*2,447*
Foreign currency exchange losses	(20,611)	(26,934)
Thereof: losses from forward rate agreements	*(1,539)*	*(1,113)*
Total other financial gains and losses, net	**(4,005)**	**4,087**

Further information on the foreign currency derivatives is contained in note (32).

(26) Income tax

Income taxes in Germany consist of corporate income tax, the solidarity surcharge and trade taxes. The tax calculation in foreign countries is based on the applicable local tax rates. They vary between 13.56 % and 34.00 % (prior year: between 13.56 % and 34.00 %).

The table below shows the components of the group's total income tax expenses:

(in thousands of EUR)	2023	2022
Current taxes		
Current income tax charge	(6,679)	(4,180)
Adjustments in respect of current income tax for prior years	47	1,776
Total current taxes	**(6,632)**	**(2,404)**
Deferred taxes		
Temporary differences and tax loss carry-forwards	(13,911)	459
Changes in tax rates	13	11
Total deferred taxes	**(13,898)**	**470**
Income tax benefit (expense), net	**(20,530)**	**(1,934)**

A reconciliation of income taxes based on the accounting profit (loss) and the expected domestic income tax rate for the parent company of 28.984 % (prior year: 28.915 %) to effective income tax benefit (expense), net, is presented below:

(in thousands of EUR)	2023	2022
Accounting income before tax	**6,016**	**20,066**
Expected statutory tax benefit (expense)	**(1,744)**	**(5,802)**
Tax rate adjustments	13	12
Tax for prior periods	47	1,776
Foreign tax rate differential	741	1,181
Non-tax-deductible stock option expenses	(452)	(509)
Differences from foreign branch offices	(358)	(127)
Non-taxable income and other non-tax-deductible expenses	(1,834)	(77)
Change in valuation allowance on deferred tax assets for temporary differences and for tax losses	(13,030)	3,676
Deferred taxes based on tax credits	3,145	1,099
Permanent differences	(386)	233
Utilization of tax loss carry forwards	1,158	3,645
Not capitalized deferred tax assets for temporary differences and tax losses	(7,867)	(7,042)
Utilization of tax credits, capital losses and other tax advantages	39	—
Other differences	(2)	1
Income tax benefit (expense), net	**(20,530)**	**(1,934)**
Effective tax rate	**(341.37) %**	**(9.64)%**

The tax income for prior periods in the amount of EUR 47 thousand decreased compared to prior year (prior year: tax income in the amount of EUR 1,776 thousand) and results mainly from a decrease in R&D Tax Credit claimed for Adtran Networks North America Inc. for the year 2023 in relation to 2022. A further not yet claimed R&D tax credit results in a deferred tax benefit amounting to EUR 3,146 thousand.

In 2023, effects amounting to EUR 13 thousand occurred due to a change in the income tax rate (prior year: EUR 12 thousand).

The effect with the regard to the change in valuation allowance on deferred tax assets for tax losses relates mainly Adtran Networks SE (EUR 14,400 thousand).

The deferred tax assets and deferred tax liabilities relate to the following:

	Dec. 31, 2023		Dec. 31, 2022	
(in thousands of EUR)	Deferred tax assets	Deferred tax liabilities	Deferred tax assets	Deferred tax liabilities
Current assets				
Cash and cash equivalents	—	—	—	—
Trade accounts receivable	344	—	378	—
Inventories	261	(2,639)	577	(2,863)
Other current assets	1	(292)	—	(321)
Total current assets	**606**	**(2,931)**	**955**	**(3,184)**
Non-current assets				
Right-of-use assets	—	(5,654)	—	(3,540)
Property, plant and equipment	222	(1,203)	168	(46)
Goodwill	—	(3,086)	—	(3,078)
Capitalized development projects	—	(30,841)	—	(29,011)
Intangible assets acquired in business combinations	2,524	(2,484)	2,497	(4,429)
Other intangible assets	—	(4,969)	—	(4,959)
Other non-current assets	4	(3)	3	(168)
Total non-current assets	**2,750**	**(48,240)**	**2,668**	**(45,231)**

(in thousands of EUR)	Dec. 31, 2023 Deferred tax assets	Dec. 31, 2023 Deferred tax liabilities	Dec. 31, 2022 Deferred tax assets	Dec. 31, 2022 Deferred tax liabilities
Current liabilities				
Lease Liabilities	1,052	—	1,015	—
Trade accounts payable	2	(215)	5	(428)
Provisions	3,373	—	3,834	—
Deferred revenues	773	(4)	790	—
Other current liabilities	709	—	1,906	—
Total current liabilities	**5,909**	**(219)**	**7,550**	**(428)**
Non-current liabilities				
Lease Liabilities	5,164	—	3,305	—
Other non-current liabilities	894	(21)	708	(63)
Total non-current liabilities	**6,058**	**(21)**	**4,013**	**(63)**
Tax loss carry-forwards and tax credits				
German tax loss carry-forwards	27,747	—	42,194	—
thereof: current	—	—	—	—
thereof: non-current	*27,747*	—	*42,194*	—
Foreign tax loss carry-forwards	3,019	—	3,357	—
thereof: current	*3,019*	—	*3,357*	—
thereof: non-current	—	—	—	—
Foreign tax credits	4,847	—	1,835	—
thereof: current	*4,847*	—	*1,835*	—
thereof: non-current	—	—	—	—
Total tax loss carry-forwards and tax credits	**35,613**	**—**	**47,386**	**—**
Total deferred tax assets and liabilities	**50,936**	**(51,411)**	**62,572**	**(48,906)**
thereof: current	*14,381*	*(3,150)*	*13,697*	*(3,612)*
thereof: non-current	*36,555*	*(48,261)*	*48,875*	*(45,294)*
Netting	(39,193)	39,193	(46,037)	46,037
Deferred tax net	**11,743**	**(12,218)**	**16,535**	**(2,869)**

Temporary differences are differences between the carrying amount of an asset or liability in the balance sheet according to IFRS and its tax base.

Deferred tax liabilities on temporary differences arising out of the initial recognition of goodwill are not accounted for. According to IAS 12.21B deferred tax liability in the amount of EUR 3,086 thousand (previous year: EUR 3,078 thousand) was though recognized on taxable temporary differences in connection with a goodwill which is deductible for tax purposes and which resulted from the a business acquisition (asset deal) performed earlier by Adtran Networks SE.

Deferred tax assets have been recognized for German and foreign tax loss carry-forwards since net deferred tax liabilities arising from temporary differences as well as a positive tax planning, which are relevant for the recognition of tax loss carry-forwards as reported, exist.

The German and foreign tax loss carry-forwards comprise as follows:

(in thousands of EUR)	Dec. 31, 2023	Dec. 31, 2022
Adtran Networks SE	181,876	154,206
Adtran Networks Inc. North America	65,204	72,244
OSA Switzerland	—	—
Adtran Networks Israel	318	1,757
ADVA NA Holdings	66	68
ADVA IT Solutions	—	—
	247,465	**228,275**

For Adtran Networks SE future taxable profits are calculated based on the business plan of the Group and considering a limited forecast period. Following this, deferred tax assets have been recognized in respect of tax losses in Adtran Networks SE amounting to EUR 95,403 thousand (prior year: EUR 145,923 thousand).

Adtran Networks North America reports further tax income over an aggregated four-year-period and considering the following restrictions there is a reasonable assurance that taxable profits will be recognized in the near future that can be offset against tax loss carry-forwards.

Pursuant to the U.S. Tax Act, federal tax loss carry-forwards in the U.S. expire after twenty years. Furthermore, the utilization of a portion of tax loss carry-forwards is subject to annual limitations. Consequently, deferred tax assets have not been recognized in respect of tax loss carry-forwards in Adtran Networks North America in the amount of EUR 53,330 thousand (prior year: EUR 59,944 thousand).

Furthermore, deferred tax assets for tax loss carry-forwards for state and local purposes expire in between five and twenty years. Deferred tax assets in respect of these tax loss carry-forwards have been recognized in the amount of EUR 115 thousand (prior year: EUR 119 thousand).

The total tax loss carry-forwards of the group, for which no deferred tax assets were recognized at the end of 2023, expire within the following periods:

(in thousands of EUR)	
1 year	5,798
2 years	5,129
3 years	4,186
4 years	3,351
5 years	14,655
after 5 years	20,213
Carried forward for unlimited period	86,857
Total tax loss carry-forwards	**140,189**

Whether or not deferred tax assets are realized depends on the generation of future taxable income during periods in which these temporary differences are deductible. The group has considered the scheduled reversal of deferred tax liabilities and projected future taxable income in making this assessment.

During 2022 a tax audit for Adtran Networks SE started covering fiscal years 2016-2020. In addition, there is a tax audit for Adtran Networks (UK) Ltd. covering the fiscal year 2019, which has not been finalized. No other tax audits covering corporate income tax take currently place at Adtran Networks. Potential tax risks which could trigger tax payments in the future tax audits are continuously monitored by management and assessed at a most likely value. As of December 31, 2023, no tax risks were assessed as likely and accounted for.

On December 31, 2023 and 2022, no deferred tax liabilities on retained earnings of group companies have been recognized. Adtran Networks committed that at present there will be no distribution of currently undistributed earnings from the company’s major subsidiaries. The amount of temporary differences for which no deferred tax liabilities have been recognized totals to EUR 14,495 thousand (prior year: EUR 12,851 thousand).

Deferred tax assets for pensions and similar employee benefits in the amount of EUR 189 thousand are recognized in accumulated other comprehensive loss (prior year: EUR 98 thousand).

The group falls within the scope of the OECD "Pillar Two" regulations. The Pillar Two legislation was adopted in Germany and has been in force in Germany since January 1, 2024. The Group currently applies the exemption for activation of deferred taxes in connection with Pillar Two income taxes, which was subject of an amendment to IAS 12 published in May 2023.

The group is currently in the process of assessing the material impact of Pillar Two once the legislation becomes effective. Due to the complexity of applying the legislation as well as the respective calculation, the quantitative impact of the legislation in effect cannot yet be reliably estimated.

(27) Employees and personnel expenses

In 2023 and 2022, respectively, the Adtran Networks group had an average of 2,031 and 1,975 permanent employees and an average of 38 and 29 apprentices on its payroll, respectively in the following departments:

	Dec. 31, 2023	Dec. 31, 2022
Purchasing and Operations	395	415
Sales and Marketing	358	360
General and Administration	181	181
Research and Development	1,097	1,019
Apprentices	38	29
	2,069	**2,004**

Furthermore, Adtran Networks employs 25 and 28 people on a temporary basis effective December 31, 2023 and 2022, respectively.

Personnel expenses for 2023 and 2022 totaled EUR 221,901 thousand and EUR 218,228 thousand, respectively:

(in thousands of EUR)	2023	2022
Wages and salaries	183,189	181,612
Social security costs	22,355	22,157
Expenses for post-employment benefits	11,075	10,726
Share-based compensation expenses	5,282	3,733
	221,901	**218,228**

Expenses for retirement benefits include expenses related to defined contribution plans as well as service costs for defined obligation plans.

Further details on expenses for post-employment benefits are included in note (17).

Details regarding share-based compensation expenses are shown in note (38).

(28) Restructuring expenses

In 2023, restructuring expenses amounting to EUR 12,296 thousand have been recognized (2022: EUR 1,569 thousand), mainly relating to severance agreements with employees.

Other disclosures

(29) Consolidated cash flow statement

The consolidated cash flow statement has been prepared in accordance with IAS 7.

Cash and cash equivalents include short-term cash and short-term financial assets whose remaining maturity does not exceed three months from the date of acquisition. Bank overdrafts are reported in financial liabilities.

Cash flows from investing and financing activities are determined directly, whereas the cash flow from operating activities is derived indirectly from the consolidated income before tax. When cash flow from operating activities is calculated, the changes in assets and liabilities are adjusted for the effects of currency translation. As a result, it is not possible to reconcile the figures to the differences in the published consolidated statement of financial position.

The movements of liabilities from financing activities are as follows:

(in thousands of EUR)	Lease liabilities	Liabilities to banks	Financial liabilities to Adtran Holdings, Inc.	Total liabilities from financing activities
Jan. 1, 2022	**25,014**	**47,807**	**—**	**72,821**
Borrowings/repayments	(6,003)	8,500	—	2,497
Non-cash changes	1,956	123	—	2,079
Foreign currency exchange effects	235	—	—	235
Dec. 31, 2022	**21,202**	**56,430**	**—**	**77,632**
Borrowings/repayments	(6,209)	(43,214)	52,717	3,294
Non-cash changes	15,996	70	—	16,066
Foreign currency exchange effects	(161)	—	56	(105)
Dec. 31, 2023	**30,828**	**13,286**	**52,773**	**96,887**

Actual interest payments for liabilities to banks amounting to EUR 763 thousand (prior year: EUR 890 thousand), interest payments for financial liabilities to Adtran Holdings, Inc. in the amount of EUR 1,998 thousand (previous year: nil) and interest related to lease liabilities of EUR 879 thousand (prior year: EUR 780 thousand) are included in cash flow from financing activities.

Non-cash changes include effective interest rate changes on liabilities to banks as well as non-cash effective increases or decreases in lease liabilities due to consideration of new lease contracts or disposal of lease contracts.

Cash and cash equivalents to which the group only has restricted access are explained in note (8).

(30) Earnings per share

In accordance with IAS 33, basic earnings per share are calculated by dividing consolidated net income by the weighted average number of shares outstanding.

There were no material dilution effects in the current fiscal year. Diluted earnings per share are calculated by adjusting the weighted average number of shares outstanding by the number of potential shares arising from granted and exercisable stock options on the balance sheet date.

No effects of dilution had to be considered in net income in 2023 and 2022.

The following table reflects the number of shares used in the computation of basic and diluted earnings per share:

	2023	2022
Weighted average number of shares (basic)	**52,015,913**	**51,744,182**
Effect of dilution from stock options	9,005	43,530
Weighted average number of shares (diluted)	**52,024,918**	**51,787,712**

There have been no other material transactions involving ordinary shares or potential shares between the balance sheet date and the date of authorization for issue of these financial statements.

(31) Segment reporting

In accordance with IFRS 8, operating segments are identified based on the way information is reported internally to the chief operating decision maker, i.e. the management board, and regularly reviewed to make decisions about resources to be assigned to the segment and assess its performance. The internal organizational and management structure and the structure of internal financial reporting activities are the key factors in determining what information is reported. For making decisions about resource allocation and performance assessment, management does not monitor the operating results separately on the level of business units. Therefore the reporting on individual business segment does not apply.

Within the Adtran Networks group, management decisions are based on pro forma EBIT. Pro forma financial information excludes non-cash charges related to share-based compensation plans and amortization and impairment of goodwill and acquisition-related intangible assets. Additionally, expenses related to M&A and restructuring measures are not included. Income from capitalization of development expenses is shown as a separate line item and not deducted from research and development expenses.

Reconciliation of key performance measures to the consolidated financial income on December 31, 2023 presents as follows:

(in thousands of EUR)	Pro forma financial information	Intangible assets from acquisitions	Goodwill	Compensation expenses	Expenses related to to M&A and restructuring measures	Disclosure of R&D expenses	Consolidated financial information
Revenues	613,671	—	—	—	—	—	613,671
Cost of goods sold	(392,393)	(1,218)	—	(574)	(924)	—	(395,108)
Gross profit	**221,278**	**(1,218)**	**—**	**(574)**	**(924)**	**—**	**218,562**
Gross margin	**36.1 %**						**35.6 %**
Selling and marketing expenses	(60,213)	(2,051)	—	(1,321)	(4,941)	—	(68,526)
General and administrative expenses	(34,068)	—	(4,553)	(729)	(2,735)	—	(42,085)
Research and development expenses	(144,068)	—	—	(2,658)	(4,736)	45,820	(105,642)
Income from capitalization of development expenses	45,820	—	—	—	—	(45,820)	—
Other operating income	11,251	—	—	—	—	—	11,251
Other operating expenses	(189)	—	—	—	(69)	—	(258)
Operating income	**39,810**	**(3,269)**	**(4,553)**	**(5,282)**	**(13,405)**	**—**	**13,302**
Operating margin	**6.5 %**						**2.2 %**
Segment assets	**587,681**	**5,241**	**64,899**	**—**	**—**	**—**	**657,821**

Reconciliation of key performance measures to the consolidated financial income on December 31, 2022 presents as follows:

(in thousands of EUR)	Pro forma financial information	Intangible assets from acquisitions	Goodwill	Compensation expenses	Expenses related to to M&A and restructuring measures	Disclosure of R&D expenses	Consolidated financial - information
Revenues	712,114	—	—	—	—	—	712,114
Cost of goods sold	(472,082)	(1,640)	—	(255)	(10)	—	(473,987)
Gross profit	**240,032**	**(1,640)**	**—**	**(255)**	**(10)**	**—**	**238,127**
Gross margin	**33.7 %**						**33.4 %**
Selling and marketing expenses	(70,997)	(2,109)	—	(988)	(137)	—	(74,231)
General and administrative expenses	(38,611)	—	(3,460)	(945)	(19,764)	—	(62,780)
Research and development expenses	(132,607)	—	—	(1,545)	(1,421)	42,105	(93,468)
Income from capitalization of development expenses	42,105	—	—	—	—	(42,105)	—
Other operating income	11,246	—	—	—	—	—	11,246
Other operating expenses	(782)	—	—	—	—	—	(782)
Operating income	**50,386**	**(3,749)**	**(3,460)**	**(3,733)**	**(21,332)**	**—**	**18,112**
Operating margin	**7.1 %**						**2.5 %**
Segment assets	**568,086**	**8,519**	**71,307**	**—**	**—**	**—**	**647,912**

Additional information by geographical regions:

(in thousands of EUR)	2023	2022
Revenues		
Germany	196,035	162,780
Rest of Europe, Middle East and Africa	152,462	240,899
Americas	210,588	233,796
Asia-Pacific	54,585	74,640
	613,670	**712,115**

(in thousands of EUR)	Dec. 31, 2023	Dec. 31, 2022
Non-current assets		
Germany	168,232	147,459
Rest of Europe, Middle East and Africa	21,452	21,515
Americas	72,001	79,717
Asia-Pacific	3,196	3,259
	264,881	**251,950**

Revenue information is based on the shipment location of the customers.

In 2023, revenues with two major customers exceeded 10 % of total revenues (2022: two major customers). In 2023, the share of revenues allocated to major customers was EUR 147,727 thousand (prior year: EUR 171,800 thousand); thereof revenue with the biggest customer was EUR 74,023 thousand (prior year: EUR 100,617 thousand) and with the second biggest customer was EUR 73,704 thousand (prior year: EUR 71,183 thousand).

Non-current assets including property, plant and equipment, intangible assets and finance lease equipment are attributed based on the location of the respective group company.

(32) Financial instruments

The following tables analyze carrying amounts and fair values according to measurement categories. Only assets and liabilities, which fall into the categories defined by IFRS 7, are presented, so that the total amounts disclosed do not correspond to the balance sheet totals of each year.

(in thousands of EUR, on Dec. 31, 2023)	Measurement category in accordance with IFRS 9	
Assets		
Cash and cash equivalents	AC	
Trade accounts receivable without underlying factoring agreement	AC	
Trade accounts receivable with underlying factoring agreement	FVTPL	
Receivables from Adtran Holdings, Inc. due to loss absorption	AC	
Other current financial assets	AC	
Other non-current financial assets	AC	
Derivatives	FVTPL	
Investments	FVTPL	
Total financial assets		
Liabilities		
Current lease liabilities	n/a	
Non-current lease liabilities	n/a	
Current liabilities to banks	FLAC	
Non-current liabilities to banks	FLAC	
Non-current financial liabilities to Adtran Holdings, Inc.	FLAC	
Trade accounts payable	FLAC	
Other current financial liabilities	FLAC	
Other non-current financial liabilities	FLAC	
Derivatives	FVTPL	
Total financial liabilities		

* Due to the short-term nature, it was assumed that the book value as of the reporting date approximates the fair value.

		Categories recognized according to IFRS 9			
	Carrying amount	Amortized cost	Fair value recognized in profit and loss	Fair value	Hierarchy of fair values
	30,554	30,554	—	n/a*	n/a*
	115,615	115,615	—	n/a*	n/a*
	—	—	—	—	Level 2
	23,934	23,934	—	n/a	n/a
	19,617	19,617	—	n/a	n/a*
	23,320	23,320	—	23,320	Level 2
	5	—	5	5	Level 2
	0	—	—	0	Level 3
	213,045	**213,040**	**5**	**23,325**	
	5,558	5,558	—	n/a	n/a
	25,270	25,270	—	n/a	n/a
	13,286	13,286	—	13,286	Level 2
	—	—	—	—	Level 2
	—	52,773	—	52,773	Level 2
	43,123	43,123	—	n/a	n/a*
	1,340	1,340	—	n/a	n/a*
	860	860	—	860	Level 2
	507	—	507	507	Level 2
	142,717	**142,210**	**507**	**67,426**	

(in thousands of EUR, on Dec. 31, 2022)	Measurement category in accordance with IFRS 9	
Assets		
Cash and cash equivalents	AC	
Trade accounts receivable without underlying factoring agreement	AC	
Trade accounts receivable with underlying factoring agreement	FVTPL	
Other current financial assets	AC	
Other non-current financial assets	AC	
Derivatives	FVTPL	
Investments	FVTPL	
Total financial assets		
Liabilities		
Current lease liabilities	n/a	
Non-current lease liabilities	n/a	
Current liabilities to banks	FLAC	
Non-current liabilities to banks	FLAC	
Trade accounts payable	FLAC	
Other current financial liabilities	FLAC	
Other non-current financial liabilities	FLAC	
Derivatives	FVTPL	
Total financial liabilities		

* Due to the short-term nature, it was assumed that the book value as of the reporting date approximates the fair value.

	Carrying amount	Amounts recognized according to IFRS 9		Fair value	Hierarchy of fair values
		Amortized cost	Fair value recognized in profit and loss		
	58,447	58,447	—	n/a	n/a*
	113,774	113,774	—	n/a	n/a*
	9,877	—	9,877	9,877	Level 2
	9,150	9,150	—	n/a	n/a*
	6,099	6,099	—	6,099	Level 2
	59	—	59	59	Level 2
	0	—	—	0	Level 3
	197,406	**187,470**	**9,936**	**16,035**	
	5,648	5,648	—	n/a	n/a
	15,554	15,554	—	n/a	n/a
	56,430	56,430	—	56,430	Level 2
	—	—	—	—	Level 2
	88,713	88,713	—	n/a	n/a*
	2,017	2,017	—	n/a	n/a*
	20	20	—	20	Level 2
	590	—	590	590	Level 2
	168,972	**168,382**	**590**	**57,040**	

The group uses the following hierarchy for determining the fair value of financial instruments:

Level 1: Quoted prices in active markets for identical assets or liabilities.

Level 2: Techniques for which all inputs that have a significant effect on the recorded fair value are observable, either directly or indirectly.

Level 3: Techniques, which use inputs that are not based on observable market data.

At the end of the reporting period it is analyzed whether transfers between the hierarchy levels need to be considered. In 2023 and 2022, there were no such transfers.

In the case of cash and cash equivalents, trade receivables measured at amortized cost, other current financial assets and liabilities as well as trade accounts payable, the carrying amounts represent reasonable approximations for the fair values.

Forward rate agreements are measured using the discounted cash flow method based on quoted forward rates and yield curves derived from quoted interest rates according to the maturities of the contract.

Moreover, Adtran Networks SE has an investment in equity instruments of Saguna Networks Ltd. with no quoted prices in active markets. Input factors for the valuation are share prices from past investment rounds and current purchase price offers from other investors in Saguna Networks Ltd. Since the end of 2019, the fair value of the investment is zero, as the company is in a persistent loss-making situation. At the end of 2023, the fair value was reviewed and there was no indication that a write-up was necessary.

The fair values of financial liabilities as well as other non-current financial assets and liabilities have been calculated based on future cash flows by using arm's length, risk-adjusted interest rates.

The fair value of the balance sheet items measured at Level 3 on December 31, 2023 totaled nil (December 31, 2022: in total nil).

The following table shows the net results per measurement category according to IFRS 9:

(in thousands of EUR)	Note	2023	2022
Financial assets measured at amortized cost	(12)	672	(1,038)
Financial liabilities measured at amortized cost	(15)	(2,857)	(1,129)
Financial assets and liabilities measured at fair value through profit or loss	(24)	(835)	1,334
Net result		**(3,020)**	**(833)**

In 2023 and 2022, the net result from financial assets measured at amortized cost included the impairment loss and interest income recognized in the current period on the relevant assets. The net result of financial instruments at fair value through profit or loss consist of changes in the fair value of derivative financial instruments, trade receivables subject to factoring agreements and equity investments. The net result from financial liabilities at amortized cost includes interest for bank liabilities (drawn and undrawn) and other financial liabilities as well as amortization according to effective interest method.

Total interest income and expenses from financial assets and liabilities are as follows:

(in thousands of EUR)	2023	2022
Financial assets measured at amortized cost		
Total interest income	**333**	**107**
Financial liabilities measured at amortized cost		
Total interest expense	**(2,857)**	**(1,129)**

As the necessary prerequisites have not been fulfilled, no financial assets and liabilities are offset in the balance sheet. Master netting agreements exist with the contractual partners of the derivatives, according to which a set-off can be made in the event of insolvency. As of the balance sheet date, there were only insignificant offsetting potentials from derivative financial instruments.

(33) Financial risk management

The following section describes the group's position with regard to risks arising from financial instruments and their potential future impact on the net assets, financial position and operational results. The classification into material and immaterial financial risks considered in the risk and opportunity report has been disregarded.

Adtran Networks' capital management is described in note (34).

The management board establishes principles for overall risk management and decides on the use of derivative financial instruments and the investment of excess liquidity. The compliance department is responsible for group-wide monitoring of observance of the processes and guidelines of the risk management system defined by the Adtran Networks management board.

Foreign currency risks

Risk exposure

Adtran Networks is exposed to foreign currency risks as investments, financing and operations are carried out in several currencies. This results in foreign currency risks from future transactions as well as from recognized assets and liabilities denominated in a currency other than the functional currency of the respective group company. As part of the reporting date analysis of balance sheet exposures and exchange rate sensitivities, the currency pairs EUR/USD, EUR/PLN, EUR/CNY and EUR/GBP were identified as relevant.The relevance of the different currencies can vary depending on the reporting date.

The foreign currency risk of Adtran Networks on the basis of the underlying operating activities at the end of 2023 in the major currencies is as follows:

(in thousands)	USD	PLN	CNY	GBP
Trade accounts receivable	15,090	—	—	483
Trade accounts payable	(16,537)	—	(1)	—

At the end of 2022, the foreign currency risk was as follows:

(in thousands)	USD	JPY	GBP	AUD
Trade accounts receivable	22,980	462,131	2,905	1,391
Trade accounts payable	27,797	—	82	—

The group's risk with regard to other currency fluctuations was insignificant at the reporting date.

Risk management

Adtran Networks' risk management framework considers operational business risks to the business that affect the income statement. Specific hedging transactions are only concluded if larger non-recurring foreign exchange risks are expected (e.g. due to a planned M&A transaction). Regarding intercompany payments, the treasury department is closely involved in order to optimize the cash flows with regard to currencies and separate hedging considerations. Foreign currency risks from recognized financial assets and liabilities are only considered by Adtran Networks' risk management in specific cases.

In 2022 and 2023, the group recorded significant external net cash inflows in GBP and significant external net cash outflows in USD. In order to mitigate these material risks from operating activities and as a means to offset cash flow fluctuations, Adtran Networks' Treasury Department has been hedging some of its net cash flows in USD versus GBP through the use of forward foreign exchange agreements in GBP already in 2022. These transactions became due in the current year and resulted in a net loss of EUR 333 thousand (2022: net gain of EUR 1,865 thousand).

To hedge exchange rate risks from future cash flows, the group entered into derivatives that will mature in the first quarter of 2024. The fair value of these foreign exchange agreements is recognized in other current assets or other current liabilities. The related fair values amounted to positive EUR 5 thousand and negative EUR 507 thousand, respectively (December 31, 2022: positive EUR 59 thousand and negative EUR 590 thousand). As of December 31, 2023, the nominal value of these derivatives amounted to EUR 19,549 thousand (December 31, 2022: EUR 19,489 thousand). The nominal value is the accounting value from which payments are derived.

Sensitivity analysis

The foreign exchange rate sensitivity of the most relevant currency pairs with respect to balance sheet risks on earnings after tax at the end of the reporting period is illustrated below. The analysis does not consider effects from the translation of the financial statements of the group's foreign subsidiaries into euro the company's reporting currency.

If, at the balance sheet date 2023, the relevant exchange rates would have appreciated or depreciated by 10 % relative to the base currency in the relevant currency relations (base currency/spot currency), the following impact on earnings after tax from the currency translation of reported primary financial instruments would have to be considered:

(in thousands of EUR)		Dec. 31, 2023
	+10 %	-10 %
EUR/USD	(20,260)	24,762
EUR/PLN	1,281	(1,566)
EUR/GBP	1,029	(1,257)
EUR/CNY	1,165	(1,424)

In the previous year, the following sensitivities were reported for the currency relations relevant in 2022:

(in thousands of EUR)		Dec. 31, 2022
	+10 %	-10 %
EUR/USD	(385)	471
EUR/AUD	73	(89)
EUR/GBP	262	(320)
EUR/JPY	270	(330)

In addition, the currency pair USD/GBP is relevant for risk management considerations. The currency pairs USD/GBP and USD/EUR are hedged by using forward contracts. If, at year-end 2023, the spot currency GBP had appreciated or depreciated by 10 % against the base currency USD, the following effects would have been recognized in profit or loss:

(in thousands of EUR)		Dec. 31, 2023
	GBP +10 %	GBP -10 %
USD/GBP	2,042	(964)
	EUR +10 %	EUR -10 %
USD/EUR	616	(298)

The following sensitivities have been reported in 2022:

(in thousands of EUR)		Dec. 31, 2022
	GBP +10 %	GBP -10 %
USD/GBP	1,970	(978)
	EUR +10 %	EUR -10 %
USD/EUR	686	(230)

Interest rate risk

Risk exposure

The interest rate risk is the risk that fair values or future interest payments on existing and future interest-bearing financial instruments will fluctuate due to changes in market interest rates. Adtran Networks decreased its cash position from EUR 58,447 thousand in 2022 to EUR 30,554 thousand in 2023.

At year-end 2023, Adtran Networks SE had no outstanding loans and open credit lines with banks. On January 31, 2023 Adtran Networks entered into a revolving credit agreement with Adtran Holdings, Inc. with a total outstanding balance of USD 57,500 thousand as of December 31, 2023. The interest rate is fixed at 3.76% and thus not subject to interest rate movements. Further information on existing financial liabilities can be found in note (15).

Risk management

The treasury department regularly analyzes the existing interest rate risk and, in the event of a material risk, makes proposals for the use of appropriate hedging instruments. As part of risk management to limit interest rate risks, derivative financial instruments such as interest rate caps and interest rate swaps can be used. In order to fight inflation in the euro area, the central bank has raised the key interest rate to 4.5 % in the meantime. As of December 31, 2023, Adtran Networks SE had paid down its outstanding loan which had a floating interest rate. The loan with Adtran Holdings, Inc. has a fixed interest rate. Hence, no interest rate risk was incurred.

Sensitivity analysis

As of December 31, 2023, Adtran Networks SE had no outstanding loans and open credit lines which had floating interest rates. Therefore, no sensitivity analysis was performed.

Default risk

Risk exposure

The default risk arising from financial assets involves the risk of the default of a contractual partner and thus includes at maximum the amount of the related recognized carrying amounts. At Adtran Networks default risks arise from cash at banks, contract assets and contractual cash flows from debt instruments that are measured at amortized cost or at fair value through profit or loss, including outstanding trade receivables.

Risk management

All default risks are managed at group level. The default risk is mitigated by various measures, depending on the class of financial assets. In addition, the credit risk from non-derivative financial assets is considered by means of risk provisioning and bad debt allowances.

Adtran Networks enters into transactions with creditworthy banks and financial institutions. To assess the creditworthiness of banks, financial institutions and other financial assets, Adtran Networks uses current credit ratings from rating agencies (S&P, Moody’s or Fitch) as well as current default rates (credit default swaps). Based on the capital market ratings, Adtran Networks divided the banks and other financial assets into three internal rating classes, determining their exposure at default and calculating the expected loss at default as of December 31, 2023 and 2022. Rating class 1 means investment grade assets, rating class means non-investment grade assets and rating class 3 includes assets in default. Due to immateriality, no risk provisions were recognized at the balance sheet date.

The gross carrying amounts (risk positions) by rating class on December 31, 2023 are as follows:

(in thousands of EUR)	Rating class 1	Rating class 2	Rating class 3	Total
Cash and cash equivalents	30,554	—	—	**30,554**
Receivables from Adtran Holdings, Inc. due to loss absorption	23,934	—	—	**23,934**
Other current financial assets	19,617	—	—	**19,617**
Other non-current financial assets	23,320	—	—	**23,320**

The gross carrying amounts (risk positions) by rating class on December 31, 2022 were as follows:

(in thousands of EUR)	Rating class 1	Rating class 2	Rating class 3	Total
Cash and cash equivalents	58,447	—	—	**58,447**
Other current financial assets	9,209	—	—	**9,209**
Other non-current financial assets	6,099	—	—	**6,099**

Adtran Networks has distributed its investments to more than 10 international credit institutions. As of December 31, 2023, one bank was responsible for approximately 82% of all investments (as of December 31, 2022: for approximately 84 %). This results in a risk exposure of EUR 30,210 thousand. (2022: EUR 58,448 thousand).

When concluding contracts with clients, the creditworthiness and credit quality of the client is assessed on the basis of independent ratings, audited financial statements, or historical experience. Depending on the risk assessment, deliveries are made solely only under reasonable payment terms, which may include down payments or advance payments.

Adtran Networks applies the general expected credit loss model for significant financial assets. To measure the expected credit losses on trade receivables carried at amortized cost and contract assets the simplified approach under IFRS 9 is used. Trade receivables are summarized on the basis of common credit risk characteristics and overdue days.

As of December 31, 2023, and 2022, the expected loss ratios are based on historical payment profiles of receivables and the corresponding historical defaults. There are adjusted to reflect up-to-date and forward-looking information on macroeconomic factors (such as geopolitical events, currency fluctuations, inflation, trade conflicts, state subsidies) that may affect clients' solvency. Contract assets relate to work that has not yet been invoiced, and accordingly have the same risk characteristics as trade receivables of the underlying contracts.

In addition, Adtran Networks applies a specified valuation if certain criteria are met.

Regarding major other financial assets Adtran Networks reviews the risk on a case-by-case basis considering the counterparty-specific credit default swaps or assumptions regarding the expected creditworthiness of the contractual partners.

The following table shows the overdue structure of gross amounts of trade accounts receivable and contract assets by as of December 31, 2023:

(in thousands of EUR)	Not yet due	Overdue up to 90 days	90 – 180 days overdue	180 days to 1 year overdue	credit impaired	Total
Trade accounts receivable (simplified approach)	94,418	16,382	2,469	1,659	4,525	**119,453**
Contract assets	340	—	—	—	—	**340**

As of December 31, 2022, the overdue structure of gross amounts of trade receivables and contract assets were as follows:

(in thousands of EUR)	Not yet due	Overdue up to 90 days	90 – 180 day overdue	180 days to 1 year overdue	credit impaired	Total
Trade accounts receivable (simplified approach)	104,455	16,744	61	2,691	3,596	**127,547**
Contract assets	248	—	—	—	—	**248**

Due to immateriality, no valuation allowances were recognized relating to contract assets as of December 31, 2023, and 2022. The reconciliation of risk provisions for trade receivables is shown in note (9).

For other financial assets carried at amortized cost with a total carrying amount of EUR 42,937 thousand (prior year: EUR 15,249 thousand), the group analyzes the risk on a case-by-case basis. As of December 31, 2023, and 2022, there were no significant default risks. Therefore, no valuation allowances were recognized.

Liquidity risk

Risk exposure

In general, the inability to meet its financial obligations, such as servicing its debts, composes the liquidity risk of Adtran Networks.

Risk management

Management uses rolling forecasts to monitor the group's liquidity reserves, consisting of cash and cash equivalents based on expected cash flows and unused credit lines. To manage liquidity, Adtran Networks considers compliance with internally defined operating liquidity at all times.

The group's liquidity management policies include the forecast of cash flows in the major currencies and the assessment of required cash in these currencies, the monitoring of balance sheet liquidity ratios and the management of debt financing plans. In general, Adtran Networks pursues a conservative and risk-avoiding strategy.

Financing agreements

On January 31, 2023 Adtran Networks entered into a revolving credit agreement with Adtran Holdings, Inc. with a total outstanding balance of USD 57,500 thousand as of December 31, 2023. See also note (15) on liabilities to banks.

Maturities of financial liabilities

The table below analyzes the group's undiscounted cash outflows for non-derivative financial liabilities according to their maturity based on the remaining time at the balance sheet date to the contractual maturity date:

(in thousands of EUR, on Dec. 31, 2023)	Note	Carrying value	Future cash flows					
			≤ 12 months		13 – 36 months		> 36 months	
			Redemption	Interest	Redemption	Interest	Redemption	Interest
Lease liabilities	(14)	30,828	5,558	1,167	10,141	2,129	15,129	3,175
Liabilities to banks	(15)	13,286	13,286	—	—	—	—	—
Financial liabilities to Adtran Holdings, Inc. *)	(15)	52,773	—	2,012	—	4,258	52,773	2,447
Trade accounts payable	(16)	43,123	43,123	—	—	—	—	—
Other financial liabilities	(16)	3,059	2,199	—	589	—	271	—
		143,069	**64,166**	**3,179**	**10,730**	**6,387**	**68,173**	**5,622**

*) The future interest on the financial liabilities to Adtran Holdings, Inc. was calculated on the assumption that the current balance will not be repaid until the end of the term of the contract and that no further borrowings or repayments will be made until then.

(in thousands of EUR, on Dec. 31, 2022)	Note	Carrying value	Future cash flows					
			≤ 12 months		13 – 36 months		> 36 months	
			Redemption	Interest	Redemption	Interest	Redemption	Interest
Lease liabilities	(14)	21,202	5,648	486	8,316	716	7,238	624
Liabilities to banks	(15)	56,430	56,430	502	—	—	—	—
Trade accounts payable	(16)	88,713	88,713	—	—	—	—	—
Other financial liabilities	(16)	2,037	2,017	—	20	—	—	—
		168,382	**152,808**	**988**	**8,336**	**716**	**7,238**	**624**

(34) Capital management

Risk management

Adtran Networks' capital management aims to ensure the continued existence of the company and optimization of its capital structure to reduce its cost of capital.

The group defines capital as the sum of equity and financial liabilities. On December 31, 2023, financial debt amounted to EUR 96,887 thousand (prior year: EUR 77,632 thousand). Equity on December 31, 2023, amounted to EUR 377,990 thousand or 57.5 % of the balance sheet total (previous year: EUR 369,080 thousand or 57.0 % of the balance sheet total). Adtran Networks aims for an equity ratio of at least 30 %. The equity ratio was met in the past financial year.

Financial covenants

As of December 31, 2023, Adtran Networks did not had any loan agreement with financial covenants in place.

Within the scope of capital management, Adtran Networks seeks to minimize interest expenses, provided that the availability of funds is not jeopardized. Excess funds are usually used to pay off debt. For USD bank accounts, a so-called cash pooling is implemented. Under this agreement, the funds will be transferred daily to a collective account. The interest is calculated on the basis of the combined balances.

(35) Other financial obligations and financial commitments

On December 31, 2023, the group had purchase commitments totaling EUR 46,341 thousand (on December 31, 2022: EUR 166,350 thousand) in respect to suppliers. In addition, the group had license fee obligations in the amount of EUR 7.843 thousand as of December 31, 2023 (prior year-end: EUR 7,529 thousand).

Group entities have issued guarantees in favor of customers. On December 31, 2023, performance bonds with a maximum guaranteed amount of EUR 231 thousand were issued (on December 31, 2022: EUR 317 thousand). Based on experience from prior periods, Adtran Networks does not expect claims from these guarantees at year-end 2023.

With respect to various financing agreements there are certain guarantee obligations from Adtran Networks North America Inc. and Adtran Networks Ltd. to Adtran Networks SE.

(36) Contigent liabilities

In the normal course of business, claims may be asserted, or lawsuits filed against the company and its subsidiaries from time to time. On December 31, 2023, Adtran Networks does not expect potential titles or litigations in detail or in total that will have a material impact on its financial position or operating performance.

(37) Audit fees and other services from auditors

Since June 9, 2010, PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft (PwC), Munich, Member of the German Wirtschaftsprüfungskammer in Berlin, is the auditor of the company and the group. After internal rotation in 2021, Jürgen Schumann is the responsible certified accountant for the company.

In 2023 and 2022, the following fees charged by the legal auditor were recognized as expenses:

(in thousands of EUR)	2023	2022
Year-end audit	1,483	745
Other assurance services	53	217
	1,536	**962**

The other assurance services for the financial year include costs for the assurance of the combined separate non-financial report. In the previous year, in addition to the costs for the assurance of the combined separate non-financial report, this item also included costs in connection with assurance services as part of a business combination.

(38) Share-based payment instruments

To date, the company has issued stock options for employees (Plan XIV) and for management board (Plan XIVa and Plan XVIa).

All contracts stipulate a general four-year vesting period and a total contractual life of seven years for the respective rights issue. The rights may only be exercised if the volume weighted average of the company share closing prices on the ten stock exchange trading days before the first day of each exercise period in which the option is exercised is at least 120 % of the purchase price. In addition, options issued to the management board from Plan XIVa and from the new Plan XVIa introduced in 2020 include a profit limitation.

All option rights are non-transferable. They may only be exercised as long as the entitled person is employed on a permanent contract by the company or by a company in which Adtran Networks SE has direct or indirect interest. Option rights issued to apprentices may only be exercised if the apprentices are hired by the company or by an affiliated company on a permanent contract. All option rights expire upon termination of the employment contract. In the event that the person entitled dies, becomes unable to work or retires, special provisions come into force.

The group of people to whom option rights can be issued is defined separately for each stock option program. According to the resolution on 19. Mai 2021, 35.0 % of option rights - in total 1,435,164 options rights could be issued to members of the management board, 5.0 % - in total 205,023 options rights - to the management of affiliated companies, 22.5 % - in total 922,606 options rights - to company employees, and 37.5 % - in total 1,537,676 options rights - to employees of affiliated companies. The management board specifies the exact group of people entitled to exercise rights and the scope of each offer. Options rights awarded to the management board are approved by supervisory board.

Subject to the conditions under which option rights are issued, each option right entitles the individual to purchase one common share in the company. The conditions of issue specify the term, the exercise price (strike price), any qualifying periods and the defined exercise periods.

Exercise periods are regularly linked to key business events in the company’s calendar and each have a defined term. Certain other business events can lead to blocking periods, during which option rights cannot be exercised. Insofar as regular exercise periods overlap with such blocking periods, the exercise deadline shall be extended by the corresponding number of exercise days immediately after the end of such a blocking period. Option rights may be exercised only on days on which commercial banks are open in Frankfurt am Main, Germany.

The Plan XVIa for the management board introduced in 2020 considers an automated exercise process. Furthermore, the new Plan XVIa includes an automatic sale of the shares received via the stock exchange (“exersale”) immediately after the automated exercise process. Due to the automatic sale under Plan XVIa, it is classified as a cash-settled share-based payment plan. The automated exercise and the immediate sale take place after the expiration of the general vesting period of 4 years in eight regularly equal tranches, distributed over eight consecutive exercise windows on days determined or determinable in advance. The specific waiting period depends on the respective tranche. In the event that stock options cannot be exercised during the exercise window, the exersales are postponed to the respective subsequent exercise window. If they cannot be exercised within the term of the agreement, the options forfeit at the end of the last available exercise window. The purpose of the automated exercise and sale process is to simplify the disposal of exercised options and reduce administrative expenses due to insider trading rules.

With the introduction of the Plan XVIa in 2020, the supervisory board also decided to amend Plan XIVa for options issued prior to 2020 and include the automated exercise process. Independent from the plan amendment of the equity-settled share-based payment plan, the management board gave a revocable permission to an immediate sale of their exercised options on a voluntary basis. The amendment became effective on July 1, 2020, for all as of December 31, 2022 outstanding options and resulted in modification of the actual vesting period for stock options already issued before 2020. The modification resulted in a revaluation of these expenses. If the newly determined fair values per tranche exceed the fair value at the modification date, the additional fair value is accrued over the remaining vesting period (see IFRS 2.27).Starting from 2021 the option agreements for issuances from Plan XIVa do not include an automated exercise process.

The fair value of stock options was valued using a Monte Carlo simulation. For the calculation of the fair value of options, Adtran Networks assumed that no dividends will be paid to stockholders.

No option rights were issued by Adtran Networks SE in 2023.

In 2022, in relation to and prior to the final closing of the business combination agreement with Adtran Holdings, Inc. (“Adtran”), Adtran communicated an offer to all Adtran Networks employees to voluntarily convert the held options from all existing Adtran Networks stock options plans into share-based compensation instruments of Adtran 2020 Employee Stock Incentive Plan (“ESP 15”). The management board committed to convert all outstanding options. The employees could choose for each grant date, if all outstanding options from these grant date will be converted or not. The Adtran Holdings Options received in the conversion shall be subject to the terms of the Adtran plan with the following exceptions:

(a) In case of a consent, the outstanding Adtran Networks options (whether vested or unvested) converted into the right to acquire such number of shares in Adtran Holdings that is equal to the number of Adtran Networks Options multiplied by 0.8244, rounded down to the nearest whole share (each right to acquire one (1) share in Adtran is one (1) "Adtran Option"). The original exercise price of Adtran Networks was multiplied by 0.8244 and converted with the exchange rate either at the time of the consent letter or on the date of the close of the business combination agreement, depending on which is more favorable to the options holder.

(b) Vesting periods of Adtran options shall continue to be calculated from the date of grant of the converted Adtran Networks options.

(c)The expiration dates of the Adtran Networks options shall continue to be determined by the terms of the Adtran Networks option agreements.

Each exercise may not be made for less than 100 shares or, if less, the total remaining shares subject to the stock option. No special exercise periods exist at Adtran.

In 2023, Adtran granted stock options (SOP), Restricted stock units (RSUs) and Performance stock units (PSUs) to Adtran Networks employees and members of the Adtran Network management board.

RSUs are awards of a unit representing one share of common stock of Adtran that upon satisfaction of certain conditions, restrictions and contingencies as determined, including the satisfaction of specified performance measures result in the issuance of one share of common stock of Adtran. The lifetime of these instruments is four years with 25% of RSUs vesting each year. RSUs are valued at share price at grant date. RSU shall generally be settled in shares of common stock of Adtran immediately following the date they vest.

PSUs are awards of a unit representing one share of common stock of Adtran, upon satisfaction of certain conditions, restrictions and contingencies as determined, including the satisfaction of specified performance measures. The number of PSU that are earned will be based on the total shareholder return (TSR) of Adtran during the performance period relative to all companies in the Nasdaq telecommunication index. The participant is eligible to earn between 0% and 150% of the target number of PSU based on the companies relative TSR performance during the performance period. For every earned PSU one share of Adtran common stock shall be issued to the participant. The performance period is three years beginning on the date of the grant. The fair value of the PSUs is measured using Monte Carlo simulation.

The following computation parameters apply for RSUs, PSUs and option rights issued in 2023 by Adtran:

	Employees			Management board			
	RSUs	PSUs	SOP	RSUs	Annual PSUs	3-year plan PSUs	Integration bonus PSUs
Weighted average share price (in USD)	12.49	10.04	2.99	19.20	16.42	11.70	13.22
Weighted average strike price (in USD)	n/a	n/a	5.23	n/a	n/a	n/a	n/a
Weighted expected volatility (in % per year)	n/a	49.36	51.78	n/a	51.59	n/a	n/a
Term (in years)	4.00	3.00	10.00	4.00	3.00	3.00	2.00
Weighted risk-free interest rate (in % per year)	n/a	4.28	4.13	n/a	3.83	n/a	n/a

The volatility is specified as fluctuation of the share price compared to the average share price of the period. In each case, expected volatility is calculated based on historic share prices (historic volatility). The risk-free interest rate is based on information on risk-free investments with corresponding terms.

The tables below present changes in the number of option rights outstanding.

Stock option program 2011 (Plan XIV)

	Number of options	Weighted average strike price (in EUR)
Options outstanding on Jan. 1, 2022	**2,083,600**	**7.93**
Granted options	15,000	15.68
Exercised options	(479,800)	7.75
Forfeited options	(55,100)	8.58
Expired options	(21,000)	6.10
Converted options (Adtran)	(1,461,700)	8.38
Options outstanding on Dec. 31, 2022	**81,000**	**8.00**
Granted options	—	
Exercised options	(50,000)	6.92
Forfeited options	(12,500)	9.47
Expired options	(1,000)	8.70
Options outstanding on Dec. 31, 2023	**17,500**	**10.00**
Of which exercisable	—	—

The weighted average remaining contractual life for option rights outstanding on December 31, 2023, is 4.48 years (December 31, 2022: 4.0 years). The strike price for these options amounts to EUR 10.00 (2022: between EUR 4.98 and EUR 10.00).

Stock options exercised in 2023 had an average share price of EUR 19.78 on the exercise date.

The average fair value of option rights granted in 2022 is EUR 5.84).

Stock option program 2011 for the management board (Plan XIVa)

	Number of options	Weighted average strike price (in EUR)
Options outstanding on Jan. 1, 2022	**704,767**	**7.67**
Granted options	361,900	15.68
Exercised options	(78,808)	7.69
Forfeited options	—	—
Expired options	—	—
Converted options (Adtran)	(987,859)	10.61
Options outstanding on Dec. 31, 2022	**—**	**—**

Stock options exercised in 2022 had an average share price of EUR 15.69 on the exercise date.

The average fair value of option rights granted in 2022 was EUR 3.99.

Cash-settled stock option program 2020 for the management board (Plan XVIa)

	Number of options	Weighted average strike price (in EUR)
Options outstanding on Jan. 1, 2022	**100,000**	**5.76**
Granted options	—	—
Exercised options	—	—
Forfeited options	—	—
Expired options	—	—
Converted options (Adtran)	(100,000)	5.76
Options outstanding on Dec. 31, 2022	**—**	**—**

Stock option program (Plan ESP 15)

	Number of options	Weighted average strike price (in USD)
Options outstanding on Dec. 31, 2021	**—**	**—**
Options received from the exchange	1,204,774	10.20
Granted options	—	—
Exercised options	(52,988)	9.95
Forfeited options	(23,078)	11.06
Expired options	(4,945)	12.36
Options outstanding on Dec. 31, 2022	**1,123,763**	**10.18**
Granted options	624,410	5.31
Exercised options	(8,427)	8.72
Forfeited options	(81,113)	11.13
Expired options	(28,579)	9.71
Options outstanding on Dec. 31, 2023	**1,630,054**	**8.13**
Of which exercisable	695,260	8.04

The weighted average remaining contractual life for option rights outstanding on December 31, 2023, is 5.18 years (in 2022: 4.29 years). The strike price for these options is between USD 5.23 and USD 19.08 (in 2022: between USD 6.06 and USD 19.08).

Stock options exercised in 2023 had an average share price of USD 14.65 on the exercise date (in 2022: USD 21.12).

Stock option program for the management board (Plan ESP 15 management board)

	Number of options	Weighted average strike price (in USD)
Options outstanding on Dec. 31, 2021	**—**	**—**
Options received from the exchange	896,829	12.36
Granted options	—	—
Exercised options	(62,691)	9.36
Forfeited options	—	—
Expired options	—	—
Options outstanding on Dec. 31, 2022	**834,138**	**12.59**
Addition Thomas R. Stanton*	263,780	19.00
Exercised options	(15,000)	6.06
Forfeited options**	(232,007)	12.71
Expired options	(78,817)	23.07
Options outstanding on Dec. 31, 2023	**772,094**	**13.80**
Of which exercisable	351,848	12.23

* The addition of options for Thomas R. Stanton relates to instruments that were already issued from this plan in previous years.
** The forfeited options relate to a former member of the management board who left the company in 2022.

The weighted average remaining contractual life for option rights outstanding on December 31, 2023, is 3.72 years (in 2022: USD 4.82). The strike price for these options is between USD 7.01 and USD 19.08 (in 2022: between USD 6.06 and USD 19.08).

Stock options exercised in 2023 had an average share price of USD 6.92 on the exercise date (in 2022: USD 24.37).

RSUs for the employees

	Number of RSUs
RSUs outstanding on Dec. 31, 2022	**—**
Granted RSUs	162,368
Exercised RSUs	—
Forfeited RSUs	(8,940)
Expired RSUs	—
RSUs outstanding on Dec. 31, 2023	**153,428**
Of which exercisable	—
The weighted average remaining contractual life (in years) on Dec. 31, 2023	3.11
Average fair value of RSUs granted in the current year (in USD)	17.54

PSUs for the employees

	Number of PSUs
PSUs outstanding on Dec. 31, 2022	**—**
Granted PSUs	227,334
Exercised PSUs	—
Forfeited PSUs	(18,800)
Expired PSUs	—
PSUs outstanding on Dec. 31, 2023	**208,534**
Of which exercisable	—
The weighted average remaining contractual life (in years) on Dec. 31, 2023	1.99
Average fair value of PSUs granted in the current year (in USD)	16.28

RSUs for the management board

	Number of RSUs
RSUs outstanding on Dec. 31, 2022	**349,282**
Granted RSUs	103,703
Exercised RSUs	(87,049)
Forfeited RSUs	—
Expired RSUs	—
RSUs outstanding on Dec. 31, 2023	**365,936**
Of which exercisable	—
The weighted average remaining contractual life (in years) on Dec. 31, 2023	1.92
Average fair value of RSUs granted in the current year (in USD)	16.83
Weighted average share price on the date of exercise (in USD)	13.84

PSUs for the management board

	Number of annual PSUs	Number of 3-year plan PSUs	Number of Integration bonus PSUs
PSUs outstanding on Dec. 31, 2022	**97,991**	**—**	**—**
Granted PSUs	81,916	192,656	69,933
Exercised PSUs	—	—	—
Forfeited PSUs	—	—	—
Expired PSUs	—	—	—
PSUs outstanding on Dec. 31, 2023	**179,907**	**192,656**	**69,933**
Of which exercisable	—	—	—
The weighted average remaining contractual life (in years) on Dec. 31, 2023	2.17	2.05	1.03
Average fair value of PSUs granted in the current year (in USD)	19.80	11.70	13.22

The outstanding PSUs on December 31, 2022 and 2023 include PSUs of Thomas R. Stanton.

Compensation expenses arising from share-based compensation programs included in operating income were as follows:

(in thousands of EUR)	2023	2022
Plan XIV	24	964
Plan XIVa	—	203
Plan XVIa	—	245
ESP 15 management board	1,192	—
ESP 15	2,589	1,971
RSUs	1,221	—
RSUs management board	42	—
PSUs	91	—
PSUs management board	123	—
	5,282	**3,383**

Decrease in expenses in Plan XIV, Plan XIVa and Plan XVIa in 2023 is due to the exchange of share options in 2022. Plans ESP 15 management board, ESP 15, RSUs and PSUs include recharged costs of Adtran Holdings, Inc.

(39) Related party transactions

Adtran Holdings, Inc. and its subsidiaries qualify as related parties to Adtran Networks on December 31, 2023, in the sense of IAS 24. On December 31, 2023, Adtran held a 65.32% share in the equity of Adtran Networks SE.

On December 31, 2023 trade accounts payables amounting to EUR 1,382 thousand (prior year: EUR 198 thousand) and trade accounts receivables amounting to EUR 980 thousand existed in respect to Adtran (prior year: EUR 1,985 prior year). Liabilities mainly include the recharged costs from the exchanged stock options. The receivables relate to the exercise of stock options and the service contracts described below.

In Q1 2023 a reseller agreement was concluded between Adtran Networks SE and Adtran, Inc. (reseller) and in Q2 2023 between Adtran Networks SE (reseller) and Adtran, Inc. Furthermore, in Q2 2023 a stock compensation recharges agreement was concluded between Adtran Networks SE and Adtran Holdings, Inc. In addition, an R&D service agreement was concluded between ADVA India and Adtran Inc. in Q4 2023.

Moreover, Adtran Networks reports a financial liability to Adtran Holdings, Inc. as described in note (15).

All transactions with the related parties listed above are conducted on an arm's-length basis.

In addition, Adtran Networks has on December 31, 2023, a receivable from the profit and loss transfer agreement amounting to EUR 23,934 thousand (prior year: nil).

Key management personnel remuneration is disclosed in note (40).

(40) Governing boards and remuneration

Management board

	Resident in	External mandates
Thomas R. Stanton Chief executive officer (since July 1, 2023)	Gurley, Alabama, USA	Chairman of the Board and CEO of Adtran Holdings Member of the board of Directors of the Economic Development Partnership of Alabama (EDPA) Member of the board of Directors of Cadence Bank Member of the board of Directors of Huntsville Chamber of Commerce
Christoph Glingener Chief technology officer (Chief executive officer until June 30, 2023)	Jade, Germany	Member of the board of trustees of Fraunhofer Heinrich-Hertz-Institute, Berlin, Germany
Ulrich Dopfer Chief financial officer	Alpharetta, Georgia, USA	–
Scott St. John Chief marketing & sales officer (until January 21, 2023)	Raleigh, North Carolina, USA	–

Supervisory board

	Resident in	Occupation	External mandates
Eduard Scheiterer Chairman (since July 10, 2023)	Geretsried, Germany	Pensioner	–
Johanna Hey (Chairwoman until June, 30 2023)	Cologne, Germany	Professor for tax law, University of Cologne, Cologne, Germany	Member of the supervisory board of Gothaer Versicherungsbank VVaG, Cologne, Germany Member of the supervisory board of Gothaer Finanzholding AG, Cologne, Germany Chairwoman of the supervisory board of Cologne Executive School GmbH, Cologne, Germany Member of the supervisory board of Flossbach von Storch AG, Cologne, Germany Member of the Board of Directors of Adtran Holdings, Inc., Huntsville, AL, USA (until September 30, 2023)
Frank Fischer Vice Chairman	Duesseldorf, Germany	Lawyer and Tax Advisor	–
Heike Kratzenstein (since July 10, 2023)	Glonn, Germany	CEO Asmodee Holding GmbH	

Remuneration of the management board

The total remuneration of the management board recognized in accordance with IFRS is broken down into the various components as follows:

(in thousands of EUR)	2023	2022
Short-term employee benefits	1,536	1,727
Post-employment benefits	—	—
Other long-term benefits	—	—
Termination benefits	447	—
Share-based payment	1,358	448
Total compensation	**3,341**	**2,175**

Short-term employee benefits include fixed remuneration, fringe benefits and current variable remuneration. No variable remuneration is included in 2023 as the underlying targets for sales and adjusted EBIT of the Adtran group were not achieved.

In 2023 and 2022, no loans were granted to current and former members of the management board. As of December 31, 2023 and 2022, there were no receivables from members of the management board.

On December 31, the current and former members of the management board held the following stock options and other share-based remuneration instruments of Adtran Holdings, Inc. :

Options		RSUs		Annual PSUs		3-year plan PSUs		Integration bonus PSUs	
2023	2022	2023	2022	2023	2022	2023	2022	2023	2022
1,004,101	1,097,918	365,936	349,282	179,907	97,991	192,656	—	—	—

On December 31, 2023, and 2022, the options to members of the management board, except for those of Thomas R. Stanton, were originally granted out of Plan XIVa and Plan XVIa and were converted into Adtran stock options in 2022. The details of this are given in note (38).

As of December 31, 2023 and 2022, the active and former members of the management board did not hold any shares in Adtran Networks SE.

The current and former members of the management board received cash inflows of EUR 96 thousand from the exercise of stock options in 2023 (2022: EUR 1,562 thousand). Further details on the stock option programs can be found in note (38).

The total remuneration according to section 314 HGB for active and former members of the management boards was EUR 10,246 thousand in 2023 and EUR 3,961 thousand in 2022; thereof in 2023 EUR 447 thousand relate to remuneration for former members of the management board in accordance with Section 314 paragraph 1 no. 6b HGB.

The fixed remuneration amounting to EUR 1,803 thousand (prior year: EUR 1,063 thousand) includes non-performance-based considerations and fringe benefits (company car allowances). In 2023, the variable remuneration of EUR 180 thousand relates to a bonus for a former member of the management board, which is recognized as a current liability as at December 31, 2023 (previous year variable performance-related remuneration: EUR 1,454 thousand). Regarding share-based remuneration components, the fair value (market value) at the grant date in 2023 amounted to EUR 8,263 thousand (previous year: EUR 1,444 thousand).

Remuneration of the supervisory board

The fixed remuneration to be paid to the supervisory board for 2023 and 2022 totaled EUR 234 thousand and EUR 226 thousand, respectively.

The remuneration for the supervisory board of Adtran Networks SE is paid out in quarterly installments. The fixed remuneration for Q4 2023 amounting to EUR 59 thousand was paid out in January 2024. In the consolidated financial statements, this amount is recognized in other current liabilities.

In 2022, current and former members of the supervisory board received no further compensation, in particular no post-employment benefits (prior year: none).

On December 31, 2023, no shares or stock options were held by members of the supervisory board (December 31, 2022: none).

(41) Events after the balance sheet date

There were no events after the balance sheet date that have a material impact on the net assets and financial position or the results of operations.

Declaration of compliance with the German Corporate Governance Code

Pursuant to section 161 of the German Stock Corporation Law (AktG), the management board and the supervisory board have issued a declaration of compliance with the German Corporate Governance Code. This declaration is published on the group's website www.adva.com.

Meiningen, April 16, 2024

Thomas R. Stanton

Christoph Glingener Ulrich Dopfer

Affirmative declaration of the legal representatives

We, the members of the management board of Adtran Networks SE, to the best of our knowledge affirm that, in accordance with the applicable reporting principles, the management report and the consolidated financial statements of the Adtran Networks group represent a true and fair view of the net assets, financial position and performance of the group, together with a description of the principal opportunities and risks associated with the expected development of the group.

Meiningen, April 16, 2024

Thomas R. Stanton

Christoph Glingener Ulrich Dopfer

Independant auditor’s report

To Adtran Networks SE, Meiningen

Report on the audit of the consolidated financial statements and of the group management report

Audit Opinions

We have audited the consolidated financial statements of Adtran Networks SE (formerly: ADVA Optical Networking SE), Meiningen, and its subsidiaries (the Group), which comprise the consolidated statement of financial position as at 31 December 2023, and the consolidated statement of comprehensive income, consolidated statement of profit or loss, consolidated statement of changes in equity and consolidated statement of cash flows for the financial year from 1 January to 31 December 2023, and notes to the consolidated financial statements, including material accounting policy information. In addition, we have audited the group management report of Adtran Networks SE, which is combined with the Company’s management report, for the financial year from 1 January to 31 December 2023. In accordance with German legal requirements, we have not audited the content of the information contained in the subsection "Risk management system" of the section "Risk and opportunity report" of the management report, which is marked as unaudited.

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 § [Article] 315e Abs. [paragraph] 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 at 31 December 2023, and of its financial performance for the financial year from 1 January to 31 December 2023, 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 audit opinion on the management report does not cover the content of the above-mentioned disclosures in the sub-section "Risk management system" of the section "Risk and opportunity report".

Pursuant to § 322 Abs. 3 Satz [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 of the group management report.

Basis for the Audit Opinions

We conducted our audit of the consolidated financial statements and of the group management report in accordance with § 317 HGB and the EU Audit Regulation (No. 537/2014, referred to subsequently as “EU Audit Regulation”) in compliance with 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 European law and German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. In addition, in accordance with Article 10 (2) point (f) of the EU Audit Regulation, we declare that we have not provided non-audit services prohibited under Article 5 (1) of the EU Audit Regulation. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions on the consolidated financial statements and on the group management report.

Key Audit Matters in the Audit of the Consolidated Financial Statements

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the financial year from 1 January to 31 December 2023. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our audit opinion thereon; we do not provide a separate audit opinion on these matters.

In our view, the matters of most significance in our audit were as follows:

❶ Recoverability of goodwill

❷ Accounting treatment of internally generated intangible assets

Our presentation of these key audit matters has been structured in each case as follows:

① Matter and issue

② Audit approach and findings

③ Reference to further information

Hereinafter we present the key audit matters:

❶ **Recoverability of goodwill**

① In the Company's consolidated financial statements goodwill amounting to EUR 64,899 thousand (9.9 % of total assets respectively 17.2 % of total stockholders´equity) thousand is reported under the balance sheet item "Goodwill”. Goodwill is tested for impairment by the Company once a year or when there are indications of impairment to determine any possible need for write-downs. The impairment test is carried out at the level of the groups of cash-generating units to which the relevant goodwill is allocated. The carrying amount of the relevant cash generating units, including goodwill, is compared with the corresponding recoverable amount in the context of the impairment test. The recoverable amount is generally determined using the value in use. The present value of the future cash flows from the respective group of cash-generating units normally serves as the basis of valuation. Present values are calculated using discounted cash flow models. For this purpose, the adopted medium-term business plan of the Group forms the starting point which is extrapolated based on assumptions about long-term rates of growth. Expectations relating to future market developments and assumptions about the development of macroeconomic factors are also taken into account. The discount rate used is the weighted average cost of capital for the relevant group of cash-generating units. The impairment test determined that an impairment in the amount of EUR 4,553 thousand was necessary.

The outcome of this valuation is dependent to a large extent on the estimates made by the executive directors with respect to the future cash inflows from the respective group of cash-generating units, the discount rate used, the rate of growth and other assumptions, and is therefore subject to considerable uncertainty. Against this background and due to the complex nature of the valuation, this matter was of particular significance in the context of our audit.

② As part of our audit, we assessed the methodology employed for the purposes of performing the impairment test, among other things. After matching the future cash inflows used for the calculation against the adopted medium-term business plan of the Group, we assessed the appropriateness of the calculation, in particular by reconciling it with general and sector-specific market expectations. In addition, we assessed the appropriate consideration of the costs for Group functions. In the knowledge that even relatively small changes in the discount rate applied can have a material impact on the enterprise value calculated in this way, we focused our testing in particular on the parameters used to determine the discount rate applied and assessed the calculation model. In order to reflect the uncertainty inherent in the projections, we evaluated the sensitivity analyses performed by the Company.

Overall, the valuation parameters and assumptions used by the executive directors are in line with our expectations and are within the ranges considered by us to be reasonable.

③ The Company's disclosures on goodwill are contained in sections (4) Recognition and measurement, (5) Significant accounting judgments, estimates and assumptions and (13) Fixed assets in the notes to the consolidated financial statements.

❷ **Accounting treatment of internally generated intangible assets**

① In the Company's consolidated financial statements an amount of EUR 104,555 thousand (15.9 % of total assets respectively 27.7 % of total stockholders´equity) is reported under the balance sheet item "capitalized development projects”. This item represents development costs incurred for new products, which have been capitalized in accordance with the provisions of IAS 38 and have already been partially amortized in line with their useful lives. An impairment test is carried out at least once annually for projects still under development in accordance with IAS 36. Own expenses capitalized in accordance with these provisions during the financial year amounted to EUR 45,820 thousand, representing a reduction in the expenses charged to profit or loss. The eligibility of the development expenses for capitalization depends on the criteria established by IAS 38.57 and includes considerable scope for judgment, for example with respect to future cash inflows or the expected useful lives of the products developed. Against this background and due to the underlying complexity of the methodological requirements relating to measurement and eligibility for capitalization, this matter was of particular significance for our audit.

② As part of our audit, we evaluated the internal processes and controls for recording the development projects, among other things. We also assessed the methodology used to calculate the expenses eligible for capitalization. We assessed the eligibility for capitalization of material projects on the basis of the criteria set out in IAS 38.57. We evaluated the stage of progress of the particular project by means of discussions with members of staff in the R&D controlling department and inspection of the project documentation. We assessed the amount of the development costs capitalized and the recoverability of the development expenditure on the basis of suitable supporting evidence. In our view, the methodology applied by the Company for capitalizing development projects is appropriate, and the stage of completion of the projects and the development costs capitalized have been clearly documented.

③ The Company's disclosures on internally generated intangible assets are contained in sections (4) Recognition and measurement, (5) Significant accounting judgments, estimates and assumptions, (13) Fixed assets, (26) Income tax and (31) Segment reporting in the notes to the consolidated financial statements.

Other Information

The executive directors are responsible for the other information. The other information includes the information contained in the subsection "Risk management system" of the section " Risk and opportunity report" of the management report, which is marked as unaudited, as a component of the management report that has not been audited in terms of content.

The other information comprises also

- the statement on corporate governance pursuant to § 289f HGB and § 315d HGB
- the separate non-financial report to comply with §§ 289b to 289e HGB and with §§ 315b to 315c HGB
- all remaining parts of the annual report – excluding cross-references to external information – with the exception of the audited consolidated financial statements, the audited group management report and our auditor’s report.

Our audit 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 audit opinion or any other form of assurance conclusion thereon.

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

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

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

The executive directors are responsible for the preparation of the 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 § 315e Abs. 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, the executive directors are 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 (i.e., fraudulent financial reporting and misappropriation of assets) or error.

In preparing the consolidated financial statements, the executive directors are 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, the executive directors are 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, the executive directors are 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 audit 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 § 317 HGB and the EU Audit Regulation and in compliance with 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 audit 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 audit opinion on the effectiveness of these systems.
- Evaluate the appropriateness of accounting policies used by the executive directors and the reasonableness of estimates made by the executive directors and related disclosures.
- Conclude on the appropriateness of the executive directors' 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 audit 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 § 315e Abs. 1 HGB.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express audit 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 audit 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 the executive directors in the group management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the executive directors 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 audit 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.

We also provide those charged with governance with a statement that we have complied with the relevant independence requirements, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, actions taken to eliminate threats or safeguards applied.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter.

Other legal and regulatory requirements

Report on the Assurance on the Electronic Rendering of the Consolidated Financial Statements and the Group Management Report Prepared for Publication Purposes in Ac-cordance with § 317 Abs. 3a HGB

Assurance Opinion

We have performed assurance work in accordance with § 317 Abs. 3a HGB to obtain reasonable assurance as to whether the rendering of the consolidated financial statements and the group management report (hereinafter the "ESEF documents") contained in the electronic file Adtran_SE_KA+LB_ESEF-2024-04-16.zip and prepared for publication purposes complies in all material respects with the requirements of § 328 Abs. 1 HGB for the electronic reporting format ("ESEF format"). In accordance with German legal requirements, this assurance work extends only to the conversion of the information contained in the consolidated financial statements and the group management report into the ESEF format and therefore relates neither to the information contained within these renderings nor to any other information contained in the electronic file identified above.

In our opinion, the rendering of the consolidated financial statements and the group management report contained in the electronic file identified above and prepared for publication purposes complies in all material respects with the requirements of § 328 Abs. 1 HGB for the electronic reporting format. Beyond this assurance opinion and our audit opinion on the accompanying consolidated financial statements and the accompanying group management report for the financial year from 1 January to 31 December 2023 contained in the "Report on the Audit of the Consolidated Financial Statements and on the Group Management Report" above, we do not express any assurance opinion on the information contained within these renderings or on the other information contained in the electronic file identified above.

Basis for the Assurance Opinion

We conducted our assurance work on the rendering of the consolidated financial statements and the group management report contained in the electronic file identified above in accordance with § 317 Abs. 3a HGB and the IDW Assurance Standard: Assurance Work on the Electronic Rendering, of Financial Statements and Management Reports, Prepared for Publication Purposes in Accordance with § 317 Abs. 3a HGB (IDW AsS 410 (06.2022)) and the International Standard on Assurance Engagements 3000 (Revised). Our responsibility in accordance therewith is further described in the "Group Auditor's Responsibilities for the Assurance Work on the ESEF Documents" section. Our audit firm applies the IDW Standard on Quality Management: Requirements for Quality Management in the Audit Firm (IDW QMS 1 (09.2022)).

Responsibilities of the Executive Directors and the Supervisory Board for the ESEF Documents

The executive directors of the Company are responsible for the preparation of the ESEF documents including the electronic rendering of the consolidated financial statements and the group management report in accordance with § 328 Abs. 1 Satz 4 Nr. [number] 1 HGB and for the tagging of the consolidated financial statements in accordance with § 328 Abs. 1 Satz 4 Nr. 2 HGB.

In addition, the executive directors of the Company are responsible for such internal control as they have considered necessary to enable the preparation of ESEF documents that are free from material non-compliance with the requirements of § 328 Abs. 1 HGB for the electronic reporting format, whether due to fraud or error.

The supervisory board is responsible for overseeing the process for preparing the ESEF documents as part of the financial reporting process.

Group Auditor's Responsibilities for the Assurance Engagement on the ESEF Documents

Our objective is to obtain reasonable assurance about whether the ESEF documents are free from material non-compliance with the requirements of § 328 Abs. 1 HGB, whether due to fraud or error. We exercise professional judgment and maintain professional skepticism throughout the assurance work. We also:

- Identify and assess the risks of material non-compliance with the requirements of § 328 Abs. 1 HGB, whether due to fraud or error, design and perform assurance procedures responsive to those risks, and obtain assurance evidence that is sufficient and appropriate to provide a basis for our assurance opinion.
- Obtain an understanding of internal control relevant to the assurance work on the ESEF documents in order to design assurance procedures that are appropriate in the circumstances, but not for the purpose of expressing an assurance opinion on the effectiveness of these controls.
- Evaluate the technical validity of the ESEF documents, i.e., whether the electronic file containing the ESEF documents meets the requirements of the Delegated Regulation (EU) 2019/815 in the version in force at the date of the consolidated financial statements on the technical specification for this electronic file.
- Evaluate whether the ESEF documents provide an XHTML rendering with content equivalent to the audited consolidated financial statements and to the audited group management report.
- Evaluate whether the tagging of the ESEF documents with Inline XBRL technology (iXBRL) in accordance with the requirements of Articles 4 and 6 of the Delegated Regulation (EU) 2019/815, in the version in force at the date of the

consolidated financial statements, enables an appropriate and complete machine-readable XBRL copy of the XHTML rendering.

Further Information pursuant to Article 10 of the EU Audit Regulation

We were elected as group auditor by the annual general meeting on 24 May 2023. We were engaged by the supervisory board on 12 October 2023. We have been the group auditor of the Adtran Networks SE, Meiningen, without interruption since the financial year 2010.

We declare that the audit opinions expressed in this auditor's report are consistent with the additional report to the audit committee pursuant to Article 11 of the EU Audit Regulation (long-form audit report).

Reference to an other matter– use of the auditor's report

Our auditor's report must always be read together with the audited consolidated financial statements and the audited group management report as well as the assured ESEF documents. The consolidated financial statements and the group management report converted to the ESEF format – including the versions to be filed in the company register – are merely electronic renderings of the audited consolidated financial statements and the audited group management report and do not take their place. In particular, the "Report on the Assurance on the Electronic Rendering of the Consolidated Financial Statements and the Group Management Report Prepared for Publication Purposes in Accordance with § 317 Abs. 3a HGB" and our assurance opinion contained therein are to be used solely together with the assured ESEF documents made available in electronic form.

German public auditor responsible for the engagement

The German Public Auditor responsible for the engagement is Jürgen Schumann.

Munich, April 16, 2024

PricewaterhouseCoopers GmbH
Wirtschaftsprüfungsgesellschaft

Jürgen Schumann	**ppa. Ralph Jakobi**
Wirtschaftsprüfer (German Public Auditor)	Wirtschaftsprüfer (German Public Auditor)

Additional information

Report of the supervisory board

With the 2023 financial year, the supervisory board can look back on an eventful year. This year was also characterized by the takeover process completed in July 2022 and the subsequent Integration process under the domination and profit and loss transfer agreement with ADTRAN Holdings, Inc. effective since January 16, 2023. In the second half of the year, this again resulted in personnel changes at the level of the management board and the supervisory board.

In 2023, the supervisory board once again performed its duties under the law and the company's articles. It carefully and continuously monitored the management board and supported it in all strategic matters. The supervisory board has been directly involved in the early stages of all important strategic decisions of the company. During a total of five ordinary meetings, in which all members of the supervisory board and the members of the management board regularly participated, the management board consistently, promptly and extensively informed the supervisory board about the business situation of the company and the group. In addition, the supervisory board occasionally consults before or after the regular meetings without the management board being present. In particular, the supervisory board was informed on matters regarding strategic orientation, market development and prospects for growth, as well as on the development of net assets, financial position and profitability, including budgeting, investments, personnel, compliance, internal audit and risk management. The supervisory board extensively discussed all important business issues on the basis of the management board's reports. Any deviations of the actual business development from the group's plans and objectives were thoroughly explained by the management board and reviewed by the supervisory board. The supervisory board gave its approvals to all important decisions, after thorough examination and consultation, where required by law or the company's articles and acting in the best interest of the company and the group. Furthermore, on urgent matters resolutions were passed outside of meetings during the year. Moreover, especially the chairman/chairwoman and the vice chairwoman/chairman of the supervisory board maintained regular contact with individual members of the management board outside of scheduled meetings and were kept up-to-date with respect to current business developments, important transactions and forthcoming decisions. Furthermore, the supervisory board held two extraordinary meetings in the fiscal year 2023. For a breakdown of which of the meetings were held face-to-face or as video or telephone conferences and the individual participation, please refer to the tables at the end of this report.

Main management board activities covered and examined by the supervisory board

In addition to the ongoing integration process following the takeover and the entry into force of the domination and profit and loss transfer agreement with ADTRAN Holdings. Inc., the supervisory board discussions in 2023 focused mainly on the business development and strategic direction of the company and the group, particularly its revenue, earnings and headcount development, and Adtran Networks' financial situation. In this context, new opportunities for revenue growth and the development of margins were discussed.

The supervisory board closely monitored and supported the activities of the management board, including discussions on corporate governance. It discussed the group's organization and key business processes with the management board and assured itself of the efficiency of this organization and these processes. The management board submitted to the supervisory board all transactions and decisions requiring approval according to the company's articles. The supervisory board approved all such transactions and decisions.

Committees

In order to perform its tasks efficiently, the supervisory board continued to maintain two committees during 2023, the audit committee and the compensation and nomination committee.

Until the end of June, 2023, the audit committee consisted of Frank Fischer (Chairman), Eduard Scheiterer and Johanna Hey. Until the end of June 2023, the compensation and nomination committee consisted of Johanna Hey (Chairwoman), Frank Fischer and Eduard Scheiterer. From July 2023, the audit committee consisted of Frank Fischer (Chairman), Eduard Scheiterer and Heike Kratzenstein. Since July 2023, Eduard Scheiterer (Chairman), Frank Fischer and Heike Kratzenstein have been members of the compensation and nomination committee.

The audit committee held five meetings during the reporting period. In this respect, too, reference is made to the tables at the end for a breakdown of the individual participation in the meeting and the modalities of the meeting. In addition to reviewing the consolidated annual and three quarterly financial statements and group management reports as well as the company's annual financial statements and management report, the audit committee discussed the financial position and performance of the group, the appointment of the external auditor, the audit scope for 2023, the development of tax positions and risks, internal audit activities, as well as the effectiveness of the internal controls related to financial reporting and of the risk management system.

The compensation and nomination committee sat eight times during the past year. The committee's discussions focused in particular on the remuneration and the contract extensions of the management board members. Individual meeting attendance and meeting modalities are detailed in the tables at the end of the report

Reports on the work of the supervisory board committees were regularly presented and discussed during the subsequent supervisory board plenary meeting.

Education and training measures

The supervisory board members take responsibility for the training and further education measures required for their tasks and receive appropriate support from the company if necessary.

Corporate Governance Code

The supervisory board welcomes the German Corporate Governance Code and supports its objectives. The supervisory board has agreed to comply with most of the recommendations and proposals of the Corporate Governance Code within the Adtran Networks organization. In its meeting on October 30, 2023, the supervisory board discussed the deviations from the Code and jointly issued the regularly scheduled update on the declaration of compliance in accordance with section 161 of the German Stock Corporation Law (Aktiengesetz, AktG). The declaration is made permanently available to shareholders on the company's website.

Annual financial statements and management reports

Adtran Networks' consolidated annual financial statements for the year ended December 31, 2023, and Adtran Networks SE's annual financial statements for the year ended December 31, 2023, as well as the combined management report of the Adtran Networks group and Adtran Networks SE for the fiscal year 2023 were audited by the company's appointed auditor for 2023, PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, Munich, who issued unqualified audit opinions. Pursuant to section 315e of the German Commercial Code (Handelsgesetzbuch, HGB), the consolidated annual financial statements have been prepared according to International Financial Reporting Standards (IFRS) as enacted in the EU. All management letter points issued by the auditor were taken up, discussed with the management board, and their consideration was ensured. In addition, the 2023 remuneration report was also audited by the company's appointed auditor and issued with an unqualified opinion.

All relevant accounting documents, financial reports and audit reports were submitted to the supervisory board members prior to the meeting of the supervisory board dealing with the company's and group's 2023 financial statements. On February 21 and April 16, 2024, these documents were discussed and examined in detail jointly by the audit committee and the auditor and in consideration of the auditor's long-form report. The audit committee reported its findings to the entire supervisory board in its meeting on April 16, 2024. Furthermore, the auditor, who was present in both meetings, reported on the material results of the audit, explained net assets, the financial position and the results of operations of the company and the group, and was available to answer additional questions from the members of the supervisory board.

In view and consideration of these audit reports and on the basis of the additional information provided by the auditor, the supervisory board discussed and examined in detail the financial statements and management reports in its meeting on April 16, 2024. It unanimously approved Adtran Networks SE's annual financial statements and management report, as well as Adtran Networks' consolidated annual financial statements and group management report. The annual financial statements of Adtran Networks SE for the fiscal year 2023 are thereby adopted.

Combined separate non-financial report

The company's auditor, PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, Munich, was also engaged to perform a voluntary limited assurance engagement in accordance with ISAE 3000 (Revised) on the combined separate non-financial (group) report. PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft issued an unqualified audit opinion. The combined separate non-financial (group) report and the audit opinion of PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft were forwarded to the members of the supervisory board in good time. In its meeting on April 16, 2024, the supervisory board intensively discussed, examined and approved the combined separate non-financial (Group) report. There were no indications for objections to the combined separate non-financial (Group) report or the assessment by PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft.

Changes within the management and supervisory boards

Within the fiscal year 2023, personnel changes occurred in both the management and supervisory board:

In July 2023, Heike Kratzenstein was appointed by the court as a member of the supervisory board of Adtran Networks SE. The elected member succeeded Johanna Hey, who resigned from the company's supervisory board with effect from June 30, 2023 due to her declaration of resignation on June 21, 2023.

Eduard Scheiterer was subsequently elected as the new Chairman of the supervisory board on July 10, 2023.

Frank Fischer, who had already been elected Deputy Chairman on November 30, 2022 (following the extraordinary general meeting), continued in his role as Deputy Chairman of the supervisory board.

The full supervisory board would like to thank Johanna Hey for her commitment and valuable advice during her time as member of the supervisory board.

Scott St. John resigned from his position as a member of the management board with effect from January 21, 2023. At its meeting on March 8, 2022, the supervisory board then followed the proposals of the compensation and nomination committee and resolved to extend the appointments of Christoph Glingener and Ulrich Dopfer as members of the management board until December 31, 2024. Christoph Glingener then resigned from his position as Chairman of the management board (*CEO*) with effect from June 30, 2023. Thomas Richard Stanton was then appointed as a member of the management board and new Chairman of the management board (*CEO*) of Adtran Networks SE with effect from July 1, 2023 up to and including December 31, 2024.

The supervisory board would like to thank Scott St. John for the many years of trusting cooperation and his great commitment and hereby expresses its appreciation for the work he has done.

The supervisory board would like to express its appreciation for the personal dedication, performance and the ongoing commitment of the management board and all employees of the company and the group during 2023.

Individual participation in the meetings according to D.7 DCGK

	Plenum	Audit Committee	Compensation and Nomination Committee
Johanna Hey	3/3	3/3	7/7
Frank Fischer	7/7	5/5	8/8
Eduard Scheiterer	7/7	5/5	8/8
Heike Kratzenstein (since July 1, 2023)	4/4	2/2	1/1

Modality of meeting participation according to D.7 DCGK

	Plenum	Audit Committee	Compensation and Nomination Committee
Presence	0	0	0
Video conference	7	5	8
Telephone conference	0	0	0

April 16, 2024

On behalf of the supervisory board:

Dr. Eduard Scheiterer
Chairman of the supervisory board

Quarterly overview 2022 - 2023

(IFRS, in thousands of EUR, unless stated otherwise)	2023				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
INCOME STATEMENT								
Revenues	**179,358**	**170,188**	**145,655**	**118,470**	**170,498**	**166,320**	**179,597**	**195,699**
Pro forma cost of goods sold	(120,987)	(109,956)	(90,472)	(70,979)	(117,822)	(112,751)	(119,580)	(125,108
Pro forma gross profit	**58,371**	**60,232**	**55,183**	**47,491**	**52,676**	**53,569**	**60,017**	**70,591**
Pro forma selling and marketing expenses	(17,025)	(15,596)	(14,812)	(12,780)	(18,050)	(17,959)	(18,105)	(18,861)
Pro forma general and administrative expenses	(7,364)	(9,622)	(9,489)	(7,593)	(6,647)	(6,716)	(6,724)	(7,492)
Pro forma research and development expenses	(37,471)	(37,059)	(36,037)	(33,501)	(33,943)	(34,477)	(35,347)	(34,715)
Income from capitalization of development expenses	11,356	10,175	12,358	11,931	12,420	9,759	10,402	9,524
Other operating income and expenses, net	1,863	3,962	1,528	3,709	1,356	2,259	1,489	5,360
Pro forma EBIT[1]	**9,730**	**12,092**	**8,731**	**9,257**	**7,812**	**6,435**	**11,732**	**24,407**
Amortization of intangible assets and goodwill from acquisitions	(894)	(882)	(791)	(702)	(934)	(913)	(954)	(947)
Impairment of goodwill	—	—	—	(4,553)	—	—	—	(3,460)
Stock compensation expenses	(974)	(1,433)	(1,057)	(1,818)	(398)	(441)	(1,010)	(1,884)
Expenses related to business combinations, integration and restructuring measures	(1,635)	(1,744)	(6,733)	(3,292)	(504)	(426)	(17,090)	(3,313)
Operating income (loss)	**6,227**	**8,033**	**150**	**(1,108)**	**5,976**	**4,655**	**(7,322)**	**14,803**
Interest income and expenses, net	(797)	(832)	(975)	(677)	(317)	(434)	(598)	(784)
Other financial gains and losses, net	(1,752)	(1,043)	2,279	(3,489)	1,132	3,126	4,661	(4,832)
Income (loss) before tax	**3,678**	**6,158**	**1,454**	**(5,274)**	**6,791**	**7,347**	**(3,259)**	**9,187**
Income tax benefit (expense), net	(51)	(2,870)	(149)	(17,460)	(612)	(56)	4,140	(5,406)
Net income (loss)	**3,627**	**3,288**	**1,305**	**(22,734)**	**6,179**	**7,291**	**881**	**3,781**
Earnings per share in EUR								
basic	0.07	0.06	0.03	-0.44	0.12	0.14	0.02	0.07
diluted	0.07	0.06	0.03	-0.44	0.12	0.14	0.02	0.07

[1] Pro forma EBIT is calculated prior to non-cash charges related to the stock compensation programs and amortization and impairment of goodwill and acquisition-related intangible assets. Additionally, non-recurring expenses related to M&A and restructuring measures are not included.

(IFRS, in thousands of EUR, unless stated otherwise)	2023				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
BALANCE SHEET (as of period end)								
Cash and cash equivalents	67,241	48,595	57,809	30,554	73,002	63,187	61,381	58,447
Inventories	127,445	119,391	110,198	106,273	102,002	119,635	128,495	128,829
Receivable from Adtran Holdings, Inc. due to loss absorption	—	—	—	23,934	—	—	—	—
Goodwill	70,196	70,022	71,776	64,899	72,552	75,628	80,371	71,307
Capitalized development projects	100,079	100,422	102,443	104,555	99,004	98,231	98,497	97,975
Other intangible assets	27,188	26,916	27,530	27,247	24,334	23,443	24,620	28,123
Total intangible assets	197,463	197,360	201,749	196,701	195,890	197,302	203,488	197,405
Other assets	268,341	261,635	268,815	300,359	219,354	245,776	270,690	263,231
Total assets	660,490	626,981	638,571	657,821	590,248	625,900	664,054	647,912
Liabilities to banks	10,000	10,000	10,000	13,286	47,829	40,376	55,386	56,430
Lease liabilities	19,531	19,046	22,635	30,828	24,410	23,757	23,429	21,202
Financial liabilities to Adtran Holdings, Inc.	62,006	53,006	53,616	52,773	—	—	—	—
Total financial debt	91,537	82,052	86,251	96,887	72,239	64,133	78,815	77,632
Total stockholders' equity	370,573	374,772	379,390	377,990	347,866	363,112	371,761	369,080
Equity ratio in %	56.1	59.8	59.4	57.5	58.9	58.0	56.0	57.0
CASH FLOW STATEMENT								
Cash flow from operating activities	11,776	9,543	29,927	(13,640)	(12,723)	6,532	624	20,402
Cash flow from investing activities	(15,670)	(16,027)	(19,090)	(13,243)	(22,039)	(12,609)	(17,602)	(20,828)
FINANCIAL RATIOS								
Net cash/(debt)[2]	(24,296)	(33,457)	(28,442)	(42,399)	763	(946)	(17,434)	(19,185)
Net working capital[3]	172,524	173,562	162,811	178,765	136,212	143,808	144,307	163,767
Working capital ratio in %[4]	23.7	25.4	28.2	38.0	20.6	21.6	20.3	21.1
Capital employed[5]	411,444	413,996	418,096	436,934	410,533	414,790	415,496	414,037
ROCE in %[6]	6.1	6.9	4.6	3.0	5.9	5.2	1.1	4.4
DSO in days*[7]	58.4	59.7	62.5	70.5	52.8	54.1	54.1	54.6
Inventory turns*	3.9 x	3.8 x	3.6 x	3.3 x	3.9 x	3.9 x	3.9 x	3.9 x
DPO in days*[8]	64.5	64.2	63.4	61.5	57.4	60.1	63.9	65.3
EMPLOYEES (as of period end)								
	2,001	2,089	2,096	2,101	1,978	2,002	2,024	2,014

* 12-months rolling

[2] Net cash is calculated by subtracting total financial liabilities from cash and cash equivalents. Total financial liabilities comprise current and non-current financial liabilities to banks, including factoring agreements, as well as current and non-current financial receivables and liabilities to Adtran Holdings Inc., including receivables and liabilities from the domination and profit and loss transfer agreement and current and non-current lease liabilities in accordance with IFRS 16 Leases. A negative calculation result is referred to as net debt.
[3] Working capital is defined as the total of trade accounts receivable and inventories less trade accounts payable.
[4] The working capital ratio shows the net working capital on the balance sheet date in relation to the revenues of current period.
[5] The capital employed is the difference between the average balance sheet total and the average current liabilities of the period, calculated as the arithmetic average of the quarterly balance sheet date values.
[6] ROCE is the operating result for the current period divided by the capital employed.
[7] Days Sales Outstanding: The key figure describes the average number of days between invoicing and receipt of payment.
[8] Days Payable Outstanding: The key figure indicates the average number of days between receipt of invoice and outgoing payment.

Corporate information

Corporate headquarters

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Adtran Networks on the web

More information about Adtran Networks, including solutions, technologies and products, can be found on the company's website at www.adtran.com.

PDF files of this annual report, as well as quarterly reports, presentations and general investor information, are also located on the company's website and can be downloaded in both English and German. Quarterly conference calls are conducted on the day of earnings announcements. Related PDF, audio and transcript files are available for download in the investor relations section of the group's website, www.adva.com.

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Auditor

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Wirtschaftsprüfungsgesellschaft, Munich, Germany

Legal counsels

Hogan Lovells, Munich, Germany

Tax advisers

Deloitte, Munich, Germany

Financial calendar 2024

Annual shareholders' meeting	June 28, 2024 Meiningen, Germany
Publication of six-month report 2024	August 6, 2024 Martinsried/Munich, Germany