Annual Report 2021

We are shaping the future.
With innovation and precision.

AIXTRON

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AIXTRON GROUP

2021 at a Glance

497.3 m€

Order intake

previous year 301.4m €

429.0 m€

Revenues

previous year 269.2m €

42%

Gross margin

previous year 40%

99.0 m€

EBIT

previous year 34.8 m €

0.85 €

Earnings per share

previous year 0.31 €

56.7%

EU Taxonomy aligned revenues

More details in the AIXTRON Sustainability Report

56.8 m€

R&D expenditure

previous year 58.4 m €

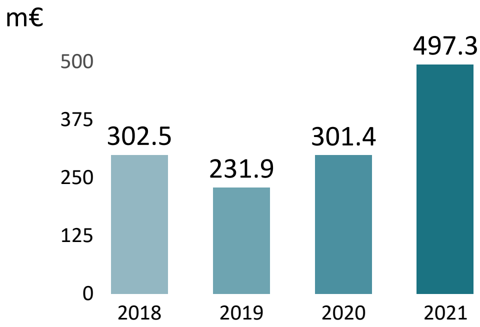
718

Employees at year-end

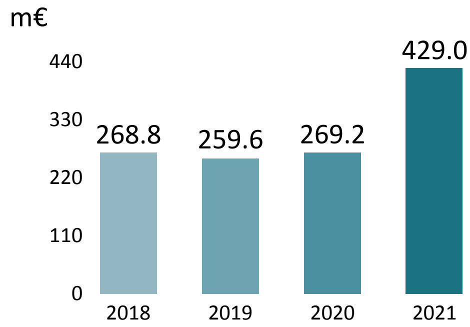
previous year 728

Key Figures

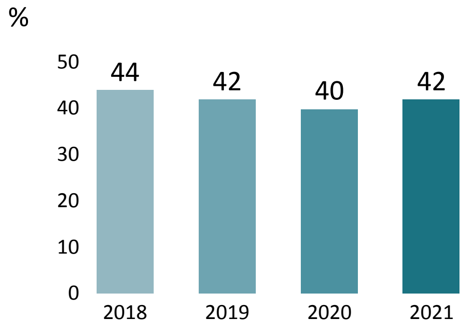
Order intake



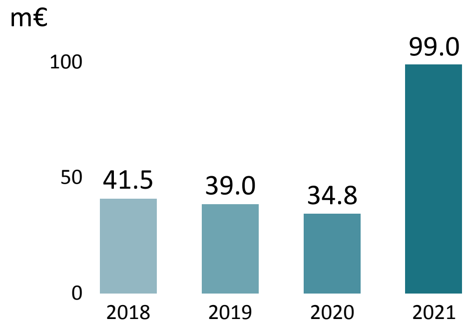
Revenues



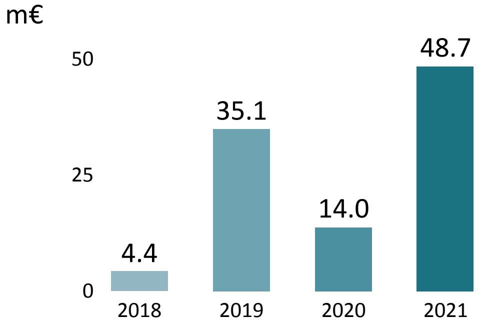
Gross margin



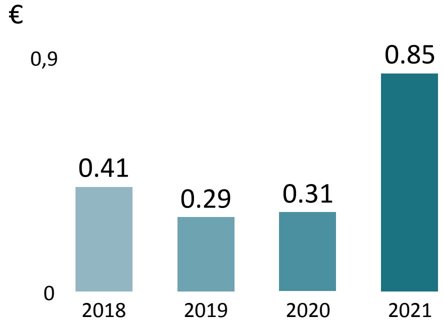
Operating result (EBIT)



Free cash flow



Earnings per share



Company Profile

AIXTRON SE is a leading provider of deposition equipment to the semiconductor industry. The Company was founded in 1983 and is headquartered in Herzogenrath, Germany (City Region of Aachen). The Company has subsidiaries in Asia, the United States, and in Europe. The Company's technology solutions are used by a broad range of customers worldwide for the manufacture of high-performance and optoelectronic applications based on compound semiconductors. These devices are used in a variety of innovative applications, technologies and industries. These include laser, LED, display technologies, optical and wireless data transmission, SiC and GaN power electronics, and many other leading-edge applications.

Our registered trademarks: AIXACT(R), AIXTRON(R), APEVA(R); Close Coupled Showerhead(R), EXP(R), EPISON(R), Gas Foil Rotation(R), OptacapTM, OVPD(R), Planetary Reactor(R), PVPD(R), STExS(R), TriJet(R)

For further information on AIXTRON (FSE: AIXA, ISIN DE000A0WMPJ6) please visit our website at: www.aixtron.com

Letter to Shareholders

Dear Shareholders, Ladies and Gentlemen,

The fiscal year 2021 was exceptionally successful for AIXTRON with order intake growing to EUR 497 million (+65%), revenues to EUR 429 million (+59%), and operating income to EUR 99 million (+184%) - the latter roughly tripling. Our growth is driven by a broad base of application segments, and is built on the global megatrends of sustainability, electrification and digitalization. 2021 also shows that our compound semiconductor equipment business is on track to move towards the large volume markets of the semiconductor industry. Compound semiconductors are a key technology for numerous technology fields, as they are superior to classic semiconductors based on silicon in many areas – this is driving our growth!

Power electronics and optoelectronics are the major trends in microelectronics driving growth for compound semiconductors.

Power electronics are required where currents and voltages are converted, e. g. in the charging and discharging of batteries and electric vehicles. These processes should happen with virtually no losses so that electrical energy can be used as efficiently as possible. This is where compound semiconductors are far superior to the silicon semiconductors used to date. AIXTRON's innovative solutions play a key role in sustainabilty. They facilitate superior energy efficiency, lay the foundations for electromobility, and thus make a decisive contribution to climate protection. In particular, the market for gallium nitride (GaN) power semiconductors has seen rapid growth in the year 2021, following their commercial breakthrough. With our technology, our customers are increasingly tapping into further segments of the with our technology. This applies not only to the field of compact smartphone chargers, but also increasingly to highly efficient power supply of data centers and IT infrastructure, as well as solar energy. At the same time, our customer base is steadily broadening, providing the basis for further growth. We also made great progress in the market for silicon carbide (SiC) power semiconductors during 2021. We are winning additional market share with well-known new customers, and we are growing with our major existing customers as they build further manufacturing capacity. And we are receiving very positive feedback from our target customers on our technology and product strategy.

In optoelectronics, the focus is on optical applications ranging from lasers for fast data transmission or for the environment scanner in autonomous driving to innovative displays. Our solutions are a key element in the ongoing digitalization of our world. Rapidly growing data volumes and the desire for ever faster data availability are the driving forces behind ever more powerful optical and mobile transmission networks. In addition, more and more vehicles are being equipped with laser-based sensor technology (LiDAR) to increase safety and facilitate autonomous driving. We are also seeing further growth in the field of red LEDs, where our customers are continuing to expand their capacities to meet the growing demand for LED displays and LED lighting in the field of indoor farming (agriculture). In addition, AIX-

TRON is excellently positioned for the next generation of displays, made of Micro LEDs. We are working with numerous customers to develop this new technology, with the aim of soon becoming a market leader in the upcoming commercialization.

The decisive factor in all these trends is that compound semiconductors play a key role and AIXTRON is actively spearheading this development as a technology and market leader. As a result, we are benefiting directly from the rapidly increasing demand that is driving our growth- both today and in the future.

In our core business of technologies for compound semiconductors, we continue to invest significantly in research and development to completely renew our equipment portfolio. Prototypes of next-generation tools are already being tested by individual customers and are achieving very good results which often also results in follow-up orders. Through significant differentiation, we will maintain our strong market position in the future- and expand it even further in some segments.

Our OLED subsidiary APEVA was initially restructured in the second quarter of 2021 and focused on the Chinese market. However, as customers in this market are also opting for Micro LED as the technological basis for the development of the next generation of displays even faster than originally expected, the shareholders of APEVA have decided not to invest further and to wind up the APEVA Group.

Our Executive Board Members Dr. Jochen Linck, Dr. Felix Grawert und Dr. Christian Danninger (from left to right).

Particularly noteworthy for fiscal year 2021 is the robustness of our supply chain. This has enabled us to grow revenues by 59% despite the tense conditions in global supply chains. We were able to meet customer demand and at EUR 181 million in the fourth quarter, we recorded the highest quarterly shipments in 10 years. This shows that our manufacturing and supply chain are well equipped for further growth in the coming years.

To be prepared for further growth in the future, we are also working intensively on the structural enhancement of AIXTRON. The generational change AIXTRON's Executive Board was completed with the entry of our Chief Financial Officer, Dr. Christian Danninger, on May 1, 2021, and the retirement of Dr. Bernd Schulte on April 01, 2021. In the new formation with three Executive Board members, each dedicated to a major area of responsibility, we are now well positioned to successfully implement our growth strategy in the coming years. We are also working in a targeted manner on streamlining and digitalizing our business processes. We are also adapting our corporate structures to facilitate further rapid growth and meet the increasing demands of our customers in terms of product quality and innovation. At the same time, we are already intensively working on the technologies of tomorrow and beyond in order to secure a pole position in newly emerging markets.

To make this a sustainable path into the future, we have expanded our activities in the area of sustainability & ESG (environment, social, governance). For example, we are already voluntarily reporting for fiscal year 2021 on the taxonomy alignment of our business activities in accordance with the new EU Taxonomy Regulation. We achieved very good results in this process, which clearly underlines the sustainability of our business activities. In addition, positive ESG ratings from various rating agencies show that AIXTRON has a strong focus on this issue and plays an essential role on the way to climate neutrality.

Having had a great year in 2021, in which we grew strongly despite numerous challenges, the outlook for the current fiscal year is again very good, so we also remain optimistic about the future.

Our employees are the key to our company's success. Their creativity and problem-solving skills, their commitment and the extraordinary dedication of our teams are the foundation of AIXTRON. This also reflects our strong, AIXTRON-specific corporate culture, which we will continue to develop carefully and with a great sense of responsibility. Our special thanks go to all our colleagues for this commitment!

Our suppliers and business partners were also crucial to our success in 2021. Despite strained global supply chains, they helped AIXTRON achieve a record year and put in a great deal of effort to make it happen. Our thanks also go to them.

A big thank you also goes to our Supervisory Board for their trusting cooperation in all matters of strategy and corporate development.

Also, we would like to thank you, our shareholders, for your confidence in us to lead AIXTRON sustainably and profitably into a future of continued strong growth.

Dr. Felix Grawert **Dr. Christian Danninger** **Dr. Jochen Linck**

Supervisory Board Report

In fiscal year 2021, AIXTRON generated the highest order intake and revenues since 2012. This is the result of a consistent focus on applications of compound semiconductor materials in fast growing end markets, which we have been pursuing in a targeted manner for several years. The outstanding commitment of AIXTRON's employees has made this performance possible, despite a challenging business environment in the face of the COVID-19 pandemic.

AIXTRON provides key technology for the megatrends of sustainability and digitalization, which offer exceptionally attractive growth opportunities. With respect to sustainability, AIXTRON's innovative power electronics solutions are making a significant contribution to climate protection and energy efficiency, as well as to the expansion of electromobility and renewable energies. Compound semiconductors manufactured on AIXTRON equipment are core components of electric vehicles, highly efficient data centers, and in the area of power generation from renewable sources. The rapidly advancing digitalization is enabled by AIXTRON's solutions in optoelectronics. Here, the focus is on the expansion of optical data transmission networks, high-speed mobile networks, and environment detection through optical sensors. In addition, Micro LEDs will form the backbone for the next generation of displays, whether in wearables, smartphones, in TV sets or in AR/VR glasses. All of these applications will be unlocked by technologies manufactured on AIXTRON equipment. AIXTRON has established an outstanding global market position in these markets through targeted investments in research and development and will consistently exploit the resulting business opportunities in the coming years.

The new appointments to the Executive Board, as resolved by the Supervisory Board in 2019, were successfully completed in 2021. Dr. Bernd Schulte retired on April 1, 2021, after nineteen successful years on the Executive Board. The Chief Financial Officer (CFO) position was appointed with Dr. Christian Danninger as of May 1, 2021. Since then, the Executive Board has consisted of a total of three members. In addition to Dr. Felix Grawert, who was appointed Chairman of the Executive Board on April 1, 2021, these are Dr. Joachim Linck, Chief Operating Officer (COO), and Dr. Christian Danninger, Chief Financial Officer (CFO). Due to the complementary competence profiles and backgrounds of experience, the Executive Board is now best positioned to seize the growth opportunities in the coming years.

Training or professional development measures for members of the Supervisory Board are appropriately supported by the Company.

The growing importance of sustainability in Group management was taken into account in 2021 by creating a new staff function ESG & Sustainability Management, reporting directly to the Executive Board. As a climate-neutral Company, AIXTRON is also striving to play a pioneering role in this area and is already reporting voluntarily on its EU Taxonomy aligned revenues, capital expenditure (CapEx) and operating expenses (OpEx) for fiscal year 2021. The results impressively reflect the decisive contribution AIXTRON is making with its technologies to reducing the global CO_2 footprint and thus to reducing global warming.

The Supervisory Board has prepared for the upcoming change of auditor and has decided to propose to the Annual General Meeting the election of KPMG AG Wirtschaftsprüfungsgesellschaft as auditor for the Company's annual and consolidated financial statements for the 2022 financial year.

Throughout the reporting year, the Supervisory Board performed the duties and responsibilities entrusted to it by law, the Articles of Association, and the Rules of Procedure without limitation.

Cooperation between the Supervisory Board and the Executive Board

The Supervisory Board continuously monitored the Executive Board in its management of the Company and advised it on all matters of importance to the Company, so that the Supervisory Board was always able to verify the legality and regularity, expediency, and economic efficiency of the Company's management.

The Supervisory Board was directly involved at an early stage in all decisions of fundamental importance to the Company. The Executive Board informed the Supervisory Board regularly, promptly, and comprehensively about the course of business, corporate planning, and the strategic development of the AIXTRON Group. In addition, the Supervisory Board regularly consulted with the Executive Board on the Company's risk situation, risk management, and compliance. Based on the Executive Board's reports, business developments and other events of importance to the Company were discussed in detail. The Supervisory Board approved the respective resolution proposals of the Executive Board after thorough examination and consultation.

The Supervisory Board did not make use of the opportunity to review the Company's books and records (Section 111 (2) of the German Stock Corporation Act (AktG)).

Cooperation with the Executive Board was characterized in every aspect by responsible and targeted action. The Executive Board fully complied with its reporting obligations to the Supervisory Board, both verbally and in writing.

As Chairman of the Supervisory Board, I was also in regular contact with the Executive Board even beyond the Supervisory Board meetings. In addition to the current business situation and important business transactions, we discussed especially matters of strategic positioning.

Supervisory Board Meetings in 2021

In the year 2021 the Supervisory Board met in four ordinary meetings on February 22, May 18, September 22, and December 15. The February meeting was attended by the Supervisory Board members via audio and video conference to avoid COVID-19 infection risks, with the exception of Chairman Kim Schindelhauer, who was present on site. The meetings in February and May were each attended by all acting Supervisory Board members. Prof. Dr. Biagosch was unable to attend the meeting in September 2021 and Prof. Dr. Denk was unable to attend the meeting in December 2021. After the meetings, both expressly approved all the resolutions adopted.

Prior to the meetings, all Supervisory Board members received detailed quarterly reports on the Company's situation, as well as other information, such as internal control reports, meeting minutes, Company presentations, analyst reports, consensus estimates, press releases, and the AIXTRON financial reports or financial notifications. These are made available via an encrypted digital platform specially set up for the Supervisory Board. The Supervisory Board obtained a comprehensive picture of the business situation before and during the meetings based on current financial figures as well as updated forecast reports and development plans (orders, revenues, competition, market shares). Deviations in the course of business from the planned budgets were explained and justified in detail.

In addition, the Supervisory Board focused intensively on the development progress of new equipment generations. These are key to the Company's sustainable and profitable growth, resulting from the expected growth in AIXTRON's target markets.

The meeting on **February 22, 2021**, focused on the annual and consolidated financial statements and the combined management report for fiscal year 2020 and the corresponding discussions and resolutions. We also discussed the draft agenda for the 2021 Annual General Meeting, which we approved after clarification of some unresolved items. Furthermore, the Supervisory Board discussed and approved the proposed Declaration of Corporate Governance. The non-financial report of AIXTRON SE and the Group (Sustainability Report) for fiscal year 2020 prepared by AIXTRON and reviewed by the auditor was checked, discussed, and approved. The Supervisory Board then discussed in detail the business development in 2021 and the future strategic alignment of APEVA. The Supervisory Board formally confirmed the appointment of Dr. Grawert as Chairman of the Executive Board from April 1, 2021. The Supervisory Board thanked Dr. Schulte, who contributed to the Company as a member of the Executive Board for 19 years, for his long-standing service to AIXTRON SE and the trustful cooperation.

At the meeting on **May 18, 2021**, the Executive Board explained the year-to-date business performance and the planning for the 2021 Annual General Meeting, which was to be held virtually once again for the protection of all participants. In addition, the Supervisory Board addressed in detail the strategy and development roadmap in the power electronics technology segment based on GaN and SiC materials. It was outlined that the majority of power electronics manufacturers and also automotive equipment suppliers are working intensively on SiC technology. It was also discussed how the resulting market opportunities were to be addressed. With regard to the GaN-based power electronics technology segment, the expected market development and the AIXTRON technology and product roadmap were discussed. In addition, the status of the restructuring of the APEVA companies was presented.

At the ordinary meeting on **September 22, 2021**, the Executive Board reported on the business development in the first half of the year and provided an outlook for the second half of the fiscal year 2021. The Supervisory Board was updated on the strategy and development planning in the optoelectronics technology segment. The industry dynamics in the laser and LED segments were presented in detail and a comprehensive overview of the current development in the future segment Micro LED was given. In addition, the Executive Board provided information on the status of various strategy projects and gave an update on the restructuring of the APEVA companies.

On **December 15, 2021**, the Supervisory Board of AIXTRON SE held its last ordinary meeting of the year. The budget for 2022 presented by the Executive Board was discussed in detail and approved. The 2022 budget includes, among other things, the detailed revenue, earnings, financial and investment planning as well as the planned personnel development of the AIXTRON Group. Furthermore, the Supervisory Board discussed the agenda for the next Annual General Meeting on May 25, 2022. As in the previous year, this Annual General Meeting is to be held virtually. As part of the annual efficiency review, the Supervisory Board's activities were assessed using a comprehensive questionnaire and specific areas were identified where work can be done even more effectively.

Committees

The Supervisory Board has formed four committees: an Audit Committee, a Capital Markets Committee, a Nomination Committee, and a Remuneration Committee. The committees prepare resolutions and issues to be dealt with in the plenary sessions of the Supervisory Board.

The Audit Committee deals with the monitoring of accounting, the accounting process, corporate governance & compliance, the effectiveness of the internal control system, the risk management system, the internal audit system, the audit of the financial statements as well as assessing the quality of the audit. The Chairwoman of the Audit Committee, Prof. Dr. Anna Weber, has expertise in the areas of accounting and auditing (Section 107 (4), Section 100 (5) of the German Stock Corporation Act (AktG)) as well as special knowledge and experience in the application of internal control procedures.

In the year under review, the Supervisory Board commissioned Deloitte GmbH Wirtschaftsprüfungsgesellschaft, as proposed by the Audit Committee, with the audit of the annual and consolidated financial statements as well as the combined management report of AIXTRON SE as of December 31, 2021, the audit of the Company's early risk detection system within the meaning of Section 91 (2) AktG, the preparation of a "Management Letter", the findings pursuant to Section 7.2.3 of the German Corporate Governance Code and, pursuant to 111 (2) AktG, with the content review of the separate Group non-financial report to be prepared for 2021. In addition, the key audit matters (KAM) to be mentioned in the auditor's report on the AIXTRON Annual and Consolidated Financial Statements 2021 were discussed with the auditor.

The **Audit Committee** met eight times in 2021 (February 22, February 23, May 18, June 8, September 21, September 29, November 10, December 14). The significantly higher number of meetings compared to the previous year is due to the complex tendering process of the audit for fiscal year 2022. All members of the Audit Committee attended the meetings in person or by video link. All resolutions were passed unanimously. For the quarterly financial statements as of March 31, 2021, June 30, 2021, and September 30, 2021, the Audit Committee held discussions with the auditors and accounting representatives in each case and discussed the publication of the quarterly figures in detail with the Executive Board.

In addition to the above-mentioned tasks and the quarterly accounting issues, the Audit Committee dealt with the following special topics, among others:

- Declaration of independence and ongoing monitoring of the auditor's independence
- Tender for the audit of the financial statements for fiscal year 2022
- Non-financial Group report (Sustainability Report), in particular implementation of the requirements of the EU Taxonomy Directive
- Implementation of the requirements under the Financial Market Integrity Strengthening Act (Finanzmarktintegritätsstärkungsgesetz- FISG)
- Risk management, in particular implementation of the requirements from the new version of the auditing standard IDW PS 340 revised
- Internal (accounting-related) control system
- Internal audits 2021 and audit plan for the following year
- Compliance, esp. compliance training plan for 2021
- Information security, esp. focus topics in 2021
- Tax audits, esp. at AIXTRON SE
- Assessment of the quality of the audit of the financial statements

The **Capital Market Committee** is concerned with the evaluation of activities with potential capital market relevance. It consists of two members. No meetings were held in 2021.

The **Nomination Committee** consists of three members and makes appropriate proposals to the full Supervisory Board in the event of new appointments to the corporate bodies. In doing so, it also considers the targets for the composition of the corporate bodies.

In 2021, the Nomination Committee met three times, on September 21, October 19 and November 5. These meetings, the majority of which were held by telephone, were attended by all members of the Nomination Committee and invited guests. At the meeting of the Nomination Committee held on September 21, 2021, Mr. van Hout was elected Chairman. The meetings dealt primarily with issues relating to the appointment of Supervisory Board members at the 2022 Annual General Meeting.

In the past fiscal year, issues relating to the **Remuneration Committee** were dealt with at the meetings of the Nomination Committee, as the members of both committees are identical. The Remuneration Committee dealt mainly with issues relating to the remuneration of the members of the Executive Board, in particular its variable short- and long-term remuneration components.

Corporate Governance and Declaration of Conformity

The Supervisory Board continuously monitors the development of corporate governance standards and prepares a joint corporate governance report together with the Executive Board. The Supervisory Board will continue to support the Executive Board in its efforts to fully comply with the recommendations of the German Corporate Governance Code.

In the current **Declaration of Conformity** pursuant to Section 161 of the German Stock Corporation Act (AktG) dated February 2022, full compliance with the recommendations of the German Corporate Governance Code is declared, except for the deviation explained.

No conflicts of interest involving members of the Supervisory Board or Executive Board were reported in the fiscal year.

Audit and Annual Financial Statements

Pursuant to the resolution of the general shareholders meeting on May 19, 2021, the Supervisory Board commissioned Deloitte GmbH Wirtschaftsprüfungsgesellschaft, Düsseldorf, with the audit of the annual financial statements and the consolidated financial statements as well as the combined management report of AIXTRON SE for fiscal year 2021.

The **audits also covered** the measures taken by the Executive Board to identify risks at an early stage that could jeopardize the success and continued existence of the Company, as well as the lawful, proper, and appropriate reporting of non-financial information in the Sustainability Report for 2021. It was also agreed that the auditor must inform the Supervisory Board or make a note in the audit report if, during the performance of the audit, it ascertains facts that show a misstatement in the Declaration of Conformity issued by the Executive Board and Supervisory Board in accordance with Section 161 of the German Stock Corporation Act (AktG). As in previous years, such a determination was not necessary for the 2021 fiscal year.

The annual financial statements and the combined management report of AIXTRON SE and the AIXTRON Group as of December 31, 2021, were prepared in accordance with the rules of the German Commercial Code (HGB), the consolidated financial statements and the group management report as of December 31, 2021, were prepared in accordance with Section 315e HGB on the basis of the International Financial Reporting Standards IFRS. The independent auditing Company Deloitte GmbH Wirtschaftsprüfungsgesellschaft audited both the annual financial statements and the consolidated financial statements and combined management report prepared by AIXTRON SE for fiscal year 2021 and reviewed the separate Group non-financial report. The financial statements including the combined management report were issued with an unqualified audit opinion. The non-financial consolidated report received the opinion of an audit to obtain limited assurance. The auditors found that the combined management report of the Company and the Group accurately presents the current business and future development of the Company and the Group. The audit of the financial statements of AIXTRON SE in fiscal year 2021 by Deloitte GmbH Wirtschaftsprüfungsgesellschaft was performed by the audit team with the lead auditor Mr. André Bedenbecker.

The financial statement documents (annual financial statements of AIXTRON SE and consolidated financial statements as of December 31, 2021, as well as the combined management report of AIXTRON SE and the Group), the separate Group non-financial report as well as the auditor's reports were submitted to the Audit Committee and the Supervisory Board in a timely manner. These documents were reviewed in detail by us. In the meeting of the Audit Committee and the full Supervisory Board on February 23, 2022, both the annual financial statements of AIXTRON SE and the consolidated financial statements as well as the combined management report and the Group non-financial report were discussed and debated in detail, considering the audit reports of the auditor. The auditor, who attended both the Audit Committee meeting and the Supervisory Board meeting, reported on the main results of its audit, which also included the internal control and risk management system regarding the accounting process, and was available to the Audit Committee and the Supervisory Board, respectively, for any additional questions and information.

The results of our own review did not give rise to any objections either to the Group non-financial report or to the annual financial statements, the consolidated financial statements and the combined management report. The combined management report is consistent with our own assessment of the situation of the Company and the Group. We concurred with the auditor's findings, with which we fully agreed in terms of content and **approved** the annual financial statements and the consolidated financial statements as well as the combined management report prepared by the Executive Board, as well as the Group non-financial report of the Company for fiscal year 2021, by resolution dated February 23, 2022. The annual financial statements of AIXTRON SE were thus **formally adopted**.

Note of thanks from the Supervisory Board

On behalf of the Supervisory Board, I would like to thank the members of the Executive Board and all employees of the AIXTRON Group for their extraordinary dedication and hard work in fiscal year 2021, which was characterized by immense growth of the Company and dealing with the difficulties caused by the COVID-19 pandemic. The entire Supervisory Board would also like to thank the employee representatives for their constructive cooperation with the Company's executive bodies in this successful and challenging year.

Herzogenrath, February 2022

Kim Schindelhauer
Chairman of the Supervisory Board

THE AIXTRON SHARE

The AIXTRON share is listed in the Prime Standard of the Frankfurt Stock Exchange and is included in the two benchmark indices MDAX and TecDAX of Deutsche Börse AG. According to the index ranking of Deutsche Börse in terms of market capitalization as of December 31, 2021, the AIXTRON share is ranked 42nd in the MDAX, which now comprises 50 stocks since the index reform in September (December 2020: 57th place among 60 stocks). As the transaction volume is no longer a relevant criterion since the index reform, no ranking is calculated for it anymore. Among the 30 TecDAX members, AIXTRON's shares ranked 17th (2020: 22nd) in terms of market capitalization for the year ended December 31, 2021.

In addition to traditional trading venues such as XETRA and the German regional stock exchanges, AIXTRON shares are also traded to a not inconsiderable extent on alternative trading platforms such as Tradegate, Quotrix and Chi-X Europe.

AIXTRON Share Price Development and Trading Volumes during 2021

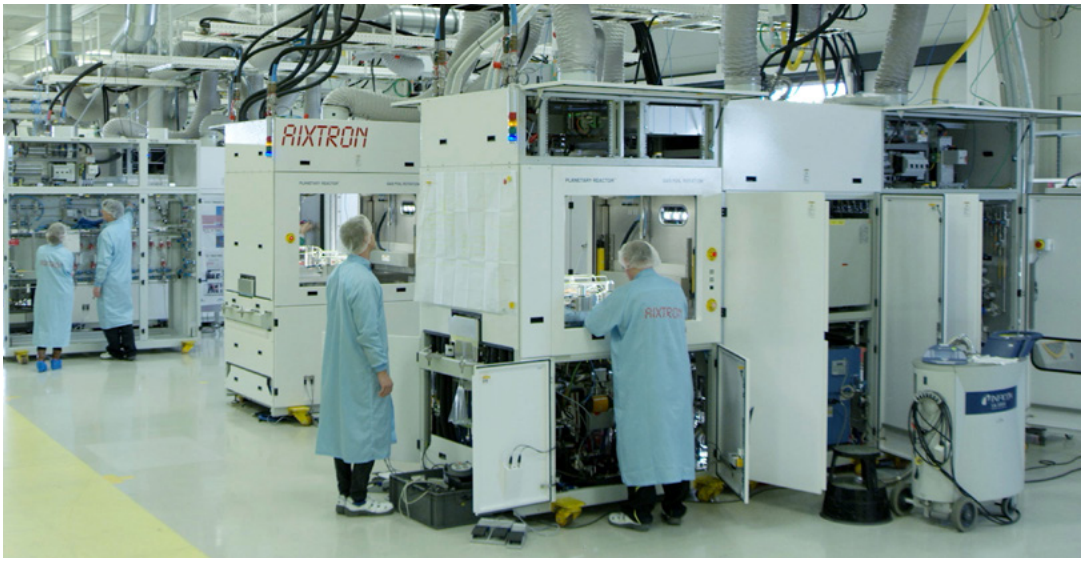
AIXTRON Share: High Volatility and Significant Gains

The trading year 2021 was strongly characterized by the further evolution of the COVID-19 pandemic, relief about the available vaccines and the recovery of the global economy from the strong recession of the previous year. Accordingly, the upswing in share prices on the global stock markets continued in the first half of 2021. Due to increasing concerns about inflation, interest rates and pandemic-related disruptions in supply chains, material shortages and sharply rising commodity prices, the stock market environment deteriorated in the beginning of the second half of the year, so that some of the gains were lost again by the first weeks of October. An encouraging reporting season, growing clarity about the further monetary policy course of important central banks and hopes for a strong economy in 2022 then provided new impetus for share prices. This was interrupted by the emergence of the fast spreading Omicron variant of the COVID-19 virus in November. Reports of an often less severe course of the Omicron disease and thus the prospect of a lower economic burden caused the stock markets to rise again by the end of the year. In total, despite all the uncertainties, the stock market year 2021 was quite pleasing on many stock exchanges, with some significant price gains.

Supported by the increasing return to economic normality and by fiscal policy measures, Germany's leading index **DAX** and the more cyclical sectors within it, initially performed much more stable than the highly valued, more interest-sensitive technology stocks. By contrast, both the enlargement of the DAX and the German Federal Parliament (Bundestag) election had only a minor impact on German equities. In the second half of the year, inflation and supply bottlenecks weighed only temporarily on share prices in Germany, too, so that an optimistic underlying mood prevailed here at the end of the year. The DAX therefore ended the year at 15,885 points, up 15.8%. Despite the implemented reforms, the DAX is still significantly dominated by cyclical stocks. In contrast, the **MDAX**, which also includes the AIXTRON share, is much more heavily populated with technology stocks. The clearly different development of cyclical stocks and technology stocks was accordingly also reflected in the MDAX. Under the impression of sharply rising bond yields, which particularly affected technology stocks, a large performance gap opened up between the DAX and the MDAX until mid-May. However, with increasing clarity about the future interest rate policy, the MDAX subsequently closed this gap in the further course of the year. Particularly in the second half of the year, stock market performance was strongly driven by technology stocks. Overall, the index slightly underperformed the DAX with a gain of 14.1%. The **TecDAX**, almost half of which is made up of MDAX stocks, showed a very similar development. The pure technology focus of the index caused even greater fluctuations than in the more traditional indices. Supported by the general strength of technology stocks at the end of the year, the TecDAX thus significantly outperformed the DAX and MDAX with a full-year gain of 22.0%.

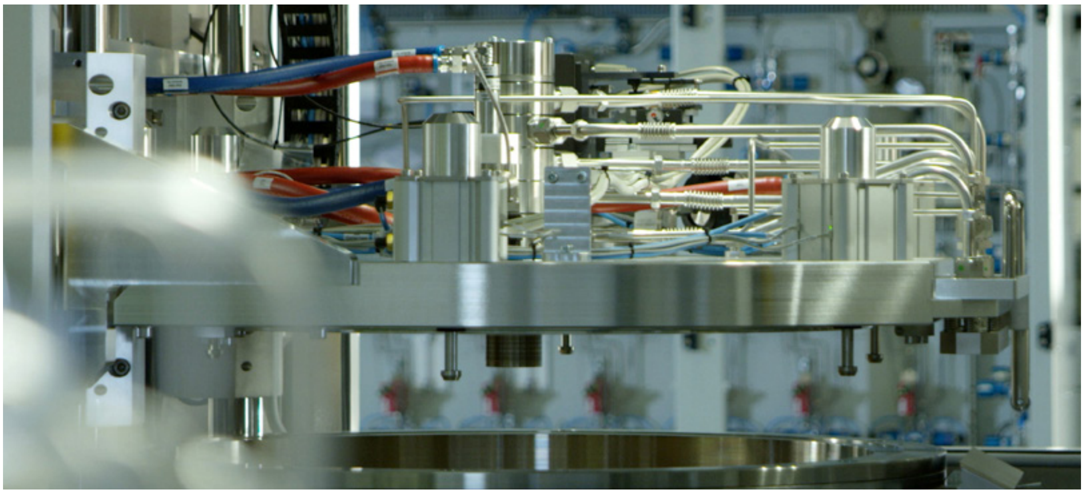
The **AIXTRON share** benefited from a very successful business performance and outperformed the market as a whole in the generally positive market environment at the beginning of the year, but was repeatedly affected by a downward pull of volatile technology stocks. Due to the high valuation levels reached in the meantime, technology stocks in particular reacted highly sensitive to the development of the pandemic, the inflation as well as interest rate hikes becoming increasingly likely. The AIXTRON share was not immune to this development and thus lost a large part of its initial price gains.

After a slow start to the new trading year, which also included the **year low** of EUR 14.27 on January 7, the share benefited from strong results of the semiconductor industry as well as from positive analyst comments, which stated that massive investments in MOCVD equipment were imminent. Thus, the AIXTRON share reached a first interim high in mid-February. The full year 2020 figures and a strong outlook for 2021 also gave the share further impetus. Renewed pandemic concerns due to the increasing spread of the Delta variant temporarily impacted the share price in March. However, on April 1, it reached an interim high of EUR 19.72, already up 38% after the first quarter.



Following a consolidation phase, the results for the first quarter of 2021 caused the share to fall significantly at the end of April. Market participants pointed out that the first quarter had not been satisfactory, as the market was expecting higher results. In addition, the setback in the OLED project of the subsidiary APEVA had caused disappointment. The share fell back to EUR 15.13 by May 12 but started a slight recovery in the run-up to the annual general meeting, which decided to distribute a dividend again for the first time in several years. The share received a significant boost on June 9 from a raised guidance as a result of stronger customer demand. Within two days, the share gained more than 25% and reached a new interim high of EUR 23.37 on June 29.

After a further consolidation phase in an unsteady market environment in July, where even the expected good half-year figures did not have a large price effect, the share resumed its upward trend in August. Persistently strong chip demand underlined the need for capacity expansion and thus the positive environment also for demand of AIXTRON equipment. As a result, the share price reached its **year high** of EUR 26.06 on August 30, up more than 80% year-on-year. Nevertheless, the AIXTRON share was affected by the weaker overall market and the deteriorating environment in particular for technology stocks. Investors realized some of their gains, causing the share price to fall back towards EUR 20.00.



At the beginning of the fourth quarter, the share price initially moved in a range between EUR 20 and 22. Even the once again strong quarterly figures did not provide impetus for the share price on November 4. Instead, investors were concerned about a possible slowdown of customer demand momentum in 2022, causing the share to fall by as much as 5%. In addition to the general downward trend caused by rapidly rising COVID-19 infections, concerns about inflation, and a sector rotation from technology stocks to value stocks, renewed concerns about weakening demand in AIXTRON's core markets resulted in further significant share price declines on November 24, bringing the share price down to EUR 16.34 by mid-December. With positive news from the semiconductor industry, sentiment then changed again, resulting in a recovery of the share price to some extent by the end of the year.

The AIXTRON share ended the trading year 2021 on December 30 with a gain of 25% at a price of EUR 17.87, corresponding to a market capitalization of EUR 2,024.5 million. The benchmark indices MDAX and TecDAX increased by 14% from 30,796 points to 35,123 points and by 22% from 3,213 points to 3,920 points, respectively, in the course of 2021.

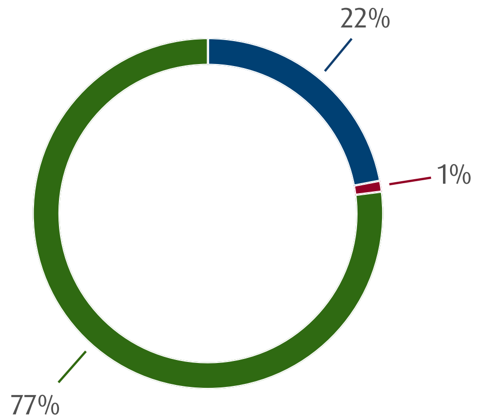
Broadly Diversified Shareholder Structure

As of December 31, 2021, approximately 22% of AIXTRON shares were held by private individuals (2020: 20%), most of whom are domiciled in Germany. Approximately 77% of AIXTRON's outstanding shares were held by institutional investors (2020: 79%). The majority of institutional investors were located in North America (33%), followed by United Kingdom and Ireland (24%) as well as Germany (19%). The remaining investors came from other parts of Europe and the world. According to voting rights notifications received by the end of 2021, Société Générale was our largest shareholder, holding more than 5% of AIXTRON shares, followed by T. Rowe Price International, Artisan Partners, Invesco, and Citigroup, each holding 5% of AIXTRON shares in their funds. 99% of the shares were in free float as defined by Deutsche Börse and approximately 1% of AIXTRON's shares were held by the Company.

According to the voting rights notifications and public disclosures pursuant to Section 33 para. 1 WpHG, the following institutional investors held more than 3% of AIXTRON shares at the end of 2021:

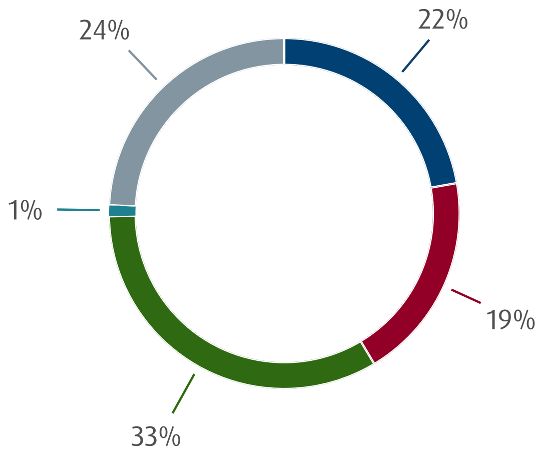
- Société Générale S.A., Paris, France, 5.2%
- T. Rowe Price International Funds, Inc., Baltimore, Maryland, USA, 5.0%
- Artisan Partners Asset Management Inc., Wilmington, Delaware, USA, 5.0%
- AIM International Mutual Funds – Invesco International Mutual Funds, Wilmington, Delaware, USA, 5.0%
- Citigroup, Inc., Wilmington, Delaware, USA, 5.0%
- Ministry of Finance on behalf of the State of Norway, Oslo, Norway, 4.9%
- Baillie Gifford & Co., Edinburgh, United Kingdom, 4.9%
- Goldman Sachs Group, Inc., Wilmington, Delaware, USA, 4.4%
- Invesco Ltd., Hamilton, Bermuda, 4.3%
- BlackRock, Inc., Wilmington, Delaware, USA, 3.7%
- Argonaut Capital Partners LLP, Edinburgh, United Kingdom, 3.5%
- Varma Mutual Pension Insurance Company, Helsinki, Finland, 3.1%

Shareholder Structure



■ Private Shareholders (22%)
■ AIXTRON Treasury / Management (1%)
■ Institutional Investors (77%)

Regional breakdown of the free float



■ Continental Europe (22%)
■ Germany (19%) | ■ North America (33%)
■ Great Britain & Ireland (24%)
■ Rest of the World (1%)

Research-Coverage

During fiscal year 2021, a total of twelve international banks and brokerage houses (2020: eleven) regularly published equity research reports on AIXTRON and the development of the semiconductor industry. Liberum and Independent Research discontinued the coverage of the AIXTRON share last year. Morgan Stanley initiated coverage of AIXTRON in December 2021, however, discontinued coverage again due to the departure of the key analyst in February 2022. Of the ten financial analysts covering our shares at year-end 2021, six issued a buy recommendation, another three recommended holding the AIXTRON share, and one analyst rated the stock a sell. The average target price at the end of December 2021 was EUR 23.55 (2020: EUR 12.52).

AIXTRON shares are currently being covered by the following financial analysts:

Institut	Analyst	Location
Alster Research	Oliver Wojahn	Hamburg
Barclays Capital	Keagan Bryce-Borthwick	London
Berenberg	Charlotte Friedrichs	London
Deutsche Bank	Uwe Schupp	Frankfurt
DZ Bank	Armin Kremser	Frankfurt
Exane BNP Paribas	David O'Connor	San Francisco
Stifel (MainFirst)	Jürgen Wagner	Frankfurt
Oddo BHF	Stéphane Houri	Paris
Warburg Research	Malte Schaumann	Hamburg

Our Investor Relations Activities

Transparency and openness in a continuous dialogue with our shareholders and capital market participants are our claim. Our investor relations work is aimed at strengthening confidence in our shares in the long term and achieving a fair valuation on the capital market. To this end, we provide our shareholders and the capital market with accurate, timely and relevant information about the AIXTRON Group's business and our market environment. In addition, AIXTRON is committed to complying with the principles of good corporate governance.

In individual or group meetings at investor roadshows and conferences our management and investor relations team discussed with national and international investors and financial analysts the AIXTRON Group's business strategy and development as well as industry and market trends. Due to the ongoing COVID-19 pandemic, the majority of roadshows and conferences in 2021 were again held exclusively virtually or in hybrid form.

The ongoing pandemic-related shift of investor relations activities to virtual platforms did not affect AIXTRON's intensively cultivated dialogue with the international financial community. In fact, even more virtual investor and analyst meetings were held in 2021 than in the previous year. The AIXTRON Executive Board and Investor Relations team communicated with a total of over 530 financial market participants worldwide in fiscal year 2021. More than 250 investor and analyst meetings took place in the form of video or telephone conferences, telephone calls, as well as occasional physical meetings.

Due to the continuing contact restrictions in 2021 to counter the COVID-19 pandemic, the General Meeting of AIXTRON SE was again held in a purely virtual form on May 19, 2021. The Annual General Meeting, which was streamed completely live on the internet for shareholders, was followed online by more than 500 shareholders and interested persons. 63% of the share capital was represented. On this occasion, the Executive Board provided a comprehensive overview of the results for the 2020 financial year, the first quarter of 2021, and the Group's technologies, and answered in detail the shareholders' questions submitted ahead of the Annual General Meeting.

CORPORATE GOVERNANCE

Declaration of Corporate Governance

AIXTRON is committed to the principles of transparent, responsible corporate governance aimed at creating sustainable value. Through appropriate management and supervision of the Company, we - the Executive Board and the Supervisory Board - aim to underpin the trust placed in us by our shareholders, the financial markets, our customers, business partners, employees and the general public. We are convinced that good corporate governance as well as the sustainable and responsible actions of our employees is an essential basis for the success of our Company.

The declaration of corporate governance in accordance with the German Commercial Code (HGB) as well as the current joint declaration of conformity by the Executive Board and the Supervisory Board in accordance with Section 161 of the German Stock Corporation Act (AktG) are published in the Annual Report and on the AIXTRON website in German and English language.

Declaration of Conformity

The German Corporate Governance Code was revised on December 16, 2019 and became the basis for the Declaration of Conformity upon publication in the Federal Gazette on March 20, 2020 ("DCGK 2020"). The Executive Board and the Supervisory Board of AIXTRON SE declare that AIXTRON SE has complied with the recommendations of the DCGK 2020 and will continue to comply with them in the future, in each case with the following exception:

Consideration of the Chairmanship and Deputy Chairmanship of the Supervisory Board as well as the Chairmanship and Membership of Committees in Supervisory Board Compensation (G.17 DCGK 2020)

According to G.17 DCGK 2020, Supervisory Board compensation shall take into account the Chair and Deputy Chair of the Supervisory Board as well as the Chair and membership of committees. The Supervisory Board compensation resolved by the Annual General Meeting on May 16, 2018, only takes into account the chairmanship and deputy chairmanship of the Supervisory Board and the chairmanship of the Audit Committee in addition to membership of the Supervisory Board.

Further consideration of the deputy chairmanship of the Audit Committee and a chairmanship and deputy chairmanship of the other committees is not considered appropriate, as the time and effort involved in these activities is already adequately covered by the Supervisory Board compensation.

Herzogenrath, February 23, 2022
AIXTRON SE

The Executive Board of AIXTRON SE

Dr. Felix Grawert
Chairman

Dr. Christian Danninger
Member

Dr. Jochen Linck
Member

For the Supervisory Board of AIXTRON SE

Kim Schindelhauer
Chairman of the Supervisory Board

Information on Corporate Governance Practices

AIXTRON SE has defined a **Code of Ethics** which applies to Executive Board members as well as Group-wide managers and key employees from the area of finance. The aim of this Code is to promote upright and ethical conduct, including the ethical handling of conflicts of interest, the timely disclosure of complete, accurate and clear quarterly and annual reports, compliance with prevailing laws, rules and regulations and the immediate internal reporting of breaches of the Code where necessary and to ensure accountability for compliance with the Code.

In addition, a **Compliance Code of Conduct** applies to the Executive and Supervisory Boards, to the senior management team as well as to all employees group-wide, holding them accountable for conscientious conduct in conformity with the law. Among the topics addressed, this Code covers the following issues: responsibility and respect towards people and the environment, compliance with the legal conditions, legal and ethical conduct by each individual employee, loyalty to the Company, fair and respectful treatment of fellow employees, rejection of any form of discrimination, dealing responsibly with corporate risks, acting in an environmentally responsible manner, security in all operating areas, working in a professional manner, reliability and fairness in all business relationships, compliance with guidelines on giving / accepting unfair advantages, dealing with insider information and the treatment of Company property. The full texts of the Compliance Code of Conduct can be downloaded from the AIXTRON website in the Investors / Corporate Governance section under “Code of Conduct”.

Furthermore, AIXTRON issued a group-wide **Compliance Manual** which applies to all members of the Executive and Supervisory Boards as well as senior management and which further sets out the principles of the of the Compliance Code of Conduct. The Compliance Manual provides detailed explanations on the compliance organization at AIXTRON, the legal and regulatory requirements and on the resulting conduct requirements applicable to the Executive Board, Supervisory Board, senior management and employees. This Compliance Manual is regularly updated to reflect new / amended legal and regulatory requirements as well as company internal specifications, most recently in January 2022. The teaching of the contents is an elementary component of the Company-wide compliance training offer. Compliance training is mandatory group-wide for members of the senior management team as well as for all other employees of the Group. This is controlled and monitored by our Compliance Department.

In addition, every quarter the group-wide members of the senior management, as well as select key staff members declare in writing that the compliance requirements were observed in their area of responsibility. If the Compliance Manual has been updated, they also declare that they will take note of the updated version and follow and communicate its contents within their area of responsibility. In addition, management principles were defined for the Company’s senior managers which include what is required of senior managers when dealing with employees.

AIXTRON has a **whistleblower hotline**. Notifications of violations of legal, regulatory and internal company requirements can be sent confidentially to the Chairman of the Supervisory Board of AIXTRON SE via a specified e-mail address or in the form of a letter. The Chairman of the Supervisory Board decides together with the Compliance Department, depending on the subject matter and scope of the report, whether to involve other persons and / or bodies. In the event of proven violations or grievances, the involved persons / body will work out proposed solutions with the aim of a prompt remedy, including any necessary sanctions and improvements to the management and monitoring processes. Any reports or indication received will be treated discreetly, confidentially and anonymously by the persons / bodies involved. AIXTRON will not impose any reprisals against employees who report violations.

Furthermore, AIXTRON has established a **Vendor Code of Conduct**, which defines ethical, moral and legal standards related to the purchase and use of what are known as conflict minerals (gold, tantalum, tungsten, tin) within the AIXTRON supply chain. The key content of this code includes information on U.S. rules regarding the use of conflict minerals, the expectations placed on suppliers and the consequences in the event of non-compliance.

The Vendor Code of Conduct is summarized in the **Supplier Manual**, which can be found on the AIXTRON website under the menu item Company / Suppliers in the Supplier Management section.

Executive Board and Supervisory Board Operating Procedures as well as Composition and Mode of Operation of Committees

AIXTRON SE is a European stock company (Societas Europaea) and is subject not only to the German stock corporation law but also to the superordinate European SE regulations and the German SE Implementation Act. The Company has a dual management and control structure consisting of an Executive Board and a Supervisory Board.

The Executive Board is responsible for managing the Company and informs the Supervisory Board regularly, comprehensively and without delay about all relevant issues involving strategy, planning, business development, the risk situation, risk management and compliance.

The Supervisory Board appoints the Executive Board members and oversees and advises the Executive Board in its management duties. To perform certain transactions and measures specified by law, in the Articles of Association of AIXTRON SE or the Executive Board's by-laws, the Executive Board must obtain the prior approval of the Supervisory Board. The Executive Board is required to report to the Supervisory Board on the conclusion, amendment or termination of important agreements that do not require approval under the Articles of Association or the Executive Board's by-laws. The Executive Board is also required to notify the Supervisory Board of all material events, even those that do not require the approval of the Supervisory Board.

As in previous years, the Executive Board and the Supervisory Board worked closely together throughout 2021 for the benefit of the Company. The shared objective is to secure and expand AIXTRON's leading market positions in the long term in order to benefit from growing end markets.

No committees have been set up by AIXTRON SE's Executive Board.

The Supervisory Board of AIXTRON SE has established four committees, an Audit Committee, a Capital Market Committee, a Nomination Committee, and a Remuneration Committee. The Supervisory Board is authorized to establish additional committees from among its members.

The **Audit Committee** consists of a Chairwoman and two other members. As an independent member, the Chairwoman of the Audit Committee, Prof. Dr. Anna Weber, has expertise in the areas of accounting and auditing (Section 107 para. 4, Section 100 para. 5 AktG) and special knowledge and experience in the application of internal control procedures. The members are also familiar in their entirety with the sector in which AIXTRON is represented, which is partially due to their many years of experience. The Audit Committee deals in particular with the audit of the accounting, the monitoring of the accounting process, corporate governance & compliance, the effectiveness of the internal control system, the risk management system, the internal audit system. The Audit Committee also deals with the audit of the financial statements, the assessment of the quality of the audit, and the review of the sustainability report to be prepared by the Company. Furthermore, the Audit Committee submits to the full Supervisory Board a reasoned recommendation for the appointment of the auditor. This was done in November 2021 after the audit mandate for 2022 was retendered and a comprehensive selection process was conducted. The Audit Committee monitors the necessary independence of the auditor and the additional services provided by the auditor. Finally, it deals with the issuing of the audit mandate to the auditor, the determination of auditing focal points and the fee agreement. The committee chairwoman, Prof. Dr. Anna Weber, reports regularly to the Supervisory Board on the work of the Audit Committee.

For the purpose of evaluating, supporting and implementing projects with capital market relevance, a **Capital Market Committee** has existed since 2014, consisting of two members, the Chairman of the Supervisory Board and another member of the Supervisory Board.

The **Nomination Committee**, which consists of three members of the Supervisory Board, makes election proposals to the full Supervisory Board in the event of new appointments to executive bodies and discusses issues relating to the replacement of members of the Supervisory Board.

In addition, a **Remuneration Committee** has been established, consisting of the same members as the Nomination Committee. This committee deals with the application of the compensation system in accordance with the DCGK.

Further details on the work of the Executive Board, Supervisory Board and committees during fiscal year 2021 can be found in the Report of the Supervisory Board, which is part of the Annual Report and can be downloaded from the AIXTRON website. Full details of the composition of the committees can be found in the section “Supervisory Board and its composition”.

Executive Board and its composition

According to Article 8 of AIXTRON SE’s Articles of Association, the Executive Board consists of two or more people. The Supervisory Board determines the precise number of Executive Board members. It also decides whether there should be a Chairman and whether deputy members or a Deputy Chairman should be appointed.

Following the retirement of Dr. Schulte from the Executive Board of AIXTRON SE as of March 31, 2021, the Executive Board consists of three persons at the time of reporting:

Executive Board
(as of December 31, 2021)

Name	Position	Since	End of Term
Dr. Felix Grawert	Chairman	August 14, 2017	August 13, 2025
Dr. Christian Danninger	Member	May 1, 2021	April 30, 2024
Dr. Jochen Linck	Member	October 1, 2020	September 30, 2023

The appointment of Executive Board member Dr. Bernd Schulte regularly ended at the close of March 31, 2021. Dr. Bernd Schulte retired on April 1, 2021. The Supervisory Board appointed Dr. Christian Danninger as a new member of the Executive Board in the function of Chief Financial Officer (CFO) effective May 1, 2021. The appointment was made for three years.

Furthermore, the Supervisory Board appointed Executive Board member Dr. Felix Grawert as Chairman of the Executive Board effective April 1, 2021.

Notwithstanding the Executive Board’s overall legal responsibility and the obligation of the Executive Board members to collaborate closely and in confidence with their colleagues, the assigned responsibilities of the individual members of the Executive Board are as follows in accordance with the currently valid **business distribution plan** as of December 15, 2021:

The **Chairman of the Executive Board, Dr. Grawert**, coordinates the work of the Executive Board and is also responsible for Strategic Planning, Marketing, Sales, Customer Service, and Innovation within the AIXTRON Group.

Executive Board member Dr. Danninger is responsible for the Group's Finance and Reporting, Human Resources, Investor Relations & Communications, ESG (Environment, Social and Governance), Corporate Governance, Compliance & Risk Management, and Information Security and Legal departments.

The Executive Board member Dr. Linck has Group-wide responsibility for Procurement, Product Cost Management, Manufacturing and Logistics, Quality Management, IT, Facility Management, and Research and Development.

With the approval of the Supervisory Board, the Executive Board has adopted Rules of Procedure which are regularly reviewed for their appropriateness and topicality. Among other things, they contain a list of matters of fundamental or significant importance on which the Executive Board must formally resolve. This concerns, for example, decisions on: the Company‘s strategies, business plans and budgets; material changes to the Company and Group organization; the commencement or cessation of the Company‘s activities; the acquisition and sale of land or land rights; the conclusion, amendment and termination of corporate or significant license agreements; the award of major external consulting and research contracts; fundamental issues relating to human resources and personnel policy; determining the principles for representation in business organizations and associations; appointments to the management and supervisory bodies of subsidiaries and associated companies; important publications and information to the public outside the regular publicity; initiating lawsuits and legal disputes; providing collateral and assuming guarantees.

The Rules of Procedure for the Executive Board and the Articles of Association each contain a catalog of significant transactions and measures that additionally require the prior approval of the Supervisory Board. The transactions and measures requiring approval under the Articles of Association or the Rules of Procedure include, for example, decisions on the establishment or sale of business premises, the acquisition or sale of land, the commencement or discontinuation of business activities or the granting or taking out of loans.

In accordance with the Rules of Procedure, meetings of the Executive Board take place at least twice a month and when the well-being of the Company so requires. Meetings of the Executive Board are convened and chaired by the Chairman of the Executive Board. Each member of the Executive Board can arrange an additional meeting on a specific topic at any time. If the Chairman of the Executive Board is unable to attend, the meeting shall be chaired by the member of the Executive Board designated for this purpose by the Chairman of the Executive Board or by the oldest member of the Executive Board. The Executive Board constitutes a quorum if all members have been invited and more than half of its members are present at the time the resolution is adopted, whereby members of the Executive Board connected by telephone or video conference are deemed to be present. Unless otherwise provided by law, the Articles of Association or the Rules of Procedure, the Executive Board shall decide by a simple majority of the votes cast. In the case of a tie, the Chairman of the Executive Board shall cast the deciding vote.

Each member of the Executive Board will disclose conflicts of interest to the Supervisory Board without delay and inform the other members of the Executive Board accordingly. Members of the Executive Board may only take on secondary activities, in particular Supervisory Board mandates outside the company, with the approval of the Supervisory Board.

Long-term succession planning for the Executive Board and age limit for the Executive Board

AIXTRON is a global company operating in a very dynamic and technologically demanding market environment. Therefore, it is of strategic importance for AIXTRON to have a competent Executive Board and to appoint suitable candidates to the Executive Board. After the complete change of generation in the Executive Board, the Supervisory Board will also pursue a long-term succession planning. As part of the succession planning, the Supervisory Board and the Executive Board will also discuss suitable internal candidates to be appointed to the Executive Board. The age limit for the Executive Board is 65 years and is set out in the Executive Board's Rules of Procedure.

Supervisory Board and its composition

Pursuant to Article 11 of AIXTRON SE's Articles of Association, the Supervisory Board consists of five members. The members of the Supervisory Board are generally appointed until the end of the Annual General Meeting in which the shareholders represented ratify the approval of the Supervisory Board's activities for the fourth fiscal year after the term of office begins, whereby the fiscal year in which the appointment was made is not included.

The Supervisory Board elects a Chairman and a Deputy Chairman from among its members. The Supervisory Board Chairman or – if he is unable to do so – his Deputy convenes and conducts the Supervisory Board meetings.

The Supervisory Board has adopted Rules of Procedure. They govern the tasks, rights and obligations of the Supervisory Board, the organization of meetings and resolutions and the formation of committees. The Rules of Procedure of the Supervisory Board were last revised in fiscal year 2021. The Audit Committee has separate Rules of Procedure established by the

Supervisory Board.

The Chairman of the Supervisory Board is generally available for discussions with investors but only to the extent that such discussions take place within a reasonable framework and the topics fall within the sole competence of the Supervisory Board. No discussions with the Chairman of the Supervisory Board were requested in the past fiscal year. Accordingly, no such discussions took place.

Currently, the composition of the Supervisory Board in accordance with the Articles of Association and as determined by the General Meeting is as follows:

Composition of the Supervisory Board

(as of December 31, 2021)

Name	Position	Since	End of Term
Kim Schindelhauer[1)2)3)4)5)]	Chairman of the Supervisory Board	2002	AGM 2022
Prof. Dr. Anna Weber[1)]	Chairwoman of the Audit Committee, independent financial expert	2019	AGM 2024
Prof. Dr. Andreas Biagosch[1)2)]		2013	AGM 2024
Prof. Dr. Petra Denk[3)4)]		2011	AGM 2024
Frits van Hout[3)4)]	Deputy chairman of the Supervisory Board Chairman of the Nomination Committee/Remuneration Committee	2019	AGM 2024

1) Member of the Audit Committee

2) Member of the Capital Market Committee

3) Member of the Nomination Committee

4) Member of the Remuneration Committee

5) Former AIXTRON Executive Board member

Composition of Committees

Audit Committee	Capital Market Committee	Nomination Committee	Remuneration Committee
Prof. Dr. Anna Weber (Chair)	Kim Schindelhauer	Frits van Hout (Chair)	Frits van Hout (Chair)
Kim Schindelhauer	Prof. Dr. Andreas Biagosch	Prof. Dr. Petra Denk	Prof. Dr. Petra Denk
Prof. Dr. Andreas Biagosch		Kim Schindelhauer	Kim Schindelhauer

Independence of Supervisory Board Members and cooperation between the Supervisory Board and the Executive Board

The Supervisory Board shall comprise what it considers to be a sufficient number of independent members (Recommendation C.6 DCGK 2020). Accordingly, the Supervisory Board has set itself the goal that more than half of its members shall be independent (recommendation C.7 DCGK 2020). AIXTRON considers Mr. Schindelhauer to be independent despite the period of time he has been a member of the Supervisory Board. During his time as Chairman of the Supervisory Board, Mr. Schindelhauer has always maintained a professional distance from the Company and the Executive Board and has always fulfilled his monitoring and advisory duties by applying an appropriate critical attitude (recommendation C.8 DCGK 2020).

As all members of the Supervisory Board, which consists exclusively of elected shareholder representatives, are therefore to be regarded as independent, this objective is also met or declared.

The Supervisory Board includes Mr. Schindelhauer, a former member of the Executive Board, whose term of office as a member of the Executive Board, however, was more than two years ago (see also C.7 DCGK 2020). The Supervisory Board therefore complies with recommendation C.11 of the DCGK 2020 that it should not include more than two former members of the Executive Board.

The Supervisory Board must include at least one member with expertise in the field of auditing and at least one other member with expertise in the field of accounting. These requirements are met by the two members Prof. Dr. Weber and Mr. Schindelhauer.

In the run-up to the Supervisory Board meeting in December 2021, the members of the Supervisory Board received the self-evaluation questionnaire prepared annually by the Chairman of the Supervisory Board. After evaluation of the questionnaire, the Supervisory Board determined that the Supervisory Board performs its activities effectively in accordance with recommendation D.13 of the DCGK 2020.

Further mandates of the members of the Executive Board and the Supervisory Board are listed in the notes to the consolidated financial statements in section 36 “Supervisory Board and Management Board”.

The Company did not enter into or carry out any material transactions with any related parties in the 2021 fiscal year.

The Audit Committee is chaired by Prof. Dr. Weber, an independent and expert member of the Supervisory Board in accordance with Recommendation D.4 DCGK 2020. She is not the same person as the Chairman of the Supervisory Board. In the persons of Prof. Dr. Weber and Mr. Schindelhauer, the Audit Committee includes one member with expertise in the field of auditing and one further member with expertise in the field of accounting.

Like the Audit Committee, the Supervisory Board holds four regular meetings per calendar year. Extraordinary Supervisory Board meetings as well as meetings of the Nomination Committee and the Capital Market Committee are convened as required.

At the request of the Chairman of the Supervisory Board or the Chairmen of the Committees, the Executive Board regularly attends the ordinary meetings (generally four times a year) of the Supervisory Board or individual committee meetings, reports in writing and orally on the individual agenda items and draft resolutions and answers the questions of the individual Supervisory Board members. Between meetings, all members of the Supervisory Board receive detailed quarterly reports from the Executive Board on the situation of the Company. In addition, the Chairman of the Supervisory Board or the Chairwoman of the Audit Committee are informed by the Executive Board about important developments and upcoming important decisions in telephone calls and personal discussions. In accordance with recommendation D.7 DCGK 2020, meetings are also held regularly without participation of the Executive Board.

As a rule, resolutions of the Supervisory Board and its committees are passed at the meetings. In justified exceptional cases, Supervisory Board members may also participate in a meeting of the Supervisory Board or a committee by telephone or video conference. The Supervisory Board and its committees shall each constitute a quorum if two thirds of its members participate in the adoption of the resolution (outside of meetings by means of a vote conducted in writing, by fax, by telephone or by e-mail or by a combination of these aforementioned communication media, provided that no member of the Supervisory Board objects to this procedure). Resolutions require a simple majority of the votes cast. In the event of a tie, the chairman of the meeting has the casting vote.

Each member of the Supervisory Board shall disclose to the Supervisory Board any conflicts of interest, in particular those that may arise as a result of a consultancy or directorship function with customers, suppliers, lenders or other third parties. Material and not only temporary conflicts of interest in the person of a member of the Supervisory Board result in that person having to resign from office.

Self-evaluation of the Supervisory Board

In fiscal year 2021, the Supervisory Board conducted an internal self-evaluation based on a questionnaire, taking into account AIXTRON-specific topics. The results were discussed by the Supervisory Board and confirmed that the cooperation both within the Supervisory Board and with the Executive Board was characterized by a high degree of trust and openness and was always professional and constructive. The Supervisory Board and its committees were also considered to be adequately informed and effective in their work. Hence there is no fundamental need for change.

Information on the equal representation of men and women as per Section 76 para. 4 and Section 111 para. 5 AktG

Pursuant to Sections 76 para. 4, 111 para. 5 of the German Stock Corporation Act (AktG), the Supervisory boards and Executive Boards of companies that are listed on the stock exchange or subject to co-determination must set target figures for the proportion of women on the Supervisory Boards, Executive Boards and the two management levels below the Executive Board. The DCGK reflects these regulations in principle 3 and principle 9 sentence 2 DCGK 2020 for the Executive Board and in recommendation C.1 sentence 2 DCGK 2020 for the Supervisory Board.

AIXTRON aims to increase both the proportion of women and the internationality of its employees and managers. In doing so, the Company is primarily committed to the professional and social qualification of all employees.

The **Supervisory Board** of AIXTRON SE had set the following **target figures for the proportion of women** to be reached by **31 December 2025**:

Level	Target per 31.12.2025	Target per 31.12.2021	Women's quota as of 31.12.2021	Determined by
Supervisory Board	20%	16.7%	40%	Supervisory Board
Executive Board	0%	0%	0%	Supervisory Board

Since the initial determination of the target figures for achievement by December 31, 2021, the Supervisory Board of AIXTRON SE has been reduced from six to five members. The five-member Supervisory Board includes two women, bringing the proportion of female Supervisory Board members to 40%. The current composition of the Executive Board is in line with the target set for the Executive Board.

The **Executive Board** of AIXTRON SE has set itself the goal of specifically promoting women in the Company. In line with this, the Executive Board has raised the **targets for the proportion of women** now to 10% for the first level below the Executive Board and to 20% for the second level below the Executive Board. These targets are to be achieved by **December 31, 2025**.

Level	Target per 31.12.2025	Target per 31.12.2021	Women's quota as of 31.12.2021	Determined by
1. tier management	10%	3%	4%	Executive Board
2. tier management	20%	17%	17%	Executive Board

In the year 2021, the Company has therefore achieved the targets set.

Following the successful appointment of vacant positions on the Executive Board, in which the Supervisory Board took the diversity concept into account and as part of which female candidates were also considered, the generational transition on the Executive Board has been completed. Based on the structure now in place, no changes in composition are planned, so the target for the proportion of women on the Executive Board valid until December 31, 2025, has been set consistently at 0%. The proportion of women on the Executive Board is taken into account as part of the long-term succession planning.

Diversity concept for Executive Board and Supervisory Board

Executive Board

As provided for by the DCGK 2020, AIXTRON has addressed diversity objectives ("diversity") in corporate governance (recommendations B.1 and C.1).

When proposing the appointment of new members to the Executive Board by the Nominating Committee, the Supervisory Board takes into account their personal and professional suitability, international experience and leadership quality, the age limit set for members of the Executive Board, and diversity, including aspects such as age, gender, and educational and professional background. The Executive Board should consist of members with different, complementary competence profiles as well as a sufficient age mix and possess different personalities.

In addition to the above-mentioned qualities, members of the Executive Board should, as far as possible, have different knowledge and experience as well as educational and professional backgrounds, both individually and in their entirety as a team. In view of the Company's international orientation, experience abroad is an advantage. In its search for suitable candidates to fill vacant positions on the Executive Board, the Supervisory Board took account of the diversity concept and, as part of this, also considered female candidates.

Supervisory Board

The Supervisory Board had set the target for the proportion of women on the Supervisory Board at 16.7% and the deadline for achieving this target on December 31, 2021. With Prof. Dr. Petra Denk and Prof. Dr. Anna Weber, two of the five members of the Supervisory Board are women currently (40%).

The targets for the compositions of the Supervisory Board are shown in detail below:

- When proposing candidates for election to the Supervisory Board, the Nomination Committee ensures that the Supervisory Board always includes members who, individually and collectively as a team, have the knowledge, skills and professional experience required to properly perform their duties. Furthermore, the members should be independent. In this way, the nomination committee contributes to increasing the efficiency and transparency of the selection process. As a general rule, Supervisory Boards should be elected for the longest period of time permitted by the statutes.

- AIXTRON is strongly export-oriented. Experience in AIXTRON's specific electronics and semiconductor markets is therefore a great advantage.
- As a general rule, an age limit of 70 years should be appropriate for Supervisory Board members upon retirement. New Supervisory Board members should be available to the Company for at least two election periods.
- It is desirable that the individual members of the Supervisory Board have the most diverse education, qualifications, expertise and international experience possible in order to have the knowledge, skills and professional experience necessary to properly perform their duties. Company- and product-oriented coverage with an understanding of the business model, the industry-specific features and the processes in the various corporate areas of business administration, accounting, auditing, corporate development, capital market, technology, equipment business, markets / distribution, semiconductor market etc. are advantageous.
- It is in the best interests of the company to utilize the potential of well-trained and motivated employees of different nationalities and genders. The Supervisory Board considers appropriate participation of women on the Supervisory Board to be very important, which is reflected in the current proportion of women on the Supervisory Board of 40%.
- In its opinion, the Supervisory Board should have a sufficient number of independent members, whereby a member of the Supervisory Board shall not be considered independent in particular if he or she has a business or personal relationship with the company, its executive bodies, a controlling shareholder or a company affiliated with the latter that could give rise to a material and not merely temporary conflict of interest.
- More than half of the Supervisory Board shall consist of independent members.
- No more than two former members of the Executive Board shall be members of the Supervisory Board.
- The members of the Supervisory Board shall not exercise directorships or similar positions or advisory tasks for important competitors of the enterprise.
- At least one member of the Supervisory Board must have expertise in the field of accounting and at least one other member of the Supervisory Board must have expertise in the field of auditing. These two members shall then also be members of the Audit Committee.
- Due to the increased demands on the professionalization of the Supervisory Board and in order to simultaneously ensure the greatest possible efficiency of the Supervisory Board's activities as in previous years, new Supervisory Board members should not hold more than five mandates in other listed companies or other companies if they have comparable requirements.

In addition to the goals set for its composition, the Supervisory Board has also drawn up a competence profile for the entire Board. In view of AIXTRON's business activities and the markets addressed by the Company, the Supervisory Board shall have competencies in the areas of technology, finance / accounting, capital markets, strategy and corporate governance. Furthermore, a grown network of contacts and many years of experience in the respective disciplines are advantageous.

The requirement for diversity within the Supervisory Board (recommendation C.1 sentence 2 DCGK 2020) is taken into account, among other things, as a result of the diverse competencies of the individual Supervisory Board members (with regard to areas such as finance, capital markets, M&A, and technology and markets).

The Executive Board and the Supervisory Board of AIXTRON SE are convinced that the composition of the Supervisory Board fully complies with its own objectives and competence profile as well as with the requirement of the DCGK for appropriate diversity and an appropriate number of independent Supervisory Board members.

Information on the remuneration of the Executive Board and Supervisory Board and on the remuneration system of the Executive Board

Detailed information on the structure and amount of remuneration paid to the individual Executive Board members in accordance with principle 25 DCGK 2020 and on the remuneration of the members of the Supervisory Board as well as an exact list of the outstanding Board stock options can be found in the **remuneration report** as part of the Group's consolidated management report.

The remuneration system pursuant to Section 87a (1) and (2) sentence 1 AktG approved by the 2020 Annual General Meeting pursuant to Section 113 (3) AktG with an approval rate of 90.3% is publicly available on the Company's website at Remuneration Policy. A remuneration report prepared in accordance with Section 162 of the German Stock Corporation Act (AktG) for the past fiscal year together with an auditors' report in accordance with Section 162 of the German Stock Corporation Act (AktG) is also available on the Company's website.

Shareholders and Annual General Meeting

As in 2020, the Annual General Meeting in the 2021 fiscal year was held in completely virtual form again on May 19, 2021, due to the COVID-19 pandemic and the associated contact restrictions. The invitation to the Annual General Meeting was published in due time in the German Federal Gazette (Bundesanzeiger) in accordance with the statutory requirements and contained, among other things, the agenda with the proposed resolutions of the administration or the Supervisory Board as well as the conditions for attending the Annual General Meeting and exercising voting rights. All reports and documents required by law were available on the AIXTRON website from the time the General Meeting was convened. Immediately after the Annual General Meeting, AIXTRON published the attendance and voting results on its website.

Six out of seven agenda items were put to the vote. All resolutions were passed with clear majorities, with slightly more than 63% of AIXTRON's share capital being represented at the Annual General Meeting (AGM).

Transparency

To ensure maximum transparency, AIXTRON regularly and promptly informs interested parties such as customers, suppliers, shareholders, shareholder associations, potential investors, financial analysts and the media of the Group's business developments. The internet is the primary communication channel used for this purpose.

Reports on the business situation and financial results of AIXTRON SE and the AIXTRON Group are made available in German and / or English, in the form of:

- The Annual Report with the Consolidated Financial Statements, the Combined Management Report and the Supervisory Board Report,
- The Financial Statements of AIXTRON SE, with the Combined Management Report,
- The non-financial Group Report (Sustainability Report),
- Interim financial reports,
- Quarterly conference calls for the press and analysts and respective transcripts,
- Company presentations,
- Publication of insider information, corporate and press releases.

The date of the Annual General Meeting or the publication dates of the financial reports are summarized in the Company's financial calendar on the AIXTRON website in the section Investors / events and dates. This calendar, as well as the reports, speech manuscripts, presentations, webcasts, and announcements listed above, can be freely viewed on the AIXTRON website for a certain period of time.

Accounting and Audit of the Annual Financial Statements

The quarterly reports as of 31 March, 30 June, 30 September and the consolidated financial statements as of 31 December 2021 were prepared in accordance with the International Financial Reporting Standards (IFRS). The separate financial statements of AIXTRON SE for fiscal year 2021 were prepared in accordance with the provisions of the German Commercial Code (HGB) and the German Stock Corporation Act (AktG).

The consolidated financial statements and the individual financial statements of AIXTRON SE were audited by the auditor and approved by the Supervisory Board. It was agreed with the auditors that the Chairman of the Supervisory Board or the Chair of the Audit Committee would be informed immediately of any reasons for exclusion or exemption or any inaccuracies in the Declaration of Conformity that arise during the audit. No such duties to inform were triggered in the year under review.

Remuneration Report

With the approval of the Annual General Meeting on May 20, 2020, a new compensation system ("new compensation system") for the Executive Board of AIXTRON SE was introduced. Since then, this has been applied to all new contracts of the Executive Board of the Company. For existing legacy contracts of the Executive Board, the previous compensation system approved by the regular general shareholders meeting on May 16, 2018 ("previous compensation system") continued to be applied. In the reporting year, the previous remuneration system was applied for the last time for Executive Board member Dr. Bernd Schulte until his retirement after March 31, 2021. A detailed description of the previous remuneration system is available in the Annual Report 2020.

The following remuneration report describes the main features of the new remuneration system and explains the amount and structure of the remuneration of the Executive Board as well as the remuneration of the Supervisory Board of AIXTRON SE for fiscal year 2021 in accordance with the articles of association. The remuneration of the individual members of the Executive Board and the Supervisory Board is disclosed individually in the remuneration report. The Renumeration Report complies with the disclosure requirements under German stock corporation law pursuant to Section 162 AktG. In addition, the remuneration report is based in particular on the recommendations of the German Corporate Governance Code (DCGK) and the requirements of the German Stock Corporation Act (AktG).

Priciples of the new remuneration system (applicable to new Executive Board contracts since May 20, 2020)

The new remuneration system of the Executive Board of AIXTRON SE introduced in fiscal year 2020 is in line with the content requirements of ARUG II and is based on the recommendations of the new German Corporate Governance Code (DCGK 2020) which came into force on March 20, 2020.

Scope of application in fiscal year 2021

The new remuneration system was applied to new Executive Board employment contracts in fiscal year 2021 as follows:

- Dr. Felix Grawert: from January 1, 2021 to December 31, 2021
- Dr. Christian Danninger: from May 1, 2021 to December 31, 2021
- Dr. Jochen Linck: from January 1, 2021 to December 31, 2021

Priciples of the new remuneration system

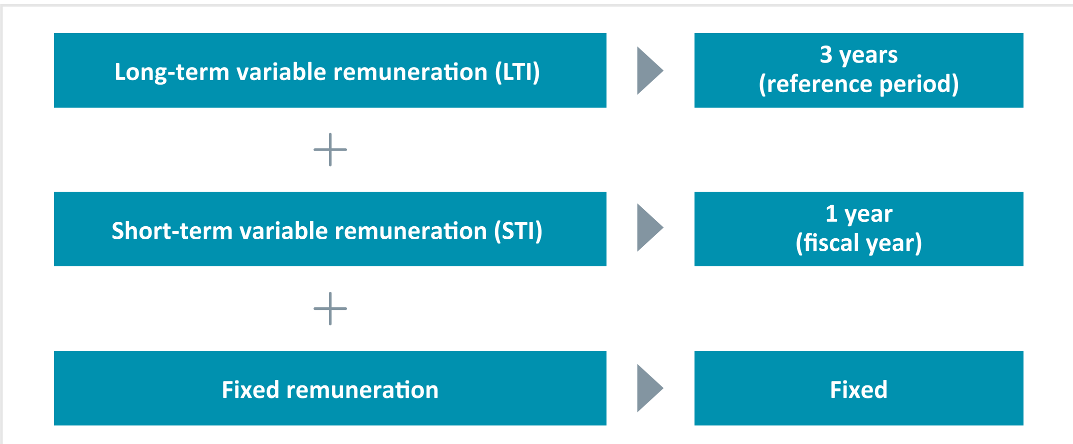
Executive Board remuneration at AIXTRON SE is structured in a way that creates incentives for the sustainable, long-term development of the Company and for the long-term commitment of Executive Board members.

The Supervisory Board sets the specific remuneration for each Executive Board member on the basis of the remuneration system. To the extent legally permissible, the Supervisory Board seeks to offer Executive Board members remuneration that is both in line with the market and competitive, also in order to be able to recruit outstanding individuals to AIXTRON SE and gain their long-term commitment.

Based on the remuneration system, the Supervisory Board sets target total remuneration for each individual Executive Board member for the forthcoming fiscal year. This consists of **three components**:

- **fixed remuneration**,
- **short-term performance-related variable remuneration** (short-term incentive, **STI**), and
- **long-term performance-related variable remuneration** (long-term incentive, **LTI**).

Remuneration structure



Fixed remuneration consists of fixed, non-performance-related base remuneration, which is paid out as a monthly salary. Other components of fixed remuneration include fringe benefits, such as the provision of a company car, allowances for individual private pensions, and the assumption of costs for other insurance policies.

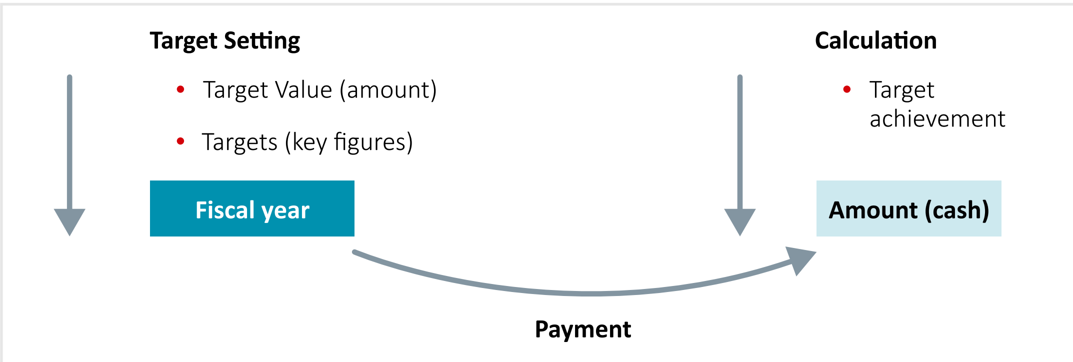
Variable remuneration is tied to the performance of the AIXTRON Group and consists of short-term variable remuneration (STI) and long-term variable remuneration (LTI). The amount of both components depends on the achievement of financial and non-financial performance indicators.

Short-term performance-related variable remuneration (STI) in new remuneration system

The short-term performance-related remuneration, also referred to as the **short-term incentive (STI)**, is geared to the performance of the AIXTRON Group in the given fiscal year and is paid out in full in cash.

The STI is determined using the indicators consolidated net income for the year, the market position of the AIXTRON Group, as well as financial and operational targets. In this regard, the relative weighting amounts to 70% for consolidated net income for the year, 15% for market position, and 15% for financial and operational targets.

Short-term variable remuneration (STI)



The **targets are set** prior to the start of a fiscal year: The Supervisory Board establishes the STI's target value and the targets based on the aforementioned indicators. In the event of 100% target achievement, the individual target STI of the Executive Board members varies from 1.1% to 1.75% of the consolidated net income for the year pursuant to the budget approved by the Supervisory Board for the fiscal year.

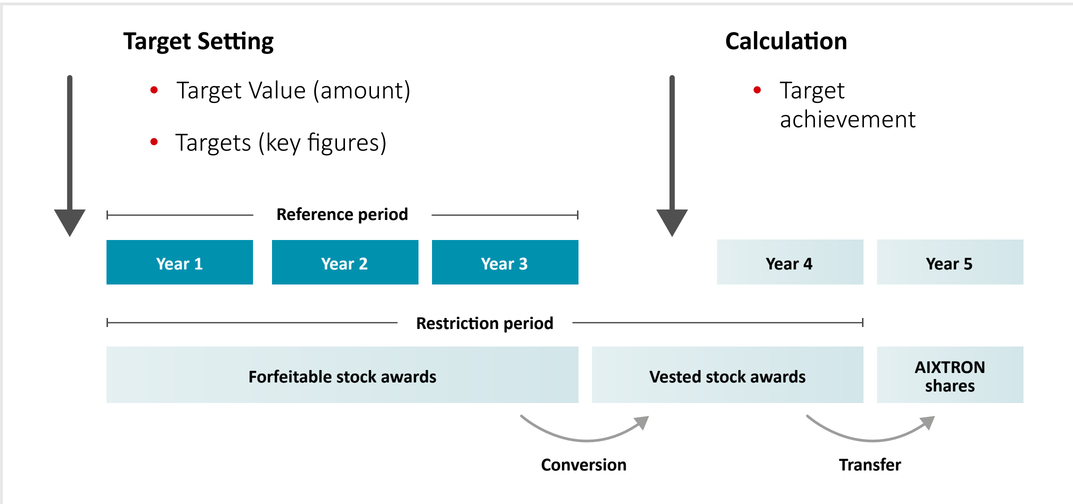
STI **target achievement** is determined after the expiry of the fiscal year. This is capped at a maximum of 250% target achievement. No STI is paid if the consolidated net income for the year is negative, i.e. in years in which the Company posts a loss. STI is paid out in cash after the Supervisory Board has approved the consolidated financial statements.

Long-term performance-related variable remuneration (LTI) in new remuneration system

The amount of long-term performance-related remuneration, also referred to as the **long-term incentive (LTI)**, is geared to the performance of the AIXTRON Group over a **3-year reference period** and is granted entirely in AIXTRON shares. Executive Board members may first dispose of these shares following a four-year holding period calculated from the start of the reference period.

Before the start of a fiscal year, the Supervisory Board determines the **long-term targets** for each Executive Board member for the forthcoming reference period. Each Executive Board member receives forfeitable stock awards in the amount of the **target LTI**, which varies from 1.4% to 2.25% of the consolidated net income for the year pursuant to the budget adopted by the Supervisory Board for the fiscal year. The number of forfeitable stock awards is calculated based on the average of the closing prices on all stock market trading days in the final quarter of the previous year. If consolidated net income for the year is budgeted to be zero or negative, and if a return to profitability is expected during the reference period, the Supervisory Board may within reasonable limits specify a LTI value for the fiscal year.

Long-term variable remuneration (LTI)



LTI target achievement is determined using the indicators consolidated net income for the year and total shareholder return (TSR), as well as sustainability targets. In this regard, the relative weighting amounts to 50% for consolidated net income for the year, 40% for TSR, and 10% for sustainability targets.

For the **first LTI key figure**, the **consolidated net income for the year**, before the start of each fiscal year the Supervisory Board sets a target value on the aggregate consolidated net incomes that are to be achieved during the reference period. After the reference period ends, the ratio of the actual value to the target value is calculated. If the two values are identical, target achievement amounts to 100%. Target achievement is capped at a maximum of 250%. If the ratio is zero or negative, target achievement amounts to 0%. A linear interpolation takes place between the values of 0% and 250%.

The **second LTI key figure**, the **TSR**, denotes the **total shareholder return** over the reference period and is calculated as the ratio of the change in the stock price, plus paid dividends, at the end of the reference period to the value at the start of the reference period. The TSR for AIXTRON stock is determined by the weighted TSR for a comparative group, which consists of the shares of six semiconductor equipment manufacturers – Veeco Instruments, Applied Materials, Tokyo Electron, Lam Research, ASML, and ASMI – and is weighted in proportion to their market capitalization. Changes in the share prices are determined by reference to the difference between the average values of the closing prices on all stock market trading days in the final quarter before the start of the reference period and in the final quarter of the reference period. After the reference period ends, the ratio of the development in the TSR for AIXTRON shares to the development in the TSR for the comparative group is calculated. Target achievement is capped at a maximum of 250% and amounts to 0% if the ratio is less than 50%. A linear interpolation takes place between these values. If during the period under consideration the enterprises in the comparative group experience extraordinary changes (such as mergers, changes in business activities, etc.), the Supervisory Board may take this appropriately into consideration with regard to the composition of the comparative group. In such case, the Supervisory Board will report on this in the annual remuneration report.

The **third LTI key figure** is calculated by reference to **sustainability targets** set by the Supervisory Board at the start of each reference period. These targets refer to the areas of environment, social affairs, and good corporate governance. Target achievement corresponds to the ratio of the actual values to the target values and is capped at 250%. Before the start of each fiscal year, the Supervisory Board sets two to three sustainability targets that are to be achieved by the end of the reference period. The sustainability targets that the Supervisory Board may choose from before the start of a fiscal year when setting targets for the respective Executive Board member include, among others: efficient use of energy and raw materials, reduction of emissions, employee satisfaction and development, customer satisfaction, innovation achievements, successor planning, and compliance.

After the expiry of the three-year reference period, the degree of LTI target achievement is determined by the Supervisory Board. Depending on the degree of target achievement, the forfeitable stock awards are then converted into vested stock awards or otherwise lapse. The maximum number of vested stock awards that may be granted in connection with LTI is capped at 250% of the number of forfeitable stock awards granted at the start of the reference period.

Following expiry of the four-year restriction period, the shares are transferred to the Executive Board member, with due compliance with the maximum remuneration limits set out below. The Executive Board member is not entitled to receive dividends during the restriction period.

Remuneration limits in new remuneration system

The remuneration system is intended to provide appropriate rewards for successful Executive Board work and to ensure that the Executive Board and shareholders all benefit from the Company's positive development. At the same time, to prevent the taking of inappropriate risks and ensure an appropriate relation to the situation of the AIXTRON Group, Executive Board remuneration is limited by setting a **maximum remuneration** and a **remuneration cap**.

Maximum remuneration (expenditure cap) is the total remuneration owed to the Executive Board for a fiscal year. It may not exceed EUR 6.5 million in the case of two Executive Board members or EUR 10.0 million in the case of three or more Executive Board members. This also represents the **expenditure cap**, i.e. the maximum expense for the Company.

There is also a **remuneration cap (allocation cap)** for the aggregate of fixed remuneration, STI, and LTI. The actual allocation for each Executive Board member for a fiscal year is capped at four times the Executive Board member's target total remuneration. This is the **allocation cap**. If the remuneration cap is exceeded, a portion of the vested stock awards previously awarded is forfeited to ensure compliance.

Fixed remuneration will generally account for 20% to 40% of **target total remuneration**, while **variable remuneration** will make up 60% to 80%. Long-term remuneration will account for a greater share of remuneration in order to provide incentives for long-term and sustainable actions. No additional remuneration is paid for group-internal mandates, such as at subsidiaries.

Further provisions governing new remuneration system

To ensure that the interests of the Executive Board are aligned with those of shareholders, the Company has a **stock ownership policy**. Following a four-year build-up phase, each Executive Board member is obliged to hold AIXTRON stock worth 100% of their base remuneration on a permanent basis throughout their term of office. The value of vested stock awards is set off against the respective target shareholding value. Executive Board members may sell shares only if they exceed the respective target value.

Furthermore, a **sanctioning mechanism**, i. e. **claw-back policy**, applies for **breaches of duty or compliance**. Based on this mechanism, in the event of such breaches the Supervisory Board may reduce variable remuneration components not yet paid out, allow stock awards to lapse, or even claw these back. These possibilities may be exercised even when the Executive Board member is no longer in office and is no longer employed by the Company.

In justified exceptional circumstances, such as severe economic crises, the effects of which render the original Company targets invalid, the Supervisory Board may resolve a temporary divergence from the remuneration system if such divergence is in the interests of AIXTRON SE. As a general rule, the targets and target values do not change during the periods relevant for the respective target achievement, even if developments in the overall market are unfavorable.

A detailed description of the new Executive Board remuneration system adopted by the Annual General Meeting on May 20, 2020 can be found on AIXTRON's website under Remuneration Policy.

Comparison of remuneration in new remuneration system

The Supervisory Board reviews the appropriateness of the various components of remuneration on an annual basis. The remuneration system is presented to the Annual General Meeting for approval in the event of any material changes to the system and at least every four years.

For the purposes of external comparison, the Supervisory Board refers to remuneration data at the semiconductor equipment manufacturers Veeco Instruments, Applied Materials, Lam Research, ASML, and ASMI, as well as to those companies listed in the TecDAX that have market capitalizations between 50% and 200% of that at AIXTRON SE.

For the internal comparison, the Supervisory Board defines the senior management level as the ten senior managers whose remuneration is not tied to collective bargaining agreements and who have the greatest managerial responsibility and decision-making powers.

Reporting in new remuneration system

The Executive Board and the Supervisory Board prepare a remuneration report each year in accordance with statutory provisions. For the fiscal year 2021, a remuneration report in accordance with Section 162 of the German Stock Corporation Act (AktG) as amended by ARUG II is presented for the first time. This report explains which performance criteria were applied and how the respective amounts of the variable compensation components were calculated.

The remuneration report for the past fiscal year contains an outlook on the application of the remuneration system in the current fiscal year. This outlook reports in advance on the selection of the financial and non-financial performance criteria. However, the non-financial performance criteria, as well as the specific targets for the financial indicators, are not explained in detail until after the end of the relevant periods for STI and/or LTI in order not to disclose competition-relevant strategic plans in advance.

Arrangements upon contract termination

Should a contract with an Executive Board member be terminated, then the outstanding variable remuneration components attributable to the time through to termination of the contract will be paid out in accordance with the originally agreed targets and comparison parameters and with the due dates or holding periods specified in the contract. If an Executive Board contract ends during a fiscal year, STI and LTI are granted on a prorated basis relative to the length of service in this fiscal year.

The foregoing does not apply to cases in which the employment contract is terminated without notice for cause inherent in the Executive Board member for which he or she is responsible. In such case, variable remuneration will not be paid for the year in which termination becomes effective.

In the case of **premature termination of the Executive Board mandate** by reason of revocation of the appointment, the Executive Board member will be paid a severance equal to the remuneration expected to be owed by the Company for the remaining term of the employment contract, but not more than two years of remuneration (severance cap).

When agreeing employment contracts with Executive Board members, the Supervisory Board may stipulate that, in the event of the contract being terminated due to a **"change-of-control" event**, severance will be paid in the aforementioned maximum amount. A change-of-control event in the foregoing sense exists where a third party, or a group of third parties who combine their shareholding by contract in order to act as a single third party, directly or indirectly holds more than 50% of the Company's share capital.

No benefits in excess of this severance payment are permitted.

In the event of premature termination of the Executive Board mandate based on mutual agreement to end the employment contract, the total value of benefits pledged by the Company to the Executive Board member in connection with such agreement may not exceed the amount of remuneration expected to be owed by the Company for the original remaining term of the employment contract and may not exceed a maximum of two annual remuneration packages.

Remuneration of Executive Board members in fiscal year 2021

Executive Board remuneration

In fiscal year 2021, exclusively the new remuneration system described above was applied for the members of the Executive Board of AIXTRON SE with the exception of Dr. Bernd Schulte, whose legacy contract expired on March 31, 2021. The following section specifies the concrete Executive Board remuneration for the reporting year and contains detailed information and background on the total Executive Board remuneration, the target setting and target achievement of the variable remuneration as well as individualized information on the remuneration of the individual Executive Board members for fiscal year 2021.

Total remuneration for fiscal year 2021

The total remuneration of the Executive Board for the financial year 2021 amounted to kEUR 8,437 (2020: kEUR 2,956). The non-performance-related fixed remuneration of the Executive Board for the fiscal year 2021, consisting of a basic remuneration, pension allowances and benefits in kind, totaled kEUR 1,106 (2020: kEUR 912).

Base remuneration for fiscal year 2021

Base remuneration comprised the following amounts in fiscal year 2021:

- for Dr. Felix Grawert: kEUR 400
- for Dr. Christian Danninger: kEUR 200 (May 1, 2021 – December 31, 2021)
- for Dr. Jochen Linck: kEUR 300
- for Dr. Bernd Schulte: kEUR 90 (January 1, 2021 – March 31, 2021)

Pension allowances for fiscal year 2021

The Executive Board members in office in the year under report do not have individual pension commitments, as a result of which no provisions are stated for pensions. The Company rather pays pension allowances to Executive Board members together with their salaries or makes contributions to an insurance contract with a pension fund.

Pension allowances form a constituent component of the non-performance-related fixed remuneration of the Executive Board. They comprised the following amounts in fiscal year 2021:

- for Dr. Felix Grawert: kEUR 30
- for Dr. Christian Danninger: kEUR 20 (May 1, 2021 – December 31, 2021)
- for Dr. Jochen Linck: kEUR 30
- for Dr. Bernd Schulte: kEUR 10 (January 1, 2021 – March 31, 2021)

Variable remuneration for fiscal year 2021 under former remuneration system

The former remuneration system was applied in 2021 to determine the variable remuneration for Dr. Bernd Schulte from January 1, 2021, to March 31, 2021. The variable remuneration under the former remuneration system amounts to 2.5% of consolidated net income per Executive Board member on a pro rata basis and is paid half in cash and half in shares. This results in variable remuneration for 2021 under the previous remuneration system:

- for Dr. Bernd Schulte: kEUR 296 in cash and kEUR 296 to be granted in shares.

Short-term variable remuneration (STI) for fiscal year 2021 under new remuneration system

The new remuneration system was applied in 2021 to determine the short-term variable remuneration for Dr. Felix Grawert, Dr. Christian Danninger and Dr. Jochen Linck.

Target dimension “consolidated net income for the year”

At its meeting on December 9, 2020, the Supervisory Board set a target of kEUR 44,900 for consolidated net income in 2021 (70% of total target). The actual figure of kEUR 94,839 results in a target achievement of 211%.

Target dimension “market position”

For the target dimension "market position" (15% of total target), the Supervisory Board set targets for individual market segments for 2021. Good sales performance in the existing markets and success in the growth markets led to a target achievement of 205%.

Target dimension “financial and operational targets”

For the target dimension "Financial and operational targets" (15% of total target), performance criteria were defined in the area of operational performance, the market launch of new products, and for the OLED business unit. Here, target achievement in the past fiscal year was 127%.

Based on the achievement of these three target dimensions, short-term variable remuneration (STI) is calculated for fiscal year 2021 under the new remuneration system as follows:

- for Dr. Felix Grawert: kEUR 1,552 in cash
- for Dr. Christian Danninger: kEUR 655 in cash (May 1, 2021 – December 31, 2021)
- for Dr. Jochen Linck: kEUR 976 in cash.

Long-term variable remuneration (LTI) for fiscal year 2021 under new remuneration system

In 2021, the new remuneration system was applied to the contracts with Dr. Felix Grawert, Dr. Christian Danninger (since May 1, 2021) and Dr. Jochen Linck. Target achievement for the 2021 LTI tranche is calculated by reference to the results achieved in the period from January 1, 2021, to December 31, 2023. It is determined by the following performance criteria:

- Consolidated net income for fiscal years 2021, 2022, and 2023 (50% of total)
- Change in total shareholder return (TSR) from Q4 / 2020 to Q4 / 2023 (40% of total)
- Sustainability (10% of total), measured in terms of energy consumption in kWh normed to the most important drivers of consumption and employee training measured in terms of learning hours

The relevant AIXTRON SE share price for the TSR target remuneration 2021 is EUR 11.582. It corresponds to the average of the XETRA closing prices on all stock exchange trading days in Q4 / 2020. The degree of achievement of the performance criteria will be determined by the Supervisory Board after the end of fiscal year 2023. At that time, the vested share awards will be converted into non-forfeitable share awards depending on target achievement. After the expiry of a 4-year vesting period ending on December 31, 2024, for the fiscal year 2021, one share of the Company will be transferred for each vested share award. This is to take place in the week following the publication of the annual report.

For the long-term variable remuneration (LTI) for 2021, the Supervisory Board stipulated the values of target LTI as follows:

- for Dr. Felix Grawert: kEUR 1,010 in forfeitable stock awards,
- for Dr. Christian Danninger: kEUR 422 in forfeitable stock awards (May 1, 2021 – December 31, 2021),
- for Dr. Jochen Linck: kEUR 629 in forfeitable stock awards.

Tabular overview of performance criteria applied to Executive Board remuneration pursuant to Sec. 162 (1) Sentence 2 No. 1 Stock Corporation Act (AktG)

			Information on the performance targets			
Component	Description of performance measures	Portion		a) Minimum target b) Corresponding remuneration	a) Target achievement b) Corresponding remuneration	a) Measured performance b) Corresponding remuneration
STI 2021	Consolidated net income 2021	70%	kEUR kEUR	a) 0 b) 0	a) 44,900 b) 1,128	a) 211% b) 2,382
	Market position	15%	% kEUR	a) 0 b) 0	a) 100 b) 242	a) 205 b) 495
	Financial and operational targets	15%	% kEUR	a) 0 b) 0	a) 100 b) 242	a) 127 b) 306
LTI 2020-2022	Consolidated net income 2020-2022	50%	% kEUR	a) 0 b) 0	a) 100 b) 115	a) will be calculated b) at the end of 2022
	Total Shareholder Return 2020-2022	40%	% kEUR	a) 0 b) 0	a) 100 b) 92	a) will be calculated b) at the end of 2022
	Sustainability targets for 2020-2022	10%	% kEUR	a) 0 b) 0	a) 100 b) 23	a) will be calculated b) at the end of 2022
LTI 2021-2023	Consolidated net income 2021-2023	50%	% kEUR	a) 0 b) 0	a) 100 b) 1,030	a) will be calculated b) at the end of 2023
	Total Shareholder Return 2021-2023	40%	% kEUR	a) 0 b) 0	a) 100 b) 824	a) will be calculated b) at the end of 2023
	Sustainability targets for 2021-2023	10%	% kEUR	a) 0 b) 0	a) 100 b) 206	a) will be calculated b) at the end of 2023

Deviation from new remuneration system

In 2021, there were no deviations from and no adjustments to the remuneration system compared with the AGM resolution on the remuneration system in May 2020.

Benefits granted and payments made in fiscal year 2021

The following tables show the remuneration granted and due to the active members of the Executive Board in each of the fiscal years 2020 and 2021 in accordance with Section 162 (1) sentence 1 AktG. The "Remuneration granted and due" section of the tables thus contains all amounts actually received by the individual Executive Board members in the reporting period (**"remuneration granted"**) and all remuneration legally due but not yet received in the reporting period (**"remuneration due"**). In addition, the individual possible minimum and maximum remuneration values for the 2021 fiscal year are shown here.

Furthermore, in line with the DCGK 2020, the tables show the fixed remuneration and the one-year variable remuneration as an inflow for the respective financial year. For subscription rights and other share-based remuneration, the time and value of the inflow is the relevant time and value under German tax law.

In addition to the remuneration amounts, Section 162 (1) sentence 2 no. 1 AktG also requires the disclosure of the relative share of all fixed and variable remuneration components in total remuneration. The relative proportions stated here at the end of each table relate to the remuneration components granted and due in the respective fiscal year in accordance with Section 162 (1) sentence 1 AktG.

In total, the remuneration of the Executive Board ("remuneration granted and due") for fiscal year 2021 amounted to kEUR 8,437 (fiscal year 2020: kEUR 2,956) and was thus below the maximum remuneration (expense cap) for three Executive Board members of kEUR 10,000.

Remuneration granted and due pursuant to Section162 (1) sentence 1 AktG and payments made per Executive Board member in fiscal year 2021

Dr. Felix Grawert Chief Executive Officer Member of the Exective Board since August 14, 2017 in € Thousands		Remuneration granted and due 2020	 2021	 2021 (Target achievement 100%)	 2021 (Target achievement 250%)	Allocation 2020	 2021
Non-performance related remune-ration	Fixed remuneration	373	430	430	430	373	430
	Fringe benefits	11	6	6	6	11	6
	Total	**384**	**436**	**436**	**436**	**384**	**436**
Performance-related remuneration	**Short-term variable remuneration**	**460**	**1,552**	**786**	**1,964**	**460**	**1,552**
	Under former contract (01.01.-13.08.2020)	267	0	0	0	267	0
	STI 2020 under new contract (14.08.-31.12.2020)	193	0	0	0	193	0
	STI 2021	0	1,552	786	1,964	0	1,552
	Long-term variable remuneration	**546**	**1,715**	**1,334**	**3,335**	**42**	**0**
	Share-based portion of one-year variable remuneration (restriction period 2017-2020)	0	0	0	0	42	0
	Share-based portion of one-year variable remuneration (restriction period 2020-2024) under old con-tract (01.01.-08.13.2020)	298	0	0	0	0	0
	LTI tranche 2020-2022 (restriction period 2020-2023) under new contract (08.14.-12.31.2020) *	248	0	0	0	0	0
	LTI tranche 2021-2023 (restriction period 2021-2024) *	0	1,715	1,334	3,335	0	0
Total non-performance-related / performance-related remuneration		**1,390**	**3,703**	**2,556**	**5,736**	**886**	**1,989**
Pension allowance		0	0	0	0	0	0
Total remuneration		**1,390**	**3,703**	**2,556**	**5,736**	**886**	**1,989**
Thereof as a per-centage	**Portion of fixed remuneration**	**28%**	**12%**	**17%**	**8%**	**43%**	**22%**
	Portion of variable remuneration	**72%**	**88%**	**83%**	**92%**	**57%**	**78%**

* Fair value valuation of LTI tranche

Dr. Christian Danninger Chief Financial Officer Member of the Exective Board since May 1, 2021 in € Thousands		Remuneration granted and due				Allocation	
		2020	**2021**	**2021** (Target achievement 100%)	**2021** (Target achievement 250%)	**2020**	**2021**
Non-performance related remuneration	Fixed remuneration	0	220	220	220	0	220
	Fringe benefits	0	11	11	11	0	11
	Total	**0**	**231**	**231**	**231**	**0**	**231**
Performance-related remuneration	**Short-term variable remuneration**	**0**	**655**	**332**	**829**	**0**	**655**
	STI 2021	0	655	332	829	0	655
	Long-term variable remuneration	**0**	**773**	**602**	**1,504**	**0**	**0**
	LTI tranche 2021-2023 (restriction period 2021-2024) *	0	773	602	1,504	0	0
Total non-performance-related / performance-related remuneration		**0**	**1,660**	**1,164**	**2,564**	**0**	**886**
Pension allowance		0	0	0	0	0	0
Total remuneration		**0**	**1,660**	**1,164**	**2,564**	**0**	**886**
Thereof as a percentage	**Portion of fixed remuneration**	**0%**	**14%**	**20%**	**9%**	**0%**	**26%**
	Portion of variable remuneration	**0%**	**86%**	**80%**	**91%**	**0%**	**74%**

* Fair value valuation of LTI tranche

Dr. Jochen Linck Chief Operating Officer Member of the Exective Board since October 1, 2020 in € Thousands		Remuneration granted and due				Allocation	
		2020	**2021**	**2021** (Target achievement 100%)	**2021** (Target achievement 250%)	**2020**	**2021**
Non-performance related remuneration	Fixed remuneration	83	330	330	330	83	330
	Fringe benefits	2	5	5	5	2	5
	Total	**85**	**335**	**335**	**335**	**85**	**335**
Performance-related remuneration	**Short-term variable remuneration**	**81**	**976**	**494**	**1,235**	**81**	**976**
	STI 2020	81	0	0	0	81	0
	STI 2021	0	976	494	1,235	0	976
	Long-term variable remuneration	**96**	**1,067**	**830**	**2,075**	**0**	**0**
	LTI tranche 2020-2022 (restriction period 2020-2023) *	96	0	0	0	0	0
	LTI tranche 2021-2023 (restriction period 2021-2024) *	0	1,067	830	2,075	0	0
Total non-performance-related / performance-related remuneration		**262**	**2,378**	**1,659**	**3,645**	**166**	**1,311**
Pension allowance		0	0	0	0	0	0
Total remuneration		**262**	**2,378**	**1,659**	**3,645**	**166**	**1,311**
Thereof as a percentage	**Portion of fixed remuneration**	**32%**	**14%**	**20%**	**9%**	**51%**	**26%**
	Portion of variable remuneration	**68%**	**86%**	**80%**	**91%**	**49%**	**74%**

* Fair Value Bewertung der LTI Tranche

Dr. Bernd Schulte Member of the Exective Board until March 31, 2021 in € Thousands		Remuneration granted and due				Allocation	
		2020	2021	2021 (Minimum)*	2021 (Maximum)*	2020	2021
Non-performance related remune-ration	Fixed remuneration	430	100	100	100	430	100
	Fringe benefits	13	3	3	3	13	3
	Total	**443**	**103**	**103**	**103**	**443**	**103**
Performance-related remune-ration	**Short-term variable remuneration**	**431**	**296**	**0**	**813**	**431**	**296**
	Long-term variable remuneration	**431**	**296**	**0**	**813**	**0**	**0**
	Share-based portion of one-year variable remuneration (restriction period 2020-2024)	431	0	0	0	0	0
	Share-based portion of one-year variable remuneration (restriction period 2021-2025)		296	0	813	0	0
Total non-performance-related / performance-related remuneration		**1,305**	**696**	**103**	**1,728**	**874**	**400**
Pension allowance		0	0	0	0	0	0
Total remuneration		**1,305**	**696**	**103**	**1,728**	**874**	**400**
Thereof as a percentage	**Portion of fixed remuneration**	**34%**	**15%**	**100%**	**6%**	**51%**	**26%**
	Portion of variable remuneration	**66%**	**85%**	**0%**	**94%**	**49%**	**74%**

* Theoretical minimum- and maximum compensation for Dr. Bernd Schulte under the formed remuneration system applicable.

Shares granted and awarded to the Executive Board under the LTI in accordance with Section 162 (1) Sentence 2 No. 3 AktG

Name, position	Description of plan	Restriction period	Development of granted or awarded shares: Awarded shares 01.01.	a) granted or awarded shares b) Value of granted or awarded shares	Awarded shares 31.12.
Dr. Felix Grawert Chief Executive Officer	Variable remuneration 2018	(restriction period 2018-2022)	61,924		61,924
	Variable remuneration 2019	(restriction period 2019-2023)	46,987		46,987
	Variable remuneration 2020 old system*	(restriction period 2020-2024)	18,072		18,072
	LTI tranche 2020-2022**/***	(restriction period 2020-2023)	21,096		21,096
	LTI tranche 2021-2023***	(restriction period 2021-2024)	0	a) 112,119 b) 1,715 TEUR	112,119
					260.198

* prorated from January 01 to August 13, 2020

** prorated from August 14 to December 31, 2020

*** The number of shares can change due to the actual target achievement at the end of the reference period.

Name, position	Description of plan	Restriction period	Development of granted or awarded shares		
			Awarded shares 01.01.	a) granted or awarded shares b) Value of granted or awarded shares	Awarded shares 31.12.
Dr. Christian Danninger Member of the Executive Board	LTI tranche 2021-2023*/**	(restriction period 2021-2024)	0	a) 46,827 b) 773 TEUR	**46,827**

* prorated from May 01 bis Dezember 31, 2020

** The number of shares can change due to the actual target achievement at the end of the reference period.

Name, position	Description of plan	Restriction period	Development of granted or awarded shares		
			Awarded shares 01.01.	a) granted or awarded shares b) Value of granted or awarded shares	Awarded shares 31.12.
Dr. Jochen Linck Member of the Executive Board	LTI tranche 2020-2022*/**	(restriction period 2020-2023)	8,687		8,687
	LTI tranche 2021-2023**	(restriction period 2021-2024)	0	a) 69,763 b) 1,067 TEUR	69,763
					78,450

* prorated from October 1 bis Dezember 31, 2021

** The number of shares can change due to the actual target achievement at the end of the reference period.

Name, position	Description of plan	Restriction period	Development of granted or awarded shares		
			Awarded shares 01.01.	a) granted or awarded shares b) Value of granted or awarded shares	Awarded shares 31.12.
Dr. Bernd Schulte Member of the Executive Board until März 31, 2021	Variable remuneration 2018	(restriction period 2018-2022)	56,957		56,957
	Variable remuneration 2019	(restriction period 2019-2023)	41,835		41,835
	Variable remuneration 2020	(restriction period 2020-2024)	26,153		26,153
	Variable remuneration 2021*	(restriction period 2021-2025)		a) 3,3170 b) 593 TEUR	33,170
					158,115

* Calculated using closing price on Dec 31, 2021. The number of shares might change due to the actual share price determined after the shareholders' meeting in May 2022.

Benefits in connection with the termination of Executive Board mandate

Apart from the provisions regarding the termination of an Executive Board member's contract (page 50), there are no other contractually agreed benefits that would apply if an Executive Board member were to leave the Company, such as retirement benefits, the further use of a company car or office, or the continued payment of other benefits.

Comparative presentation of the annual change in the remuneration of the members of the Executive Board with the development of earnings and the average remuneration of the employees of AIXTRON SE

The following table shows a comparison of the percentage change in the remuneration of the members of the Executive Board with the earnings development of AIXTRON SE and the AIXTRON Group as well as with the average remuneration of the employees on a full-time equivalent basis compared to the previous year. The remuneration of the members of the Executive Board included in the table reflects the remuneration granted and due to the respective Executive Board members in the reporting year and thus corresponds to the value stated in the preceding remuneration tables in the column "Remuneration granted and due" for the fiscal years 2020 and 2021 within the meaning of Section 162 (1) sentence 1 AktG (on page 56 - 58 of the Annual Report). Where members of the Executive Board were only remunerated on a pro rata basis in individual financial years, for example due to joining or leaving the company during the year, the remuneration for this fiscal year was extrapolated to a full year to ensure comparability.

The development of earnings is generally presented on the basis of the development of the annual result of AIXTRON SE in accordance with Section 275 (3) No. 16 HGB (German Commercial Code). Since the remuneration of the members of the Executive Board is also significantly dependent on the business success of the AIXTRON Group, the development of the revenues, the EBIT and the net income for the year is also stated for the Group.

The comparison with the development of the average remuneration of employees is based on the average remuneration of the workforce of the Group parent company AIXTRON SE in Germany. Since the employee and remuneration structures in the subsidiaries are manifold, in particular in the case of employees abroad, it is appropriate for the comparison of the development of the average remuneration to be based only on the total workforce of AIXTRON SE. This comparison group was also used in the examination of the appropriateness of the remuneration of the members of the Executive Board. In this context, the remuneration of all employees of AIXTRON SE, including executive employees and excluding student assistants, was taken into account. In order to ensure comparability, the remuneration of part-time employees was extrapolated to full-time equivalents.

Comparison of annual changes in Executive Board remuneration pursuant to Section 162 (1) no. 2 of the German Stock Corporation Act (AktG)

Annual change (in %)	2021 versus 2020
Executive Board remuneration	
Dr. Felix Grawert	166%
Dr. Christian Danninger*	n. a.
Dr. Jochen Linck**	128%
Dr. Bernd Schulte***	113%
Earnings development of AIXTRON SE and the Group	
Group revenues	59%
Group EBIT	184%
Group net income	175%
AIXTRON SE net income	275%
Average remuneration of AIXTRON employees******	
Employees of AIXTRON SE	9%

* Executive Board member since May 1, 2021, thus no data available

** Executive Board member since October 1, 2020, amount for 2020 annualized

*** Executive Board member until March 31, 2021, amount for 2021 annualized

**** based on full-time equivalents

Stock option plans

Stock options are neither components of the "former remuneration system" nor of the "new remuneration system" described above. Therefore, Dr. Felix Grawert, Dr. Christian Danninger and Dr. Jochen Linck do not hold any stock options. From periods prior to the applicability of the remuneration systems described herein, Dr. Bernd Schulte held a stock options, which expired in fiscal year 2021.

Stock option plans

Executive Board member	Allocation date	Outstanding (shares)	Exercisable (shares)	Option value on grant date (EUR)	Exercise price (EUR)	Maturity	Lapsed shares
Dr. Bernd Schulte	Oct 2014	0	0		13.14	Oct 2024	50,000

In fiscal year 2021, 50,000 option rights to purchase AIXTRON shares expired (2020: 52,000). The members of the Executive Board in office in the reporting year 2021 did not exercise any option rights in 2021 (2020: 0).

Claw-back information

There was no claw-back of variable compensation components of the Executive Board members in fiscal year 2021 (claw-back policy).

Outlook for the application of the new remuneration system for 2022

Short-term variable remuneration (STI)

For the current fiscal year 2022, the Supervisory Board has defined the following target dimensions and performance criteria for the short-term variable remuneration (STI):

- Target dimension “Consolidated net income” (70% of total): In December 2021, the Supervisory Board set a target value for consolidated net income in 2022 as part of the forecast.
- Target dimension “Market position” (15% of total): For the “Market position” target dimension, the Supervisory Board has set targets for important markets for 2022.
- Target dimension “Financial and operational targets” (15% of total): Performance criteria were defined for the target dimension “Financial and operational targets” in the area of operational performance and product-related performance.

Long-term variable remuneration (LTI)

The Supervisory Board has defined the following performance criteria for the reference period for long-term variable remuneration (LTI) starting in fiscal year 2022:

- Consolidated net income for fiscal years 2022, 2023 and 2024 (50% of total)
- Development of total shareholder return (TSR) from Q4 / 2021 to Q4 / 2024 (40% of total).
- Sustainability (10% of total), measured among other things by the proportion of ecologically sustainable revenues, capital expenditures (CapEx) and operating expenses (OpEx) as defined in the EU Taxonomy Regulation. In addition, there are further sustainability targets which, however, when considered individually, are not essential for the implementation of the corporate strategy.

The target achievement of the LTI remuneration 2022 is calculated on the basis of the results achieved in the period from January 1, 2022, to December 31, 2024. The relevant share price of AIXTRON SE for the LTI grant is EUR 19.64. It corresponds to the average of the XETRA closing prices on all stock exchange trading days in the 4th quarter of 2021. The degree of fulfillment of the performance criteria will be determined by the Supervisory Board after the end of fiscal year 2024. At that time, the vested share awards will be converted into non-forfeitable share awards depending on target achievement. After the expiry of a 4-year vesting period ending on December 31, 2025 for the fiscal year 2022, one share of the Company will be transferred for each vested share award. This is to take place in the week following the publication of the annual report.

Remuneration of Supervisory Board members

Remuneration of the Supervisory Board is regulated in Article 17 of AIXTRON's Articles of Association. The currently valid remuneration system was last approved by the Annual General Meeting on May 16, 2018. Accordingly, annual fixed remuneration for individual members of the Supervisory Board amounts to EUR 60,000, with the Chairman receiving three times and the Deputy Chairman one and a half times the remuneration of an ordinary Supervisory Board member.

The Chairman of the Audit Committee receives additional annual remuneration of EUR 20,000.

No attendance fees or other variable remuneration is granted.

The members of the Supervisory Board who are only members of the Supervisory Board for part of the fiscal year or who are the Chairman or Deputy Chairman of the Supervisory Board or Audit Committee receive one twelfth of the above mentioned remuneration on a prorated basis for each month or part thereof of the corresponding activity on the Supervisory Board.

The Company assumes insurance premiums paid for liability and legal expenses insurance to cover liability risks arising from Supervisory Board activities for the members of the Supervisory Board, as well as the insurance tax payable thereon.

The Supervisory Board members receive no loans from the Company.

The remuneration allocable to individual Supervisory Board members in fiscal years 2020 and 2021 is presented on an individualized basis in the table below. As in previous years, no remuneration was paid to Supervisory Board members for individual advisory services in fiscal year 2021.

Supervisory Board remuneration

Supervisory Board Member	Year	Fixed (EUR)	Total (EUR)
Kim Schindelhauer[1)2)3)4)5)] (Chairman of the Supervisory Board)	2021	180,000	180,000
	2020	180,000	180,000
Prof. Dr. Anna Weber[1)] (Chairwoman of the Audit Committee) (Independent Financial Expert)	2021	80,000	80,000
	2020	80,000	80,000
Dr. Andreas Biagosch[1)2)]	2021	60,000	60,000
	2020	60,000	60,000
Prof. Dr. Petra Denk[3)4)]	2021	60,000	60,000
	2020	60,000	60,000
Frits van Hout[3)4)] (Deputy Chairman of the Supervisory Board)	2021	90,000	90,000
	2020	90,000	90,000
Total	**2021**	**470,000**	**470,000**
	2020	**470,000**	**470,000**

1) Member of the Audit Committee

2) Member of the Capital Markets Committee

3) Member of the Nomination Committee

4) Member of the Compensation Committee

5) Former AIXTRON Executive Board Member

Directors & Officers (D&O) insurance

In accordance with the requirements of Section 93 para. 2 AktG, AIXTRON SE has arranged a D&O insurance policy for all members of the Executive Board against risks from their professional activities for the Company, which in each case provides for a deductible of at least 10 percent of the damage up to at least the amount of one and a half times the fixed annual remuneration of the Executive Board member. For the members of the Supervisory Board of AIXTRON SE, the Company has arranged D&O insurance policies which also provide for a corresponding deductible.

COMBINED MANAGEMENT AND GROUP MANAGEMENT REPORT

AS OF DECEMBER 31, 2021

This Management Report comprises both the Group Management Report and the Management Report of AIXTRON SE. In this report, we inform about the business development as well as the situation and the expected development of the AIXTRON Group (hereinafter also referred to as “AIXTRON”, “AIXTRON Group”, or “the Group”) and AIXTRON SE (hereinafter also referred to as “the Company). The information regarding AIXTRON SE is contained in a separate section in the report on economic position with disclosures in accordance with the German Commercial Code (HGB).

The Consolidated Financial Statements of the Group have been prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union, pursuant to section 315e of the German Commercial Code (HGB). With the exception of the HGB disclosures in the chapter Management Report of AIXTRON SE, all financial figures contained in this Group Management Report, including the comparative figures for the previous year, are reported in accordance with IFRS.

Further information about the adherence to reporting standards is contained in section “Significant Accounting Policies” of the notes to the Consolidated Financial Statements.

Due to rounding, numbers presented throughout this report may not add up precisely to the totals indicated and percentages may not precisely reflect the absolute figures for the same reason.

Fundamental Information on the Group

Business Model

AIXTRON's business activities include the development, production and installation of equipment for the deposition of complex semiconductor materials, the development of deposition processes on such equipment, consulting and training, customer support and service for such equipment. AIXTRON also provides peripheral equipment and services for the operation of its equipment.

AIXTRON supplies deposition equipment for volume production as well as equipment for research and development (R&D) and pre-series production.

The demand for AIXTRON equipment is significantly influenced by requirements for higher energy efficiency in IT, by the expansion of electromobility, by increasing transmission speeds and volumes of data, as well as by the use of 3D sensor technology in consumer electronics and in the automotive sector, and last but not least, by the use of innovative technologies in displays. The ability of AIXTRON's technologies to deposit thin material films precisely, enables manufacturers to improve performance, yield and quality in the fabrication process of advanced power- and optoelectronic devices.

Organizational Structure

Locations and legal corporate structure

The AIXTRON Group comprises the parent company AIXTRON SE with its registered office in Herzogenrath, Germany, and its subsidiaries. As of December 31, 2021, AIXTRON SE held direct and indirect stakes in 10 companies which are part of the AIXTRON Group, and which are fully consolidated. A list of all consolidated companies is shown in note 32 of the notes to the Consolidated Financial Statements.

Facility location	Use
Herzogenrath, Germany	Headquarters, R&D, Manufacturing, Engineering
Cambridge, UK	R&D, Manufacturing, Engineering, Service
Santa Clara, CA, USA	Sales, Service
Hwaseong, South Korea	Sales, Service
Shanghai, China	Sales, Service
Hsinchu, Taiwan	Sales, Service
Tokyo, Japan	Sales, Service

Management and Control

As a European stock company (Societas Europaea) the AIXTRON SE has a dual management and control structure consisting of an Executive Board and a Supervisory Board. The Executive Board is responsible for managing the Company at its own responsibility while being advised and monitored by the Supervisory Board. In 2021, there were the following personnel changes in the Company's management and supervisory bodies:

Dr. Bernd Schulte left the Executive Board at expiration of his contract on March 31, 2021, and retired. As of April 1, 2021, Dr. Felix Grawert was appointed Chairman of the Executive Board. Thereafter, the Executive Board briefly consisted only of the two members Dr. Grawert and Dr. Linck. As of May 1, 2021, Dr. Christian Danninger joined the AIXTRON Group as the new Chief Financial Officer. Since then, the Executive Board has again consisted of three persons. The composition of the Supervisory Board has not changed since December 31, 2020.

Detailed information on the composition of the Executive Board and the Supervisory Board, the allocation of responsibilities between them, the operating procedures of the Supervisory Board committees and the Company's diversity concept can be found in the Corporate Governance Declaration according to Section 289f HGB and Section 315d HGB, including the Declaration of Conformity according to Section 161 AktG are part of the annual report and also available on the AIXTRON website at Declaration of Corporate Governance.

Technology and Products

AIXTRON's product range includes customer-specific systems for the deposition of complex semiconductor materials on a diverse range of different substrate sizes and materials.

The **MOCVD process (Metal Organic Chemical Vapor Deposition)** is used for the vapor phase deposition of so-called compound semiconductor materials for the manufacture of power and optoelectronic components.

In the area of **power electronics**, our systems are used for the production of gallium nitride (GaN) semiconductor devices for more compact and more powerful power supplies in consumer electronics, for the efficient power supply of data centers and mobile communications infrastructure. In addition, our systems are used to manufacture GaN devices for wireless data transmission in mobile communications, currently primarily in the 5G area and soon also in the 6G network. A second major application field of power electronics is silicon carbide (SiC) devices, which are used e. g. in electric vehicles as well as their charging infrastructure and in inverters for renewable energies (solar and wind). These components are also manufactured by our customers with our CVD systems.

Our systems in the field of **optoelectronics** are used by customers to manufacture lasers for optical data transmission and 3D sensor technology. They are used in smartphone facial recognition, robotic environment sensing, autonomously driving vehicles, and other applications requiring context recognition. Furthermore, our customers use AIXTRON equipment to manufacture pixels in display applications- currently deployed productively in the area of large area displays, and in the future also in the area of Micro LEDs. Other applications of our equipment include the production of specialty LEDs, such as red, orange, and yellow (ROY) LEDs for automotive lighting and indoor farming, among others. UV LEDs for environmentally friendly disinfection of water and air are also included.

AIXTRON is constantly working on the improvement of existing technologies and products. In recent years, AIXTRON has introduced several new system generations and technologies. In addition to the continuous improvement of material performance, the focus is particularly on further optimizing the systems for high-volume production through more automation, such as the fully automated AIX G5+ C for GaN devices or the AIX G5 WW C for next-generation silicon carbide (SiC) applications.

Business Processes

Manufacturing and Procurement

AIXTRON manufactures its prototype and customer equipment at its production sites in Herzogenrath and in Cambridge. Production focuses on assembly, testing and qualification. The Group procures the components required to manufacture the equipment and the majority of the pre-assembled modules from external suppliers and service providers. The performance of our supply chains is being continuously improved both to secure higher overall demand and to compensate for fluctuating delivery capabilities. On the basis of a rolling forecast, the necessary measures to ensure material availability are taken in close coordination between sales, purchasing and production. This also includes the early identification of bottlenecks in raw materials and components. Together with the partners in the supply chain, suitable strategies are applied to ensure optimum availability while keeping an eye on inventories. The assembly of the equipment is carried out with the help of external service providers in the company's own production facilities or, if required, in rented production facilities and in accordance with AIXTRON’s technical specifications.

Subsequent testing and qualification of the equipment is carried out by AIXTRON staff- as is production control and quality assurance throughout the production process.

AIXTRON’s manufacturing facilities have process-oriented quality management systems certified in accordance with ISO 9001:2015. In the year 2021, the certification of the quality management systems of AIXTRON SE and AIXTRON Ltd. was confirmed without any deviation by external auditors.

Employees

AIXTRON's leading position in the global market and its ability to continuously innovate are driven by the commitment and excellent knowledge of our employees. Our human resources management is therefore designed to create an inspiring, safe, and supportive environment, as well as to foster appreciative and cooperative interaction.

Attracting and retaining highly qualified and committed specialists and managers is a key success factor. Competing for the best talent, we are continuously enhancing our attractiveness as an employer brand. In addition to a comprehensive, informative careers site and other communication channels, we use a wide variety of target group-oriented recruitment channels, increasingly in social media. Personal contact with potential applicants at job fairs and similar events, as well as in the context of our close cooperation with universities worldwide, is also of great importance to us.

AIXTRON is working consistently to establish a modern corporate culture with a mature leadership culture and good teamwork. We attach great importance to supporting our employees competently and in a spirit of partnership, to promoting them individually, and to challenging them with future-oriented projects and tasks. As part of our company-wide personnel development concept, we offer our employees a wide range of measures for continuous training as well as individual advanced training measures and development opportunities.

Another central pillar of our corporate culture is AIXTRON's commitment to diversity and equal opportunities, which form an essential basis for our innovative strength and competitiveness. We explicitly encourage collaboration in mixed teams and between different cultures and nationalities. We also attach great importance to an appropriate gender balance and a balanced age structure.

In the 2021 fiscal year, the number of employees in the Group decreased slightly by approximately 1.4% from 728 at the end of 2020 to 718 as at 31 December 2021. This reflects the reduced headcount resulting from the restructuring of the APEVA Group, which was offset by a significant increase in AIXTRON SE's headcount due to the continued strong growth of the Group's core business. As in previous years, the majority of employees are located in Europe.

Customers and Geographic Regions

AIXTRON's customers span the power electronics, optoelectronics, and display industries. For example, they manufacture high-performance semiconductor devices for applications in IT infrastructure, consumer electronics, power generation, and for use in the field of electromobility. In the optoelectronics sector, they manufacture lasers for data transmission, consumer electronics and automotive applications, among others. Customers in the display industry, on the other hand, focus among other things on the manufacture of new types of LEDs (Mini and Micro LED) to address displays of all sizes, from smartwatches to large-area display panels. Some of these customers are vertically integrated device manufacturers who serve the entire value chain as far as the end consumer. Others are independent manufacturers of components or epitaxial wafers who deliver the products made on AIXTRON equipment to the next link in the value chain, namely, the electronic device manufacturers. The Company's customers also include research centers and universities, which particularly promote research into new types of materials.

AIXTRON's products are distributed worldwide. The market segments vary regionally. Most of the world's leading electronic device manufacturers produce in Asia and consequently, the majority of AIXTRON's sales continue to be delivered into this region.

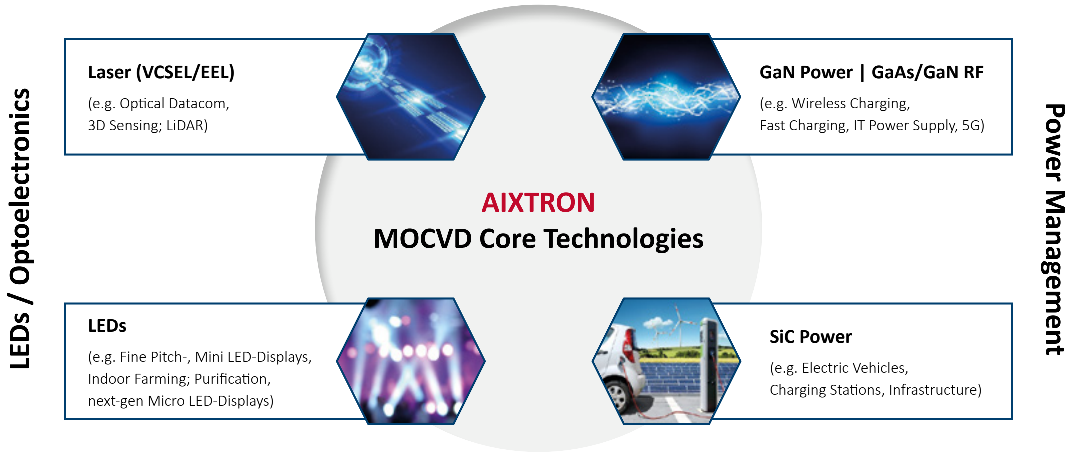
See also "Development of Revenues" in this report for a breakdown of revenues by region.

Objectives and Strategies

With the development, manufacture, distribution and maintenance of thin film deposition systems for complex materials, AIXTRON addresses growing future markets along a variety of end-user applications, such as consumer electronics, automotive, telecommunications, and power generation.

As a technology leader in the field of these complex deposition processes, AIXTRON's strategy is to optimally address each of the many different and rapidly growing end markets through a clear focus on its core competencies, and to reinvest the earnings for the development of further promising future applications.

Technology Portfolio for Complex Material Deposition



It is our objective to secure and further expand our market position in the addressed focus markets in the long term through innovation and technology leadership, and to access adjacent markets by leveraging our core competencies. The sustainability of the business, increasing revenues and profitability are the focus of our strategic planning.

The core of AIXTRONs strategy is to diversify its fields of application while maintaining its focus on AIXTRON’s core competencies. The targeting of applications and markets that are attractive to AIXTRON in terms of size, growth, profitability and differentiation potential is currently very successful. This is because these applications from different industries, such as consumer electronics, IT infrastructure and electromobility, are subject to growth dynamics that are largely independent of one another. Thus, AIXTRON does not depend on only one single segment but strives to be robust against fluctuations in individual application markets across the entire range of applications. To this end, AIXTRON actively develops a broad technology portfolio through in-house or sponsored developments, through collaborations, or through targeted acquisitions. The process of maintaining and developing technology ecosystems in close cooperation with customers and, where applicable, their customers or technology partners, allows AIXTRON to establish new technologies and open up new applications.

AIXTRON focuses on markets where the use of AIXTRON technology allows for a clear differentiation from competitors and thus creates value added for customers. These include, among other things, achieving high yields on the wafer by realizing high uniformity of the physical properties of the deposited layers while simultaneously maintaining high throughput, low material and maintenance costs. An essential differentiating factor is the high productivity and cost efficiency of our systems, e. g. through high throughput of the systems thanks to the so-called batch reactor, in which several wafers can be produced simultaneously, or through the reactor architecture-related efficiency of material usage. Markets with not enough potential for technical differentiation offer only low margins.

AIXTRON pursues a platform strategy with its AIX 2800G4 and AIX G5 and AIX G5 WW families of systems that are based on the planetary concept. With a high proportion of identical parts, the systems can be configured according to customer's specification. As outlined in the previous section, this allows for a broad diversification and the addressing of numerous applications. In addition to the AIX 2800G4, AIX G5 and AIX G5 WW system families, which address customers with high production volumes, AIXTRON sells a showerhead-based system series, to universities and niche markets. This allows AIXTRON to come into contact with emerging applications at an early stage and to understand customer needs in new markets.

Our OLED-subsidiary APEVA was initially restructured in the second quarter of 2021 and focused on the Chinese market. However, as customers in this market are also opting for Micro LED as the technological basis for the development of the next generation of displays even faster than originally expected, the shareholders of APEVA have decided not to invest further and to wind up the APEVA Group.

Control System

Since the various activities of the Group are largely integrated from an operational perspective, management by means of performance indicators is carried out by the Executive Board of AIXTRON SE at Group level. The Executive Board's development projections for the Group therefore also apply to AIXTRON SE.

Key Financial Performance Indicators

The most relevant performance indicators for the AIXTRON Group are order intake, revenues, gross margin and earnings before interest and taxes relative to revenues (EBIT margin). They are determined monthly in the AIXTRON reporting system and made available to management in a comprehensive report. This enables the Executive Board to identify growth drivers at an early stage, to analyze developments during the year and take prompt countermeasures in the event of any discernible deviations.

AIXTRON aims to achieve organic revenue growth, exchange rate effects are excluded when setting revenue targets. Order intake reflects the investment behavior of our customers and thus serves as an early indicator for revenues. The period between receipt and delivery of an order for an MOCVD system is generally between six and eight months.

Gross margin, which expresses gross profit in relation to sales, provides information on the profitability and return on investment of AIXTRON's operating business. The EBIT margin is used as an additional important indicator for operational management and analysis of the earnings situation.

Non-financial Performance Indicators

Since the introduction of the new Executive Board remuneration system in fiscal year 2020, AIXTRON has defined annual sustainability targets for the Executive Board as part of the Long Term Incentive (LTI), which are to be achieved over a three-year reference period, and includes corresponding non-financial performance indicators in the Group management.

The following non-financial performance indicators have been defined for the LTI reference periods 2020 to 2022 and 2021 to 2023 starting in fiscal years 2020 and 2021 respectively:

- AIXTRON Group's energy consumption
  (measured in kWh standardized to the most important consumption drivers)
- the further training of AIXTRON Group's employees
  (measured in hours of training completed)

New non-financial performance indicators have been defined for the LTI reference period starting in fiscal year 2022. Essentially these are:

- Proportion of environmentally sustainable sales revenue, capital expenditure (CapEx) and operating expenses (OpEx) as defined by the EU Taxonomy Regulation.

The adoption of the new sustainability criteria of the EU Taxonomy Regulation in the Executive Board's LTI-performance in fiscal year 2022 is intended to ensure the environmental sustainability of the company's activities, particularly in light of the expected growth of the company. The non-financial performance indicators defined for the LTI-tranches starting in 2020 and 2021 become secondary with the introduction of the EU Taxonomy Regulation and are no longer considered essential for the implementation of the corporate strategy. Nevertheless, management continues to attach great importance to improving these performance indicators also in the medium and long term.

Research and Development (R&D)

In addition to the R&D center at its headquarters in Herzogenrath, AIXTRON also operates a R&D laboratory in Cambridge, United Kingdom. These in-house laboratories are equipped with AIXTRON systems and are used to research and develop new equipment, materials and processes for the production of semiconductor structures.

Focus on Innovation

The Group's R&D activities in 2021 again included development programs for future technologies and new products, as well as continuous improvement of AIXTRON's existing products. In order to increase industrial maturity and repeatability, products were optimized along the entire value chain as well as maintenance intervals were optimized via strategic approaches, e.g. through design improvements of externally supplied components or through improved data analysis. In addition, AIXTRON is working on customer-specific development projects and researching new technologies, often in the context of publicly funded projects.

The Group’s R&D capability remains of important strategic significance, as it provides for a competitive, leading edge technology portfolio and supports the future business development. Therefore, AIXTRON is committed to investing specifically in research and development projects to retain or to expand the Company’s leading technology position in MOCVD equipment for applications such as lasers, Micro LEDs, specialty LEDs and for the production of wide-band-gap materials for power electronics. In addition, the Group is working on novel 2D-nanostructures, which are seen as having great potential in research in line with international predictions (roadmaps).

For the consistent technological evolution of our product portfolio, we have invested EUR 56.8 million, or around 13% of revenues ((2020: with 58.4 Mio. EUR aprox. 22%), in research and development (R&D) in 2021. At year-end 2021, 223 of AIXTRON Group’s total 718 employees were engaged in research and development activities (2020: 254 of 728 employees).

Technology protection through patents

AIXTRON aims to secure its technology by patenting and protecting inventions, provided it is strategically expedient for the Company to do so. As of December 31, 2021, the Group had 269 (thereof AIXTRON SE: 243) patent families available (December 31, 2020: 274 patent families). For 9 patent families (AIXTRON SE: 7), patent protection was applied. Usually, patent protection for inventions is applied for in those markets relevant to AIXTRON, specifically in Europe, China, Japan, South Korea, Taiwan and the United States. AIXTRON's patent portfolio is evaluated annually and adjusted accordingly. The individual patents expire between 2022 and 2041. In addition, AIXTRON continuously performs a worldwide patent analysis in order to identify and assess changes in the competitive environment at an early stage.

Research projects 2021

AIXTRON is working on targeted research projects in areas that are considered to have growth potential in the future. The **“MOCVD 4.2”** project aimed to increase the production suitability of our technology for applications in power electronics in particular, as well as in photonics and sensor technology. An improvement in MOCVD-technology and effectiveness was achieved to meet the international requirements of a versatile, highly flexible key technology with frequently changing customer requirements, processes, products and material systems. The project was successfully completed in December 2021. The **“MehrSi”** research project to increase yield in solar cells was also successfully completed in 2021 with all key project targets achieved. Thus, a central stage in the development of economic solutions for the industrial use of multi-junction solar cells for power generation was reached. Initial results are available for our **“AdaptAR”** research project, in which an augmented reality system with a digital twin as a data basis is being developed, and our 2D Experimental Pilot Line **“2D-EPL”** initiative as part of the European Commission's “Graphene Flagship” project is running according to plan and with great promise. A new facility has been constructed here and is currently under construction.

Examples of the Group's research work include the “NeuroSys”, “OIP4NWE” and “AIIR-Power”, on which AIXTRON worked intensively in 2021:

As a partner of the future cluster "**NeuroSys - Neuromorphic Hardware for Autonomous Artificial Intelligence Systems**", AIXTRON is responsible for building and optimizing the necessary MOCVD systems for the new application. "NeuroSys" researches adaptive and energy-efficient neuromorphic AI chips with the aim of enabling intelligent and resource-efficient on-site data processing, thus creating an essential prerequisite for artificial intelligence (AI) applications. This is considered the key to the widespread use of AI, especially in autonomous vehicles, medical technology and sensor networks for intelligent production or urban regions. Very thin layers of novel 2D materials, only a few atomic layers thick, are needed as the material basis for the neuromorphic chips. The production of these materials on the largest possible wafers is AIXTRON's core competence. As part of this and other projects, AIXTRON will develop the world's most powerful technology platform for the industrial production of these materials and operate it in its laboratory in Herzogenrath.

The project "**OIP4NWE - Open-Innovation Photonics pilot for NWE**" is researching Integrated Photonics together with TU Eindhoven. This new technology has the potential to revolutionize communication technology, medical diagnostics and measurement technologies. A newly developed automated MOCVD reactor for optimal layer quality and with high productivity is now available for research and pilot production of optoelectronic integrated circuits in Eindhoven.

The "**AIIR-Power**" project, newly launched in 2020, aims to develop AI techniques to optimize optoelectronic device designs and their epitaxial fabrication, and apply them to realize PPCs (photonic power converters) for telecom wavelengths. Ubiquitous digitalization, automation, and the Internet of Things require constant power and data flows. With the emerging technology of photonic power transfer, also known as "power by light," power and data transfer can be combined in a single optical link, enabling electrically isolated, interference-free remote operation. By using optical telecommunication wavelengths, the potential applications of such power-by-light systems can be extended to new remote locations not previously considered, and unlimited remote power can be provided. The unique capabilities of the project partners from Canada and Germany create synergies that would be inaccessible to either subgroup alone.

Report on Economic Position

Global Economy

As a manufacturer of capital goods, AIXTRON may be affected by the development of the general economic environment, as this could impact its own suppliers, manufacturing costs, and sales opportunities, driven by the customers' willingness to invest.

In 2021, the global economy recovered significantly from the COVID-19-related slump of the previous year. On the one hand, this is thanks to the COVID-19 vaccines that are now available. On the other hand, the recovery of the global economy has been supported by further fiscal policy measures, particularly in the US. At the same time, the recovery is taking place at different speeds - depending, for example, on the uneven distribution of vaccines, national fiscal and monetary policy options, or the different extent of the pandemic-related burden on the individual economies, e. g. predominantly production versus tourism-oriented orientations. For example, the economies of China and the USA, which are particularly important for AIXTRON, have recovered from the crisis much faster than many other countries. However, in the second half of the year, the recovery was partially slowed down by pandemic-related supply bottlenecks and sharply rising raw material prices. In addition, the development remains subject to numerous uncertainties. These include in particular the global progress of the vaccination programs, the inflation trend, which poses a difficult task for monetary policy in particular, and also the employment trend, which is not keeping pace. Overall, in the January 2022 update of its World Economic Outlook, the International Monetary Fund (IMF) sees global economic output growing by 5.9% in 2021, following a 3.1% decline in 2020. The growth rate for the industrialized nations is 5.0% (2020: -4.5%), while the growth rate for the emerging and developing countries is 6.5% (2020: -2.0%). Meanwhile, world trade grew by 9.3% (2020: -8.2%). Correspondingly, the strongly export-oriented German mechanical and plant engineering sector also developed positively. According to reports by the German Engineering Federation (Verband Deutscher Maschinen- und Anlagenbau e. V. / VDMA)[1], the sector recorded a real increase in order intake of 33% in the first eleven months of the year. Orders from abroad increased by 41%, while domestic orders rose by 18%. Overall, the trend leveled off over time, as the economy continues to perform well but catch-up effects have now been worked off.

1) VDMA, Order Intake in Mechanical Engineering: Eastern Germany and Germany, November 2021

The demand for AIXTRON products continues to be largely dependent on industry-specific developments, such as the introduction of new applications in consumer electronics, IT infrastructure, electromobility, or demand in sub-segments of the global semiconductor market, which continued to be very robust overall - also due to the trend towards digitalization, which was reinforced by the pandemic. In addition, AIXTRON can continuously rely on a stable and uninterrupted supply chain.

Expectations about the US Federal Reserve Bank's (Fed's) future interest rate policy had a major influence on the development of the US dollar exchange rate in 2021. Accordingly, the exchange rate reacted strongly to many news, be it inflation rates or bond yields, which pointed to an approaching end of the loose monetary policy. While the US dollar traded in a relatively narrow range around the 1.20 USD/EUR mark in the first half of the year, it gained steadily in value in the second half of the year as inflationary pressure increased. The US dollar closed the year at 1.1372 USD/EUR on December 31, 2021 (2020: 1.2232 USD/EUR), thus strengthening by 7% overall. AIXTRON applied an average USD/EUR exchange rate of 1.19 USD/EUR in fiscal year 2021 (Q1/2021: 1.22 USD/EUR; Q2/2021: 1.20 USD/EUR; Q3/2021: 1.18 USD/EUR; Q4/2021: 1.15 USD/EUR). On average for the year, the exchange rate was thus just above the previous year's average (2020: 1.14 USD/EUR). Compared to the previous year, this had a correspondingly negative impact on the Group's US-dollar-denominated revenues.

The AIXTRON Management continues to carefully monitor the developments of the global economy and the financial markets to decide what can potentially be done to mitigate negative exogenous effects on AIXTRON's business. In 2021, no forward exchange contracts or other hedging transactions were entered into. As of December 31, 2021, no currency hedging contracts were in place. The Executive Board reserves the right to carry out hedging transactions in the future, should this be deemed appropriate.

Competitive Positioning

Competitors in the market for CVD/MOCVD equipment are Veeco Instruments, Inc. (USA, "Veeco"), Taiyo Nippon Sanso (Japan, "TNS"), Tokyo Electron Ltd. (Japan, "TEL"), Advanced Micro-Fabrication Equipment Inc. (China, "AMEC"), Tang Optoelectronics Equipment Corporation Limited (China, "TOPEC") as well as LPE (Italy) and Nuflare Technology Inc. (Japan, "Nuflare"). Other companies are also continuing to try to qualify their own MOCVD-systems with their customers. For example, Technology Engine of Science Co. Ltd. (South Korea, "TES"), Zhejiang Jingsheng Mechanical (China, "JSG") and HERMES Epitek (Taiwan, "HERMES") are working on the development of their own MOCVD system solutions and are trying to establish them in the market.

Based on the published financial results of competitors and own estimates, AIXTRON sees its global market leadership for MOCVD equipment in 2020 confirmed. AIXTRON thus holds the top position for the fifth year in a row: accordingly, AIXTRON's market share amounted to 58%, followed by Veeco (USA) with 26% and AMEC (China) with 16%. At the same time, the global market for MOCVD equipment decreased slightly in 2020 compared to the previous year, totaling USD 438 million (2019: USD 488 million). For fiscal year 2021, no current market share figures from independent market analysts are yet available.

Key Target Markets

Market for power semiconductors based on Wide-Band-Gap (WBG) materials gallium nitride (GaN) and silicon carbide (SiC)

Power semiconductors based on Wide-Band-Gap (WBG) materials are one of the main applications of AIXTRON's deposition technology. These materials enable the production of very compact and highly efficient power supplies and AC/DC as well as DC/DC converters. They are therefore increasingly used in a wide range of applications that can cover a wide power range. WBG power semiconductors reduce conversion losses by up to 50% and thus contribute significantly to increasing energy efficiency and reducing CO2 emissions. There are two main groups of WBG power semiconductors: GaN (gallium nitride) and SiC (silicon carbide).

Market for gallium nitride (GaN) power semiconductors

GaN semiconductor devices are used primarily in the low and medium power and voltage classes, such as in power supplies for smartphones and laptops, and in power supplies for servers and other IT infrastructure. GaN semiconductor devices had achieved significant volume in the market for the first time in 2020 and have since seen rapid growth, particularly in fiscal 2021. Customers are continuously tapping into new applications, for example in the field of micro inverters in the photovoltaic sector or on-board chargers in the field of electromobility. In addition, the customer base for AIXTRON's GaN semiconductor equipment is continuously expanding, while existing customers are increasing their production capacities.

Due to the wide range of applications, Yole Développement (Yole) analysts expect the market for GaN power semiconductors to grow very strongly, from USD 46 million in 2020 to USD 1.1 billion in 2026, corresponding to a compound annual growth rate (CGAR) of 70% between 2020 and 2026.

Furthermore, GaN semiconductor devices are increasingly used in high-frequency applications. In 5G telecommunication networks and - likely - in subsequent network generations such as 6G, the advantage of GaN technology of lower power losses at high frequencies will come into play. As a result, more and more manufacturers are switching their production of high-frequency switches from silicon to GaN. Yole analysts expect the market for GaN high-frequency semiconductor devices to grow from USD 891 million in 2020 to USD 2.4 billion in 2026 at a compound annual growth rate (CAGR) of 18%.

Market for silicon carbide (SiC) power semiconductors

WBG power components made of silicon carbide (SiC) also continued their growth course in 2021. They are particularly suitable for use in higher power and voltage classes. Fields of application are primarily electric vehicles and their fast charging stations, but also converters in the field of photovoltaics and wind energy and other electric drives. In these applications, SiC enables a significant reduction in conversion losses, resulting in a greater range per battery charge in vehicles and a higher amount of energy delivered in the power generation sector.

Driven by significantly increased awareness of the importance of energy efficiency and CO2 reduction, both in the regulatory and private sectors, vehicle manufacturers worldwide have raised their targets for powertrain electrification. This trend is increasingly accelerated by the push in numerous states to set specific dates for a halt in registrations or sales of new vehicles with internal combustion engines.

Based on this trend, Yole forecasts that the SiC device market will grow from under USD 1.1 billion currently to USD 4.4 billion by 2026 at a CAGR of 32%. According to the analysts, this is particularly due to the development of electric cars and the corresponding fast charging infrastructure.

LED Market

Red, orange and yellow LEDs (ROY LEDs) are used in Mini LED displays, among other things, in large-format color displays for sports stadiums, airports and shopping malls, as well as in automotive taillights or for indoor farming. In addition, televisions and monitors in the premium segment are increasingly being equipped with Mini LEDs for backlighting. The market for infrared and ROY LED manufacturing equipment is expected to double from 2020 to 2025, reaching USD 108 million (Epitaxy Growth Equipment for More than Moore Devices Report, Yole, 2020). According to Yole, the demand for the global area of direct-emitting, large-area LED display walls is growing at an average rate of 63% per year between 2017 and 2024.

The market for UV LEDs (Ultra-Violet Light Emitting Diodes) is another specialized segment in the LED market that AIXTRON addresses. UV LEDs are used for curing plastics and disinfecting surfaces, circulating air and (drinking) water. Due to the increasing demand for hygiene, this market is expected to gain importance in the future. According to LEDinside (Deep UV LED Application Market and Branding Strategies, LEDinside 2020), the market for UV LEDs is expected to grow at a high rate from USD 310 million in 2020 to USD 1.4 billion in 2025, representing an annual growth rate of 35%.

Market for Micro LEDs

According to LEDinside, the greatest growth potential in the field of LEDs is the market for Micro LEDs. Analysts expect Micro LEDs to be used initially in very small displays such as smartwatches and very large displays such as large-screen premium TVs. In the long term, other potential applications include displays in smartphones, tablets and notebooks. LED technology is currently still in the early stages of development, so estimates of future market size by various analysts diverge widely. For example, LEDinside predicts the Micro LED market to grow from USD 318 million in 2020 to USD 2.9 billion in 2025. As Micro LED technology matures, AIXTRON expects the currently still very young market for Micro LEDs to differentiate both technically and commercially.

Market for lasers-based optical data transmission

The volume of data transmitted via fiber optic cable continues to grow exponentially, driven by the increasing use of cloud computing and Internet services. Especially the growing use of video-on-demand, as well as the communication of networked devices via the Internet ("Internet of Things") contribute to increasing data volumes. In addition to the data volumes, the enormously fast transmission at the speed of light for optical data transmission also plays a major role. Lasers, which are manufactured on AIXTRON equipment, are key components for high-speed optical data transmission. The growth in global data traffic due to mobile telecommunications, the switch to 5G standards, and data transfer via optical fibers increase the demand for lasers as optical signal generators, photodiodes as receivers, and optical amplifiers and switches.

Market research firms such as Yole and Strategies Unlimited expect investment in laser-based communications to continue to increase to accommodate growing data traffic. For this reason, market research firm Yole predicts that revenues from transceivers used in telecommunications will grow at a compound annual growth rate of 14% from 2020 to 2025. The total market volume in 2025 is forecast by Yole to exceed USD 20.9 billion.

Laser-based 3D Sensor Market

Laser-based 3D sensors are often used in high-end mobile phones. Since this technology was introduced to the market with the iPhone X in 2017, Apple has been using it in its third-generation smartphones and is now also using it in its tablet series. In addition, more and more mobile phone manufacturers are equipping their models with 3D sensors. With these sensors, the environment can be captured in three dimensions, which is important for many applications, e. g. augmented reality. Consumer electronics, for example, will be the main demand driver for laser-based 3D sensors in the next few years, according to market research company Yole. Yole expects surface emitting lasers to grow from USD 1.2 billion in 2021 to USD 2.4 billion in 2026, representing a compound annual growth rate ("CAGR") of 13.5%.

In addition to consumer electronics applications, edge and surface emitting lasers are increasingly being used in the industrial and automotive sectors for 3D sensing. Yole expects a strong increase in demand for these components by 2026, especially from the automotive industry, as an element for distance measurement in driver assistance systems and in autonomous vehicles (LiDAR).

Business Development

The global COVID-19 pandemic continued to have a significant impact on the world economy and global supply chains in fiscal year 2021. However, through early initiated and consistently applied protective measures, this had only a minor impact on AIXTRON's workforce. AIXTRON was also able to effectively mitigate the strain in the global supply chains through early implemented countermeasures, resulting in revenue growth of 59% in 2021. Accordingly, we again met our guidance issued in February 2021 and increased during the year in all key performance indicators without exception.

In particular, a strong increase in demand for AIXTRON's Gallium Nitride (GaN) power device production equipment characterized the reporting year. AIXTRON's other products also experienced strong demand in 2021, for example, systems for the production of lasers for optical data communication and 3D sensing, systems for LEDs, and increasingly systems for Micro LEDs. Customer demand also increased for equipment to manufacture energy-efficient power electronics based on silicon carbide (SiC), as well as for equipment to manufacture components for wireless telecommunications. With orders totaling EUR 497.3 million (2020: EUR 301.4 million), we recorded the highest order volume since 2011 in fiscal year 2021. As expected, revenues also developed very positively and, at EUR 429.0 million (2020: EUR 269.2 million), were in line with the forecast given and also reached the highest level since 2011. At 42%, the gross margin achieved was slightly above expectations, mainly due to the strong increase in the USD exchange rate in the 4th quarter. The increased operating expenses of EUR 82.5 million included higher variable compensation components as well as one-time expenses for our subsidiary APEVA in the amount of EUR 3.9 million. The operating result was EUR 99.0 million with an EBIT margin of 23% (2020: EUR 34.8 million; 13%). This resulted in a net profit of EUR 94.8 million (2020: EUR 34.5 million). Free cash flow (cash flow from operating activities adjusted for changes in financial assets- investments + proceeds from disposals) of EUR 48.7 million (2020: EUR 14.0 million) was reported for the financial year 2021.

In the year 2021, AIXTRON has been actively pursuing the renewal of its product portfolio. The next generation of systems in the GaN power electronics, SiC power electronics and laser / Micro LED market segments have made great progress in development and are currently undergoing trials with first customers. In addition, we have won further well-known customers such as Bosch and Nexperia for our equipment technology for the efficient large-scale production of high-performance silicon carbide power electronics.

Our OLED subsidiary APEVA was initially restructured in the second quarter of 2021 and focused on the Chinese market. However, as customers in this market are also opting for Micro LED as the technological basis for the development of the next generation of displays even faster than originally expected, the shareholders of APEVA have decided not to make any further investments in APEVA , to wind up the APEVA Group and to recognize corresponding impairment losses.

In order to achieve a sustainable profitable development of the AIXTRON Group in the future, our product portfolio focuses exclusively on product lines with a positive earnings contribution or those that promise a significant return on investment (ROI) in the foreseeable future.

Results of Operations

Development of Orders

	2021 EUR million	2020 EUR million	2021-2020 in EUR	%
Total order intake incl. spares & services	497.3	301.4	195.8	65
Equipment order backlog (end of period)	214.6	150.9	63.7	42

In the fiscal year 2021 US dollar-based **order intake** and **order backlog** have been recorded at the budget exchange rate of 1.25 USD/EUR (2020: 1.20 USD/EUR). Spares & service orders are not included in the order backlog.

In 2021, **total order intake** including spares & services stood at EUR 497.3 million, thus significantly higher than the previous year's figure. This development was driven in particular by continuously strong demand from the fields of power electronics, optical data communication and LEDs. In Q4/2021, order intake at EUR 119.7 million was up 5% against the previous quarter (Q3/2021: EUR 114.2 million).

At EUR 214.6 million, the **equipment order backlog** as of December 31, 2021, was also higher than the order backlog of EUR 150.9 million at the end of 2020 (2021 budget rate: 1.25 USD/EUR; 2020 budget rate: 1.20 USD/EUR). Compared to the end of the previous quarter, the order backlog decreased due to the high number of shipments in the fourth quarter by 20% at year-end (September 30, 2021: EUR 267.6 million).

In line with strict internal procedures, AIXTRON has defined clear conditions that must be met for the recording of equipment orders in order intake and order backlog. These conditions include the following requirements:

1 the receipt of a firm written purchase order,
2 the receipt or securing of the agreed down payment,
3. accessibility to the required shipping documentation,
4. a customer confirmed agreement on a system specific delivery date.

In addition, and taking into account current market conditions, the Management Board reserves the right to assess whether the actual realization of each system order is sufficiently likely to occur in a timely manner. If, as a result of this review, Management comes to the conclusion that the realization of an order is not sufficiently likely or involves an unacceptable degree of risk, Management will exclude this specific order or a portion of this order from the recorded order intake and order backlog figures until the risk has decreased to an acceptable level. The order backlog is regularly assessed and – if necessary – adjusted in line with potential execution risks.

Development of Revenues

Revenues in fiscal year 2021 amounted to EUR 429.0 million and were thus about 59% higher than in the previous year (2020: EUR 269.2 million). EUR 62.4 million or 15% of revenues in fiscal year 2021 were generated from the sale of spare parts and services. In total, revenues with MOCVD systems rose by around 64% year-on-year. In particular, the strong increase in demand for MOCVD equipment for the production of GaN power devices led to a doubling of equipment sales in the power electronics segment. The optoelectronics business also grew, driven in particular by continued strong demand from the optical data transmission sector for fiber optic networks. Due to demand, particularly from the field of LED displays, and initial demand from the field of Micro LEDs, AIXTRON also grew in this segment. The revenue shares developed as follows: Power electronics contributed 38% of equipment revenues, followed by optoelectronics with 37% and specialty LEDs with 23%.

Revenues by Equipment, Spares & Service

	2021		2020		2021-2020	
	m EUR	%	m EUR	%	m EUR	%
Equipment revenues	366.5	85	223.0	83	143.5	64
Service, spare parts, etc.	62.4	15	46.2	17	16.2	35
Total	**429.0**	**100**	**269.2**	**100**	**159.7**	**59**

At EUR 299.9 million, demand from customers in Asia continued to account for the majority of total revenues in 2021. The lower contribution from customers outside of Asia were a result of the regional mix of customers addressing the above-mentioned demand drivers.

Revenues by Region

	2021		2020		2021-2020	
	m EUR	%	m EUR	%	m EUR	%
Asia	299.9	70	197.0	73	102.9	52
Europe	85.9	20	41.0	15	45.0	110
Americas	43.2	10	31.3	12	11.9	38
Total	**429.0**	**100**	**269.2**	**100**	**159.7**	**59**

Development of Results

Cost of Sales, Gross Profit, Gross Margin

Cost of sales amounted to EUR 247.5 million in the past fiscal year (2020: EUR 161.0 million) and decreased relative to revenues to 58% (2020: 60%). This is mainly due to a more favorable product-mix. This resulted in a gross profit of EUR 181.5 million in the fiscal year, which corresponds to a gross margin of 42%.

Development of Results

	2021 Full Year		2020 Full Year		+/-	
	m EUR	% Rev.	m EUR	% Rev.	m EUR	%
Cost of sales	**247.5**	**58**	**161.0**	**60**	**86.5**	**54**
Gross profit	**181.5**	**42**	**108.3**	**40**	**73.2**	**68**
Operating expenses	**82.5**	**19**	**73.5**	**27**	**9.0**	**12**
Selling Expenses	10.0	2	9.7	4	0.3	3
General and administration expenses	25.4	6	18.0	7	7.4	41
Research and development costs	56.8	13	58.4	22	-1.6	-3
Other operating expenses (income)	(9.7)	-2	(12.6)	-5	-2.9	-23

Operating Expenses

In absolute terms, operating expenses increased significantly in the 2021 fiscal year compared to the previous year, but they declined relative to revenues. In absolute terms, operating expenses increased from EUR 73.5 million in the year 2020 to EUR 82.5 million in the past fiscal year. Contributing to the increase in operating expenses were higher variable remuneration components. Furthermore, additional restructuring expenses and other non-recurring expenses for APEVA in the total amount of approximately EUR 3.9 million were incurred. EUR 3.2 million of these expenses had been recognized in Q2 2021 in connection with the re-alignment to the Chinese market. Due to the faster than expected orientation of customers towards Micro LED also in this market and the resulting decision not to invest further in APEVA and to wind up the group, further depreciation and other expenses in the amount of EUR 0.7 million were incurred. In the previous year, a special effect due to a change of use for a production facility had led to other operating income in the amount of EUR 2.9 million.

The following individual effects must be taken into account:

Selling, general and administrative expenses were higher in a year-on-year comparison at EUR 35.4 million (2020: EUR 27.7 million). Relative to revenues, selling, general and administrative expenses amounted to 8% (2020: 10%). The development was mainly attributable to higher variable remuneration.

Research and development expenses, including expenses for OLED development activities, decreased slightly by 3% year-on-year to EUR 56.8 million. This is mainly due to a reduction in development expenses for OLED technology, which was offset only to a lesser extent by an increase in the development expenses for next-generation MOCVD equipment.

Key R&D Information

	2021	2020	2021-2020
R&D expenses (million EUR)	56.8	58.4	-3%
R&D expenses, % of revenues	13	22	

Net other operating income and expenses in 2021 resulted in an income of EUR 9.7 million (2020: income of EUR 12.6 million). The high positive figure for the previous year was significantly influenced by the above-mentioned special effect from the reversal of impairment losses due to the change of use of a production facility (EUR 2.9 million).

Other operating income includes grants for **publicly funded development projects** amounting to EUR 8.9 million (2020: EUR 8.1 million). In fiscal year 2021, a **net foreign exchange gain** of EUR 1.2 million (2020: EUR 0.8 million loss) was recorded from transactions in foreign currencies and the translation of balance sheet items.

At EUR 79.3 million, **personnel costs** in fiscal year 2021 were 20% higher than the EUR 66.1 million in 2020. This increase was mainly due to higher variable expenses and the above-mentioned restructuring charges.

Operating Result (EBIT)

The **operating result (EBIT)** improved year-on-year by 184% and amounted to EUR 99.0 million in the fiscal year 2021 (2020: EUR 34.8 million). This resulted in EBIT margin of 23% (2020: 13%). This development is mainly due to the year-on-year increase in revenues and the related gross margin and is thus attributable to the business and cost development described above. Further details are provided in the consolidated statement of profit or loss in the consolidated financial statements on page 120.

Result before Tax

Profit before tax at EUR 98.9 million in 2021 was clearly higher than in the previous year (2020: EUR 35.1 million). This includes net interest result of EUR -0.05 million.

Interest and Taxes

	2021 m EUR	2020 m EUR	2021-2020 m EUR	%
Net interest income	**-0.05**	**0.24**	**-0.29**	**-119**
Interest income	0.23	0.35	-0.12	-33
Interest expense	-0.28	-0.10	-0.18	168
Tax income/(expense)	**-4.09**	**-0.60**	**-3.49**	**577**

In 2021, AIXTRON reported an **income tax expense** of EUR 4.1 million (2020: EUR 0.6 million income tax expense). This includes income from the capitalization of deferred taxes on loss carryforwards in the amount of EUR 9.6 million due to expected future profits.

Consolidated net income for the year

The AIXTRON **Group's consolidated net income** in fiscal year 2021 was EUR 94.8 million, or 22% of revenues (2020: EUR 34.5 million or 13%).

Assets and Liabilities

The Balance Sheet Total as of 31 December 2021 increased year-on-year to EUR 740.7 million (December 31, 2020: EUR 590.4 million). The complete consolidated statement of financial position can be found in the consolidated financial statements on page 122.

Assets

Property, plant and equipment increased from EUR 63.5 million as of 31 December 2020 to EUR 74.0 million as of 31 December 2021 due to increased investments, particularly in laboratory plant and equipment.

Goodwill was EUR 72.3 million compared to EUR 71.0 million as of December 31, 2020. The difference is completely due to exchange rate fluctuations. No impairment losses were recognized. Further information on goodwill is provided in Note 12 "Intangible assets" in the Notes to the Consolidated Financial Statements.

Other intangible assets decreased to EUR 2.2 million as of 31 December 2021 (31 December 2020: EUR 2.9 million), as depreciation was slightly higher than capital expenditures.

Inventories, including components and work in progress, increased by EUR 41.5 million year-on-year to EUR 120.6 (December 31, 2020: EUR 79.1 million), indicating the high number of deliveries planned in subsequent quarters. The inventory turnover rate at the end of 2021 was 2.0 (2020: 2.0).

Trade receivables were EUR 81.0 million at December 31, 2021 (December 31, 2020: EUR 41.3 million), reflecting the high volume of shipments in the fourth quarter of 2021. The current days sales outstanding was 23 days at the end of 2021 compared to 18 days at the end of 2020.

Cash and cash equivalents and financial assets increased to EUR 352.5 million as of December 31, 2021 (31. December 2020: EUR 309.7 million). The increase is mainly due to the higher net income for the period. This is countered by offsetting effects from the build-up of inventories, mainly as a result of the higher business volume as well as from higher receivables, due to a disproportionately strong revenue contribution in the last quarter.

As of December 31, 2021, other financial assets include fund investments of EUR 141.6 million (December 31, 2020: EUR 62.4 million), short-term bank deposits of EUR 60.0 million (December 31, 2020: EUR 0 million) and long-term bank deposits of EUR 0 million (December 31, 2020: EUR 60.0 million). The non-current bank deposits of EUR 60.0 million included as of December 31, 2020 were reclassified to current financial assets in 2021. Please also refer to note 17 of the notes to the consolidated financial statements.

Liabilities

Trade payables increased to EUR 19.6 million as of December 31, 2021 (December 31, 2020: EUR 10.8 million), due to the increased procurement volume.

Provisions (non-current and current) increased from EUR 20.2 million as of December 31, 2020, to EUR 31.8 million as of December 31, 2021. This was due on the one hand to a high number of systems being shipped with associated provisions for warranties, and on the other hand to higher provisions for variable remuneration.

At EUR 77.0 million as of December 31, 2021, **advance payments received from customers** were significantly above the previous year's level (December 31, 2020: EUR 50.8 million), reflecting the current positive order situation.

Other current liabilities include payments received for publicly funded development projects and decreased slightly year-on-year to EUR 6.4 million (December 31, 2020: EUR 7.4 million).

Financial Position

Principals and Objectives of Financial Management

AIXTRON has a central financial management system whose primary objective is to ensure the long-term financial strength of the Group. AIXTRONs financial management includes the control of its global liquidity as well as its interest and currency management. Financial processes and responsibilities are defined throughout the Group. The investment policy is approved by the Supervisory Board.

Our capital structure management aims to determine an appropriate capital structure for each company within the Group while minimizing costs and risks. An appropriate structure must comply with tax, legal and commercial requirements. The Group increases or decreases the capital in line with the strategic orientation of the companies.

Our liquidity management aims to ensure the effective management of cash flows within each company of the group. The central finance department and local management monitor the cash flows within the group on a daily basis and take corrective action where necessary. Financing requirements are covered by cash within the group, either through intra-group loans or through changes in equity.

The principles of the investment policy are determined by the Executive Board and approved by the Supervisory Board of AIXTRON SE. Excess cash is invested by the finance department in accordance with this policy. The policy only allows for low-risk investments.

Due to its global business operations, AIXTRON generates a portion of its revenues in foreign currencies, i. e. in currencies other than the Euro. The most prevalent foreign currency relevant for AIXTRON is the US dollar. The associated exchange rate risk is monitored by the central finance department and taken into account as part of liquidity management. Speculative foreign currency trans-actions are not concluded.

In the semiconductor equipment industry, it is essential to have sufficient cash and cash equivalents at all times in order to be able to quickly finance possible business expansion. AIXTRON's current cash requirements are generally covered by cash inflows from operating activities. The Company can draw on a high level of cash and cash equivalents and other short-term investments to secure further corporate financing and to support its indispensable research and development activities. In addition, AIXTRON has the option, if necessary and subject to the approval of the Supervisory Board, to issue financial instruments on the capital market to cover additional capital requirements.

Financing

The **equity ratio** decreased slightly mainly due to the significantly increased advance payments from customers and the correspondingly higher balance sheet total compared to the previous year and amounted to 80% as of December 31, 2021 compared to 84% as of December 31, 2020.

The **share capital** of AIXTRON SE amounted to EUR 113,292,020 as of December 31, 2021 (December 31, 2020: EUR 112,927,320). It is divided into 113,292,020 no-par value registered common shares with a pro rata amount of share capital of EUR 1.00 per share. All shares are fully paid in. The increase in share capital is attributable to the shares issued in the fiscal year under stock option programs. Please also refer to note 22 in the Notes to the consolidated financial statements.

In fiscal year 2021, 364,700 stock options from past stock option programs were exercised (2020: 0 options) and no new stock options were issued (2020: 0 options). Please also refer to note 22 in the notes to the consolidated financial statements.

AIXTRON ordinary shares

	Dec. 31, 2021	Exercised	Expired/ Forfeited	Allocation	Dec. 31, 2020
Stock options to acquire shares	182,500	364,700	54,400	0	601,600

As of December 31, 2021 and 2020, AIXTRON did not have any **bank borrowings**.

To safeguard **advance payments received from customers for orders**, the Group had aval lines amounting to EUR 70.1 million as of December 31, 2021 (2020: EUR 71.8 million), of which EUR 24.7 million (2020: EUR 35.3 million) had been utilized as of the reporting date.

Investments

In the fiscal year 2021, AIXTRON Group's total capital expenditures amounted to EUR 17.7 million (2020: EUR 9.3 million).

In the course of the Group's growth, EUR 16.4 million (2020: EUR 7.8 million) was invested in property, plant and equipment in fiscal year 2021. These investments include additional test and demonstration facilities as well as the expansion of production and development areas. A further EUR 1.3 million was invested in financial assets and intangible assets including software licenses and other non-current financial assets (2020: EUR 1.4 million).

For fiscal year 2021, the cash flow statement showed a **cash outflow from investing activities** of EUR 0 million due to changes in time deposits with a maturity of at least three months (2020: outflow of EUR 32.5 million).

All investments in the fiscal years 2021 and 2020 were funded out of available cash resources.

Liquidity and Cashflow

EUR million

Description	Balance sheet item	December 31, 2021	December 31, 2020	+ / -
Bank deposits	Cash and cash equivalents	150.9	187.3	-36.4
Short-term bank deposits (term of 3 to max. 12 months)	Other financial assets	60.0	0	+60.0
Fund investments	Other financial assets	141.6	62.4	+79.2
Long-term bank deposits (term of more than 12 months)	Other financial assets	0.0	60.0	-60.0
Total liquidity		**352.5**	**309.7**	**+42.8**

Cash and cash equivalents including **other financial assets** increased to EUR 352.5 million as of December 31, 2021 (December 31, 2020: EUR 309.7 million). As of December 31, 2021, other financial assets included fund investments in the amount of EUR 141.6 million and, in addition, bank deposits, primarily in euros, with a maturity of less than twelve months in the amount of EUR 60.0 million, which were reported under other non-current assets in the previous year due to their maturity and were reclassified to current financial assets in the financial year (see also “Investments”).

There are no restrictions on access to the Company's cash and cash equivalents.

Mainly due to an increase in fund investments, **cash flow from operating activities** amounted to EUR-13.5 million in fiscal year 2021 (2020: EUR-39.2 million). Adjusted for this effect, cash flow amounted to EUR 66.4 million (2020: EUR 23.3 million). This is mainly the result of the increase in net income for the year. This was offset by the effects of the increase in inventories and the higher level of receivables as of the reporting date.

Cash flow from investing activities in the 2021 fiscal year was EUR-17.5 million (2020: EUR -41.5 million). This figure is mainly attributable to investments, above all in laboratory plant and equipment. In the previous year, cash flow from investing activities included changes in fixed-term deposits with a maturity of at least three months amounting to EUR-32.5 million (change in fixed-term deposits 2021: EUR 0.0 million; 2020: EUR-32.5 million). Adjusted for the effect of changes in fixed-term deposits, cash flow from investing activities would have been EUR-9.0 million in 2020.

Cash flow from financing activities amounted to EUR-8.6 million in 2021 (2020: EUR-0.9 million). The main drivers were the dividend payment of EUR-12.3 million (2020: EUR 0) and cash inflows from the issue of new shares under stock option programs of EUR 4.8 million (2020: EUR 0). In 2020, the cash outflow resulted mainly from repayments of lease liabilities.

Free cash flow (cash flow from operating activities adjusted for changes in financial assets - investments + proceeds from disposals) for the 2021 fiscal year was EUR 48.7 million compared to EUR 14.0 million in 2020. The difference compared with the previous year is mainly due to the increase in net income for the year and higher trade receivables as of the balance sheet date.

Financial and Non-Financial Performance Indicators

AIXTRON's key performance indicators are order intake, revenues, gross margin and EBIT margin. These form the basis for group-wide operational and strategic planning. They are used to pursue the goal of combining profitable revenue growth with cost and asset efficiency in order to achieve a sustainable increase in value. Thus, AIXTRON now focuses on four key performance indicators for the Group.

As non-financial performance indicators, the proportions of environmentally sustainable revenues, capital expenditures (CapEx) and operating expenses (OpEx) as defined by the EU Taxonomy Regulation are used for internal corporate management.

Management Assessment of Company Situation

In fiscal year 2021, AIXTRON continued to focus on successfully addressing the targeted growth markets with sustainable profitability. At the same time, the Group continued to drive development and sales activities, particularly for power electronics equipment and for the production of Mini and Micro LED displays.

Equipment revenues in 2021 amounted to EUR 366.5 million, of which EUR 139.7 million (38%) was generated by MOCVD/CVD equipment for the production of components for the power electronics segment (GaN/SiC) and EUR 137.0 million (37%) by MOCVD equipment for the optoelectronics segment (laser, solar and telecom). Further fundamental growth is expected in the aforementioned markets, as modern power electronics components are increasingly made of silicon carbide or gallium nitride materials, and the use of lasers in the fields of optical data transmission and 3D sensor technology continues to increase.

In addition to the above-mentioned activities, there is a focus on the costs as well as the margin contributions of individual revenue drivers. In addition, the Executive Board continuously reviews the product portfolio with a view to changing framework conditions, such as time windows for the market launch of new technologies or evaluation of our customers' product requirements.

The fiscal year 2021 developed very positively in all markets addressed by our core technology. Management expects further revenue growth in the future, driven by the megatrends of digitalization, electromobility, energy efficiency and climate protection.

In this context, the AIXTRON Group maintains a healthy financing structure with a high level of cash and cash equivalents and without any bank debt.

Achievement of guidance in 2021

In order to give our stakeholders including our shareholders the opportunity to follow our business development, we regularly publish our guidance for the current year with the publication of the annual report of the previous year. The order intake, revenue, gross margin and EBIT margin forecasts for the 2021 financial year published in the 2020 Annual Report and raised several times in the course of the year were fully met.

	Outlook FY 2021 25.02.2021	First Quarter 2021 29.04.2021	Second Quarter 2021 29.07.2021	Third Quarter 2021 04.11.2021	Result 2021 24.02.2022
Order Intake*	Range of EUR 340m to EUR 380m	upper end of range as of 25.02.21	Range of EUR 440m to EUR 480m	Confirmation of outlook for FY 2021 as of 29.07.21	EUR 497m.
Revenue*	Range of EUR 320m to EUR 360m	upper end of range as of 25.02.21	Range of EUR 400m to EUR 440m	Confirmation of outlook for FY 2021 as of 29.07.21	EUR 429m
Gross Margin*	around 40%	Confirmation of outlook for FY 2021 as of 25.02.21	Confirmation of outlook for FY 2021 as of 25.02.21	Confirmation of outlook for FY 2021 as of 25.02.21	42%
EBIT Margin*	around 16%	around 18%	Range of 20% to 22%	Confirmation of outlook for FY 2021 as of 29.07.21	23%

** = At constant budget exchange rate of 1.25 USD/EUR*

For the non-financial performance indicators newly defined in fiscal year 2020, energy consumption of the AIXTRON Group (measured in kWh standardized to the most important consumption drivers) and further training of the employees of the AIXTRON Group (measured in completed further training hours), target figures were defined for the expiry of a reference period of three years in each case. These non-financial performance indicators can therefore be reported for the first time at the end of fiscal year 2022 as part of a plan/actual comparison.

Management Report of AIXTRON SE

SUPPLEMENTARY EXPLANATIONS ACCORDING TO HGB

The management report of AIXTRON SE and the Group management report of the AIXTRON Group are combined according to Section 315 Para. 5 HGB in conjunction with Section 298 Para. 2 HGB. The report is published in the Federal Gazette.

The annual financial statements of AIXTRON SE have been prepared in accordance with the German Commercial Code (HGB) and the German Stock Corporation Act (AktG). The individual financial statements generally serve to determine the balance sheet profit and thus the possible distribution amount.

The combined management report comprises all legally required information regarding AIXTRON SE. In addition to the reporting on the AIXTRON Group we explain the development of AIXTRON SE.

AIXTRON SE is the parent company of the AIXTRON Group and has its headquarters in Herzogenrath, Germany. The AIXTRON SE Management is responsible for key management functions for the Group, such as corporate strategy, risk management, investment management, executive and financial management, and communication with key target groups of the Group. AIXTRON SE generates the majority of its consolidated revenues through its operating activities of the development, production, sale and maintenance of equipment for the deposition of semiconductor materials. In addition to seven directly or indirectly wholly owned subsidiaries, which are primarily responsible for the worldwide distribution of AIXTRON's products, AIXTRON SE currently holds an 87% interest in the APEVA Group.

AIXTRON SE is not managed separately using its own performance indicators because the Company is integrated into the Group management. We refer here to the respective explanations provided for the Group. The economic framework conditions of AIXTRON SE are essentially the same as those of the AIXTRON Group and are described in detail in the chapter Business Report.

Income Statement of AIXTRON SE according to HGB

EUR million	2021	2020	2021-2020
Revenues	**396.2**	**250.2**	**146.0**
Changes in inventories	15.4	-6.0	21.4
Other own work capitalized	0.5	0.2	0.3
Total output	**412.1**	**244.4**	**167.7**
Other operating income	12.9	16.1	-3.2
Cost of materials	204.4	125.4	79.0
Personnel expenses	52.7	39.6	13.1
Depreciation	7.6	10.7	-3.1
Other operating expenses	61.0	57.9	3.1
Operating result	**99.3**	**27.0**	**72.3**
Result from investments	4.3	0.0	4.3
Net interest income	-0.9	0.0	-0.9
Financial result	**3.4**	**0.0**	**3.4**
Profit before tax	**102.7**	**27.0**	**75.7**
Taxes on income and earnings	12.9	2.9	10.0
Profit after tax	89.9	24.1	65.7
Other taxes	0.2	0.2	0.0
Net profit for the year	**89.7**	**23.9**	**65.7**
Loss (-)/profit carried forward (+)	18.4	-5.6	24.0
Dividend payment	-12.3	0.0	-12.3
Transfer to retained earnings	-44.8	0.0	-44.8
Net retained profit (+)/loss (-)	**50.9**	**18.4**	**32.5**

Results of operations of AIXTRON SE according to HGB

AIXTRON SE's **revenues** amounted to EUR 396.2 million in fiscal year 2021 and thus increased by EUR 146.0 million, or 58%, compared with the previous year (2020: EUR 250.2 million). Revenues were influenced by continued high demand for MOCVD systems in the fields of GaN power electronics, wireless and optical data communication as well as LED applications. The other revenues are attributable to intra-Group charges.

Revenues by category

		2021		2020		2021-2020
	m EUR	%	m EUR	%	m EUR	%
Equipment revenues	332.3	84	201.7	80	130.7	65
Service and spare parts	57.1	14	41.9	17	15.2	36
Other revenues	6.7	2	6.7	3	0.1	1
Total	**396.2**	**100**	**250.2**	**100**	**146.0**	**100**

At 70%, demand from customers in Asia still accounted for the largest share of total revenues in 2021.

Revenues by region

		2021		2020		2021-2020
	m EUR	%	m EUR	%	m EUR	%
Asian	277.7	70	182.2	73	95.5	52
Europe	87.5	22	41.1	16	46.4	113
Americas	31.0	8	26.9	11	4.2	16
Total	**396.2**	**100**	**250.2**	**100**	**146.0**	**58**

At EUR 89.7 million (2020: EUR 23.9 million), the **net result for the year** was significantly higher than in the previous year. The following factors contributed to this development:

At 50%, the **cost of materials ratio** (cost of materials in relation to total output) was slightly below the previous year's figure (2020: 51%), mainly attributable to a more favorable product-mix.

The annual average number of employees at AIXTRON SE rose from 431 in the previous year to 477 in the fiscal year 2021. As result of the increased number of employees and variable remuneration components, **personnel expenses** increased from EUR 39.6 million in the previous year to EUR 52.7 million in fiscal year 2021.

Depreciation and amortization decreased by EUR 3.1 million from EUR 10.7 million in 2020 to EUR 7.6 million in 2021. In the previous year, higher depreciation due to shorter useful lives of some laboratory equipment had led to higher expenses.

Other operating expenses were higher at EUR 61.0 million compared to EUR 57.9 million in fiscal year 2020. The main drivers were higher variable expenses for shipped systems and expenditures for the expansion of production capacities.

In comparison to 2020, **other operating income** decreased from EUR 16.1 million to EUR 12.9 million in the 2021 fiscal year. This is mainly due to a one-off effect from the reversal of impairment losses due to the change in use of a production facility in the previous year.

In addition, **a result from investments** of EUR 4.3 million (2020: EUR 0) was generated in fiscal year 2021. This includes dividend income from subsidiaries in the amount of EUR 8.3 million as well as an impairment loss on the investment in APEVA Holdings Ltd. in the amount of EUR 4.0 million, whose earnings prospects have permanently deteriorated due to the lack of customer interest.

Net interest income totaled EUR -0.9 million in fiscal year 2021 compared to EUR 0 million in 2020. This is mainly attributable to expenses from the fair value measurement of fund investments.

Net Result AIXTRON SE - Use of Result

The net income of AIXTRON SE amounted to EUR 89.7 million. An amount of EUR 44.8 million was transferred to retained earnings. Together with the profit carried forward from the previous year in the amount of EUR 18.4 million and the dividend payment in May 2021 in the amount of EUR 12.3 million, this results in a new accumulated profit of EUR 50.9 million as of December 31, 2021 (2020: EUR 18.4 million). The Management Board and Supervisory Board will propose to the Annual General Meeting that a dividend of EUR 0.30 per share (2020: EUR 0.11) be paid for 2021.

Assets and Liabilities and Financial Position of AIXTRON SE

At EUR 615.6 million, total assets at AIXTRON SE at the end of 2020 were about 28% higher than the previous year's figure (2020: EUR 481.8 million). This was due in particular to advance payments received from customers and the positive net result for the year.

Balance Sheet of AIXTRON SE (HGB)

EUR million	2021 Dec. 31	2020 Dec. 31
Assets		
Intangible assets	2.2	2.6
Property, plant and equipment	63.8	56.4
Financial assets	46.4	50.1
Non-current assets	**112.4**	**109.1**
Inventories	104.7	69.0
Trade receivables	66.1	21.5
Receivables from associates	15.8	15.1
Other assets	6.6	3.4
Securities	141.6	62.4
Cash and credit balances at banks	167.7	200.8
Current assets	**502.5**	**372.2**
Deferred expenses and accrued income	0.7	0.6
Total assets	**615.6**	**481.8**

EUR million	2021 Dec. 31	2020 Dec. 31
Equity and liabilities		
Subscribed capital	113.3	112.9
Treasury stock	-1.1	-1.1
Issued capital	112.2	111.8
Capital reserve	280.8	276.3
Retained earnings	44.8	0.0
Accumulated deficit	50.9	18.4
Equity	**488.7**	**406.5**
Provisions	**46.1**	**24.8**
Prepayments received on order	62.0	40.1
Trade payables	12.9	5.8
Liabilities from associates	2.9	1.0
Other liabilities	3.1	3.5
Liabilities	**80.8**	**50.5**
Total equity and liabilities	**615.6**	**481.8**

Assets

Property, plant and equipment increased from EUR 56.4 million in 2020 to EUR 63.8 million in fiscal year 2021 due to increased capital expenditures, mainly for laboratory plant and equipment.

Financial assets decreased to EUR 46.4 million due to an impairment loss on the investment in APEVA Holdings Ltd. amounting to EUR 4.0 million.

The increase in **inventories** from EUR 69.0 million as of December 31, 2020 to EUR 104.7 million as of December 31, 2021 mainly reflects the high expected sale of systems in the following quarters and the high order backlog.

Trade receivables increased from EUR 21.5 million to EUR 66.1 million due to a high number of deliveries at the end of the 2021 financial year.

Liabilities

The **subscribed capital** of AIXTRON SE was at EUR 113.3 million as of December 31, 2021 (December 31, 2020: EUR 112.9 million). **Issued capital** was EUR 112.2 million (2020: EUR 111.8 million). A total of 364,700 shares were issued in the context of stock option programs in the fiscal year.

As a result of the exercise of the stock options, the **capital reserve** increased from EUR 276.3 million as of December 31, 2020, to EUR 280.8 million as of December 31, 2021.

Due to the higher balance sheet total, the **equity ratio** decreased to 79% in the fiscal year compared to 84% in the previous year, despite the increased total equity.

To secure **prepayments received on orders**, AIXTRON SE had aval lines with banks of EUR 57.5 million as of December 31, 2021 (2020: EUR 57.5 million), of which EUR 23.9 million had been utilized as of the balance sheet date (2020: EUR 25.9 million).

Trade payables increased to EUR 12.9 million due to reporting date factors and a higher procurement volume (2020: EUR 5.8 million).

As of December 31, 2021, AIXTRON did not have any **bank borrowings**, as was the case on the prior-year balance sheet dates.

Investments

In the context of the Company's growth, capital expenditures at AIXTRON SE totaled EUR 12.2 million in fiscal year 2021 (2020: EUR 5.7 million).

Thereof EUR 10.9 million in 2021 were for property, plant and equipment (2020: EUR 4.2 million). As in the previous year, this capital expenditure was mainly for laboratory equipment and test and demonstration equipment.

Furthermore, AIXTRON SE invested EUR 1.1 million in intangible assets for licenses and software (2020: EUR 1.4 million).

Investments of EUR 0.3 million (2020: EUR 0 million) were made in financial assets in fiscal year 2021.

Liquidity

Cash Flow Statement of AIXTRON SE (HGB)

EUR million	2021	2020
Aktiva		
Cash flow from operating activities	61.3	16.9
Cash flow from investing activities	-86.5	-68.1
Cash flow from financing activities	-7.9	0.0
Change in cash and cash equivalents	**-33.1**	**-51.2**
Cash and cash equivalents at the beginning of the period	200.8	252.0
Cash and cash equivalents at the end of the period	**167.7**	**200.8**

Development of Financial Position (Cash Flow)

Cash and cash equivalents decreased by EUR 33.1 million from EUR 200.8 million to EUR 167.7 million in the fiscal year, mainly due to cash and cash equivalents being invested in fund assets. Adjusted for this effect, liquidity would have increased by EUR 46.1 million.

Cash flow from operating activities improved from EUR 16.9 million in 2020 to EUR 61.3 in the fiscal year 2021 mainly as a result of the significant improvement in net income, which has not yet been fully reflected in cash flow due to the high level of receivables and increased inventories as of the reporting date.

Cash flow from investing activities was amounted to EUR -86.5 million in fiscal year 2021 (2020: EUR -68.1 million) mainly due to additional investments in fund assets of EUR -79.2 million (2020: EUR-62.4 million).

There are no restrictions on access to the Company's cash and cash equivalents.

Opportunities and Risks

The business development of AIXTRON SE is subject to substantially the same risks and opportunities as the AIXTRON Group. AIXTRON SE generally participates in the risks of its subsidiaries in proportion to its respective ownership interest. As a result of the centralized financial management of the AIXTRON Group, all financing transactions are conducted through AIXTRON SE. As the parent company of the AIXTRON Group, AIXTRON SE is integrated into the Group-wide risk management system. For further information, please refer to the Opportunities and Risks Report.

Outlook

The outlook for the AIXTRON Group largely reflects the expectations of AIXTRON SE. The earnings development of AIXTRON SE should continue to be in line with that of the Group in the future, as the results of the subsidiaries are reflected in the income from investments of the Group's parent company. Management by means of performance indicators is carried out exclusively at Group level. The comments on the expected results of operations and financial position therefore also apply to AIXTRON SE. For further information please refer to section "Expected Developments" of this report.

Report on Expected Developments, Opportunities and Risks

Expected Developments

Future Market Environment

In its "World Economic Outlook" (January 2022), the IMF forecasts global economic growth of 4.4% for 2022. Supported by further vaccination progress, all advanced economies are expected to return to their pre-crisis levels in the coming year, with existing supply bottlenecks and disrupted supply chains continuing to cause uncertainty. Inflation should return to normal levels once the base effects from the crisis year 2020 have expired. At this point in time, AIXTRON does not expect the general global economic environment to have a significant impact on its business development. The industry and sector-specific conditions for the demand for AIXTRON equipment remain intact, although the risk of renewed setbacks for the global economy, e. g. due to possible new virus variants, cannot be excluded.

Market experts are very positive about the development of production equipment for the semiconductor industry in the coming years. According to a January 2022 study by SEMI[2], the leading global industry association, the total market for wafer fab equipment, which includes AIXTRON's deposition equipment, is expected to grow from approximately USD 89 billion in the year 2021 to approximately USD 98 billion in the year 2022, an all-time high. Korea, Taiwan and China continue to account for a large share of the market, together accounting for approximately 73% of the global market. According to SEMI, the market for wafer fab equipment continues to grow in this regard, despite a very strong increase in the previous year. Investments in new capacities for the production of microcontrollers and power devices are the strongest drivers of this growth.

Irrespective of the market development of the semiconductor industry as a whole, the segments on which AIXTRON focuses are determined by megatrends, the development of which will be decisive for the future development and size of AIXTRON’s markets:

Sales of power semiconductors made of GaN and SiC materials are mainly driven by the need to increase energy efficiency in global IT infrastructure and data centers in order to curb the rapid increase in energy consumption. It is expected that the use of electric vehicles in the future will lead to an increased use of SiC components both, in the powertrain and in the charging infrastructure in order to better meet the requirements for range and efficiency.

[2)] source: World Fab Forecast Report, 4Q21 Update, Published by SEMI
https://www.semi.org/en/news-media-press-releases/global-fab-equipment-spending-projected-to-log-record-high-in-2022-to-mark-third-consecutive-year-of-growth-semi-reports

The increasing demand for lasers manufactured on AIXTRON systems is due to the exponentially growing need for fast and energy-efficient optical data communications (cloud computing, video streaming, etc.) as well as the adoption of 3D sensing in consumer electronics (smart phones, televisions) and in access control areas. Also, the progress of industrial digitalization and a growing number of semi-autonomous vehicles that use 3D sensing technology will lead to increased demand for lasers.

Finally, AIXTRON's future markets will be driven by the adoption of novel displays in smartwatches, TVs, smartphones and notebooks: Micro LED displays, whose self-illuminating LED pixels can be produced on AIXTRON MOCVD equipment, aim to replace today's LCD or OLED display technology with innovative, energy-saving alternatives offering better luminosity, contrast, color fidelity and resolution. The adoption of these novel display technologies will significantly determine the size of AIXTRON's sales markets.

Expected Results of Operations and Financial Position

For the fiscal year 2022, the Group again expects a growing revenue development compared to 2021. Customer demand continues to span all technology areas. The Executive Board is optimistic about both the short- and long-term positive outlook, both for demand for MOCVD equipment for the production of lasers, in particular for optical data transmission, and for LED-based display applications. In terms of demand for equipment for the production of power devices based on the wide band gap materials SiC- and GaN (silicon carbide, gallium nitride), the Executive Board again anticipates an increasing revenue contribution in fiscal year 2022 compared to 2021.

Based on the current Group structure, an assessment of the order situation and the budget exchange rate of 1.20 USD/EUR (2021: 1.25 USD/EUR), the Executive Board expects **order intake** in a range between EUR 520 million and EUR 580 million for the Group in fiscal year 2022. With **revenues** in a range between EUR 450 million and EUR 500 million, the Executive Board expects to achieve a **gross margin** of approximately 41% and an **EBIT margin** of approximately 21%- 23% of revenues in fiscal year 2022. The expectations for 2022 are subject to the condition that the COVID-19 pandemic continues to have no significant impact on the development of our business.

In addition, with a view to the sustainability targets, the Executive Board is aiming for a slight increase in the share of environmentally sustainable revenues, capital expenditures (CapEx) and operating expenses (OpEx) in the medium term as defined by the EU Taxonomy Regulation.

As in previous years, the Executive Board expects that AIXTRON will not require external bank financing in fiscal year 2022. Furthermore, it is expected that the Group will be able to maintain a solid equity base for the foreseeable future.

Overall Statement on the Future Development

AIXTRON's equipment enables the production of power semiconductors for highly efficient energy conversion in the field of power supply for data centers or consumer electronics, or for electric vehicles and their charging infrastructure (GaN and SiC devices). Lasers manufactured using AIXTRON equipment are key components in high-speed optical data transmission (cloud computing, Internet of Things), in 3D sensor technology, and increasingly in complex vehicle assistance systems. AIXTRON technology also enables the production of high frequency chips for 5G mobile networks and key components for the production of latest generation displays (fine pitch displays, Mini and Micro LED displays).

Based on AIXTRON's proven ability to develop and market innovative deposition equipment in flexible numbers for multiple customer markets, the Executive Board is convinced of the positive future prospects for the Group and its target markets.

As of December 31, 2021, AIXTRON did not have any legally binding agreements regarding financial investments, acquisitions or disposals companies or businesses.

Risk Report

Risk Management System

AIXTRON’s risk management system is centrally controlled and involves all major organizational units of the AIXTRON Group in the process. The Board Member of AIXTRON SE in charge of Corporate Governance & Compliance is responsible for establishing an effective risk management system and informs the Executive Board and Supervisory Board of AIXTRON SE at regular intervals or, if necessary, ad-hoc. In this context, opportunities are considered and documented in a process that runs separately from AIXTRON’s risk management system.

The primary purposes of the risk management system are to support the achievement of strategic business objectives and to identify at an early stage potential risks to current corporate planning that could have a negative impact on the achievement of strategic business objectives and on business activities. The risk management system supports the Executive Board in the systematic, effective and efficient management of identified risks by defining, prioritizing and tracking risk-reducing measures.

In order to meet the extended requirements of IDW PS 340 revised, the conformity and informative value of AIXTRON's risk management system were examined and key instruments were further optimized in terms of their presentation and informative value. The main subjects of this review were the further development of the risk management system framework, the risk assessment scheme, the risk-bearing capacity, and the resulting overall risk position in the AIXTRON Group. The results and resulting adjustments were integrated into the risk management process and risk reporting, applied in the quarterly risk inventory, and documented in the Group-wide risk management system manual. All members of the senior management team as well as the general managers and other key employees were informed about the adjustments and trained in their application.

As a result of the enhancement of the risk management system in fiscal year 2021, the approach to assessment and presentation has not changed significantly, so that the risk situation is fundamentally comparable with the previous year.

The periodic quarterly risk inventory is initiated, carried out and monitored by the central risk manager. During this process, all risk managers from the operational and administrative areas, all general managers of the AIXTRON subsidiaries, and the Executive Board are asked about current developments in already known risks and measures to reduce them, as well as about potential new risks. The results are collated at central level and discussed in a Risk Committee before the Supervisory Board is informed.

AIXTRON uses risk management software to support the risk management process. All risk managers have access to the software. This ensures that abrupt changes in the risk situation or newly identified risks are reported by the risk officers and integrated into the risk portfolio and reporting.

At AIXTRON, all individual risks and risk aggregates are assessed and classified according to a defined scheme. The probability of occurrence is assessed in four stages, as is the potential amount of damage if the risk occurs. The amount of damage relates to the impact on the operating result (EBIT) of the AIXTRON Group; in the case of materiality for relevant risks, a possible outflow of cash is also taken as the amount of damage.

The probability of risks occurring is broken down into:

- Remote = < 5%
- Unlikely = 5%- 10%
- Possible = >10%- 50%
- Likely = >50%- 100%

Wherever possible, risks with a probability of occurrence of more than 50% are recognized as provisions in the financial statements or taken into account in planning.

The criterion used to assess the potential financial impact of a risk on the AIXTRON Group's earnings (EBIT) is the potential net loss (measured as a percentage of equity):

- Acceptable = <0.4%
- Relevant = 0.4%- 2%
- Serious = >2%- 4%
- Critical = > 4%

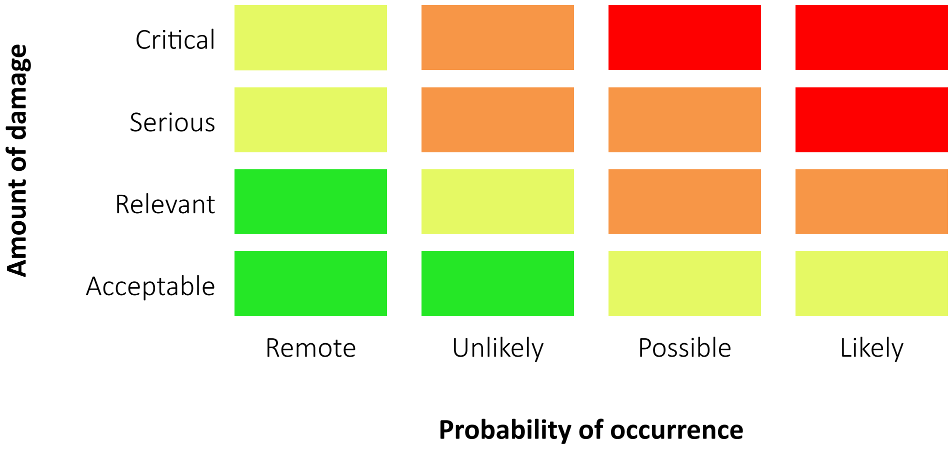
The impact of risk is presented both in terms of potential gross/net impact and in terms of different periods under consideration (up to 12 months, 13-24 months and greater than 24 months). The gross loss represents the potential loss in the event of a risk occurrence without taking into account further effects such as risk reduction measures.

The net loss describes the potential loss in the event of a risk occurring, taking into account the effects resulting from the risk reduction measures, such as insurance, provisions, budget and forecast recognition of risks. A risk matrix is derived from this assessment, which divides the risks of the AIXTRON Group into the following four risk classes (see chart for color scale).

- Acceptable Risk (green)
- Relevant Risk (yellow)
- Serious Risk (orange)
- Substantial Risk (red)

The risks classified as substantial are those that are significant in terms of a threat to the continued existence of the AIXTRON Group as a going concern as defined by German Accounting Standard (GAS 20).

Risk Map



Single Risk Factors

The following risks could potentially have a substantially adverse impact on the revenue, the financial position, the net assets, the Company's liquidity and the market price of the AIXTRON share, and on the actual outcome of matters which the forward-looking statements contained in this combined management report refer to. The risks described below are not the only ones the AIXTRON Group faces. There may be additional risks that AIXTRON is currently unaware of, as well as general corporate risks such as political risks, the risk of force majeure and other unforeseeable events. There may also be risks that AIXTRON currently considers to be immaterial, but which may ultimately also have a significantly adverse effect on the AIXTRON Group. Further information on forward-looking statements can be found in the section "Forward Looking Statements".

In accordance with German Accounting Standard (GAS) 20, the following risks were assessed as material as of December 31, 2021:

Market- and competition-related risks

AIXTRON's target markets are globally distributed, with a regional focus on Asia. Therefore, AIXTRON is exposed to global economic cycles and geopolitical risks, e. g. the trade conflict between the USA and Chian, which could have a negative impact on the AIXTRON Group's business. Such risks cannot be influenced by the AIXTRON Group.

The markets addressed by AIXTRON are cyclical and can therefore be volatile. The timing, length and intensity of these industry cycles are difficult to predict and to influence by AIXTRON. In order to diversify market-related risks, AIXTRON therefore diversifies and offers products in different target markets.

AIXTRON competes with other companies in each of these markets. There is always the possibility that new competitors may enter the market, or that established competitors may adopt strategies or bring products to market that may negatively affect market expectations as a whole or for individual key customers of AIXTRON.

AIXTRON continuously monitors and assesses market developments. In order to reduce the risk of dependence on individual markets and their fluctuations, AIXTRON has implemented a management system to ensure that market developments are recognized at an early stage and exploited optimally.

AIXTRON's market and competitive risks are classified as substantial risks, as the level of damage in the event of a possible risk occurrence would have a significant impact on the Group's medium to long-term high revenue and earnings expectations.

Technological risks

The technologies offered by AIXTRON sometimes enable new, disruptive application opportunities. This often means long development and qualification cycles for AIXTRON's products, as demanding technical and/or other customer requirements have to be met (sometimes for the first time) before a deal can be closed.

Due to the often long development and qualification cycles of AIXTRON's products, AIXTRON may develop technologies and products for markets or application areas in which the general conditions of the sales markets or the strategic plans of potential customers change fundamentally during the development cycle.

The continued focus on research and development activities in the past fiscal year and the intensive involvement of external technology partners are still considered by AIXTRON SE´s Executive Board to be suitable measures to reduce this risk.

AIXTRON's technology risks are classified as substantial risks, as the level of damage in the event of a potential risk materializing could have a significant impact on the Group's medium- to long-term high revenue and earnings expectations.

If it turns out that a technology risk has materialized and the introduction of a new technology cannot be realized as planned, this can consequently lead to planned and forecast revenues being exposed to the risk of postponement or discontinuation, and thus to development activities being refinanced later than planned or not at all.

AIXTRON's risk management system considers the following risks to be not material to the Group:

- Currency risk and other financial risks
- Sourcing, supply chain and production risks
- Staff-related risks
- Legal risks
- Risks relating to patents and intellectual property
- IT & Information Security Risks
- COVID-19 pandemic

AIXTRON defines IT and information security risks as breaches of integrity, confidentiality, and liability.

The Group has invested in extensive technical and organizational measures to enhance information security and protect information from unauthorized access, unintentional modification, or deletion. The information security measures taken are subject to regular monitoring and continuous improvement and are supported by targeted awareness and training concepts. Accordingly, the risk classification was reduced overall.

The evolution and impact of the COVID-19 pandemic are continuously monitored. For this purpose, among other things, an interdisciplinary team has been formed and protective and preventive measures have been introduced. In addition, the Executive Board regularly communicates the current situation- i. e. the latest developments in general and at AIXTRON, as well as the measures derived from them- to the employees.

As part of the risk management system, the impact, measures, and outlook related to the current COVID-19 pandemic situation, as well as possible resulting effects on global material availability and supply chains, are recorded, discussed, assessed, and reported in our regular quarterly risk inventory.

Overall picture of the risk situation of AIXTRON SE

Compared to fiscal year 2020, the overall risk situation remains unchanged for fiscal year 2021, with the exception of the changes in the AIXTRON Group outlined above. The continued focus of research and development activities, with an emphasis on the renewal and expansion of the product portfolio, streamlines the risk portfolio and thus improves the exploitation of opportunities and the avoidance of risks in AIXTRON's target markets.

Neither in fiscal year 2021 nor at the time of writing this Management Report has the Executive Board of AIXTRON SE identified risks to the Company that could threaten its continued existence as of December 31, 2021.

Opportunities Report

AIXTRON's core competence is the development of cutting-edge technology for the precise deposition of complex semiconductor structures and other functional materials. The company has achieved globally leading positions in these areas. In order to defend or expand these positions, AIXTRON invests in appropriate research and development projects, such as for MOCVD systems to produce semiconductors for use in LEDs, lasers or power electronics. The renewal and expansion of the entire equipment portfolio is planned for the coming years. The Executive Board will maintain the focus on this core competence in order to successfully develop both existing as well as new markets.

Important market segments for power electronics based on wide-band-gap materials such as gallium nitride (GaN) and silicon carbide (SiC) are the automotive, energy, telecommunications and consumer electronics industries. The development of energy-efficient solutions for AC/DC converters, inverters and high-frequency power amplifiers are increasingly gaining in importance. The trend towards electrification of vehicles and there charging infrastructure using SiC-based components plays an important role in this regard. GaN-based components, e. g. for fast charging of mobile devices, are becoming increasingly popular. The demand for energy-efficient GaN-based power supply in IT, such as data centers or servers, is currently growing rapidly and is also expected to increase further over the coming years as additional market segments are developed. GaAs or GaN-based radio frequency devices are used for signal transmission in 5G networks or for the WLAN 6 standard, among others. AIXTRON expects demand for production equipment to increase as the market penetration of these applications gains momentum.

Important market segments in optoelectronics include consumer electronics, data communications and display technology. The trend towards optical data transmission also across shorter distances, e. g. in data centers or FTTH, as well as the global expansion of fiber optic networks for high-speed data transmission, is creating increasing demand for equipment to manufacture edge and surface emitting lasers (VCSEL). AIXTRON expects demand in this area to increase over the coming years, particularly as demand for 3D sensor technology also increases due to virtual reality or LiDAR applications in the automotive sector. In addition, AIXTRON continues to see high demand for equipment for the production of red, orange and yellow (ROY), infrared and UV LEDs, for example, due to the growing adoption of direct emitting LED displays and applications such as indoor farming. In addition, the upcoming commercialization of Micro LED displays has the potential to generate significant demand for equipment for this demanding application. These display technologies have high potential in various consumer electronics end-use applications.

AIXTRON expects the following market trends and opportunities in the relevant end user markets could possibly have a positive effect on future business:

Short Term:

- Increasing use of wide-band-gap GaN- or SiC-based devices for energy-efficient power electronics in automobiles, consumer electronics, mobile devices and IT infrastructure
- Increasing use of GaN-based devices in the field of 5G network infrastructure
- Increasing use of GaAs-based devices in mobile devices (e.g. smartphones) for 5G mobile communications or WLAN 6 technology
- Further increasing demand for lasers for high-volume optical data transmission, e.g., for video streaming and Internet-of-Things (IoT) applications
- Increasing use of compound semiconductor-based lasers for 3D sensing in mobile devices and infrastructure applications
- Increasing use of LEDs and specialty LEDs (esp. red-orange-yellow, UV or IR) in display and other applications
- Commercialization of Micro LED displays

Mid- to Long-Term:

- Development of new applications based on wide-band-gap materials such as high-frequency chips or system-on-chip architectures with integrated energy management
- Development of alternative LED applications, such as visual light communication technology
- Increasing application of compound semiconductor-based laser sensors for autonomous driving
- Use of GaN-based devices in mobile devices (e.g. smartphones) for the millimeter-wave range of 5G and 6G mobile communications
- Increased development activities for high-performance solar cells made of compound semiconductors

Overall Picture of Opportunities

As part of the assessment of our business opportunities, options for investments or development projects are reviewed and prioritized for their potential value contribution to ensure an effective allocation of resources. We focus specifically on growth markets that are positively influenced by global trends such as increasing electromobility, digitalization, and networking, among others, in order to systematically and optimally exploit the opportunities that arise for the sustainable and profitable business development of the Group.

Should identified opportunities be considered probable, then these are included in the business plans and short-term forecasts. Any further trends or events that could lead to a positive development for our net assets, financial position and results of operations are being observed and may have a positive impact on our medium to long-term prospects.

Internal Control System ICS

The AIXTRON Group's internal control system covers both the accounting process of AIXTRON SE and the Group accounting process. It defines controls and monitoring activities that are measures designed to ensure the proper conduct of business activities, reliable financial reporting, and compliance with laws and regulations. An appropriate control system, taking into account the size of the Company and its business activities, is the prerequisite to effectively manage operational, financial and other risks.

Controls are defined at risk points in the accounting process to help ensure that the consolidated financial statements are prepared in accordance with the rules. A separation of functions appropriate to the size of the company and the application of the dual control principle reduce the risk of fraudulent acts.

A global IT system is used to prepare the annual financial statements and the consolidated financial statements and for consolidation, ensuring uniform and consistent procedures and data security. Central system backups are regularly performed for the relevant IT systems to prevent data loss. In addition, defined authorizations and access restrictions are part of the security concept.

The Group function Finance is technically and organizationally in charge of the preparation of the consolidated financial statements. In the decentralized units, local employees are responsible for preparing the local financial statements. Uniform Group accounting is ensured by Group-wide guidelines on content and timing, as well as accounting policies and valuation principles. The Compliance department regularly reviews the observance and effectiveness of the controls and is thus integrated into the overall process.

It is the opinion of the Executive Board that these coordinated processes, systems and controls ensure that the Group accounting process is in accordance with IFRS and that the annual financial statements comply with the German Commercial Code (HGB) and other accounting-related regulations and laws and are reliable.

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Legal Disclosures

Group Declaration of Corporate Governance pursuant to Section 289f in conjunction with Section 315d German Commercial Code (HGB)

The Declaration of Corporate Governance pursuant to Section 289f HGB has been combined with the Group Declaration of Corporate Governance pursuant to Section 315d HGB. This combined declaration including a Corporate Governance Report is available on the homepage of AIXTRON SE at https://www.aixtron.com/en/investors/corporate-governance/corporate-governance-statement.

Information concerning Section 289a in conjunction with Section 315a of the German Commercial Code (HGB) on takeovers

The share capital of AIXTRON SE as of December 31, 2021, amounted to EUR 113,292,020 (December 31, 2020: EUR 112,927,320) divided into 113,292,020 registered shares with a proportional interest in the share capital of EUR 1.00 per no-par value registered share. Each no-par value share represents the proportionate share in AIXTRON's stated share capital and carries one vote at the Company's annual shareholders' meeting. All registered shares are fully paid in.

As of December 31, 2021, AIXTRON SE held 1,084,105 treasury shares, which accounted for a share capital in the amount of EUR 1,084,105 (previous year: kEUR 1,084). The treasury shares correspond to 1% of the share capital (previous year: 1%).

AIXTRON SE has issued a share certificate representing multiples of shares (global share). Shareholders do not have the right to the issue of a share certificate representing their share(s). There are no voting or transfer restrictions on AIXTRON's registered shares that are related to the Company's Articles of Association. There are no classes of securities endowed with special control rights, nor are there any provisions for control of voting rights, if employees participate in the share capital without directly exercising their voting rights.

Additional funding needs could be covered by the following additional capital as authorized by the annual shareholders' meeting:

Funding Sources

(EUR or number of shares)

	2021 Dec. 31	Approved since	Expiration date	2020 Dec. 31	2021-2020
Issued shares	113,292,020	--	--	112,927,320	364,700
Authorised capital 2018- Capital increase in cash or in kind with or without subscription rights for existing shareholders	45,944,218	16.05.2018	15.05.2023	45,944,218	0
Authorised capital 2017- cash capital increase with subscription rights for existing shareholders	10,518,147	09.05.2017	08.05.2022	10,518,147	0
Conditional Capital 2018- Authorisation to issue bonds with warrants and/or convertible bonds, profit-sharing rights and/or income bonds (or combinations of these instruments) with or without subscription rights for existing shareholders	25,000,000	16.05.2018	15.05.2023	25,000,000	0
Conditional Capital II 2012- Stock Option Program 2012	3,852,026	16.05.2012	15.05.2017	4,208,726	-356,700
Conditional Capital II 2007- Stock Option Program 2007	2,678,523	22.05.2007	21.05.2012	2,686,523	-8,000

In accordance with Section 71 (1) no. 8 German Corporations Act, AktG, the Company is authorized until May 15, 2023, with the approval of the Supervisory Board, to purchase its own shares representing an amount of up to EUR 11,292,473 of the share capital. This authorization may not be used by the Company for the purpose of trading in own shares. The authorization may be exercised in full, or in part, once, or on several occasions by the Company, by companies dependent on the Company or in which the Company directly or indirectly holds a majority interest, or by third parties appointed by the Company. The shares may be purchased (1) on the stock market or (2) by way of a public offer to all shareholders made by the Company or (3) by way of a public invitation to submit offers for sale.

Any amendment to the Articles of Association related to capital measures requires a 75% majority of the share capital represented at the Annual General Meeting (Article 59 SE Regulation, SE-VO; Section 179 German Corporations Act, AktG). Other amendments to the Articles of Association require a majority of two thirds of the votes cast or, if at least one half of the share capital is represented, a simple majority of the votes cast.

As of December 31, 2021, approximately 22% of AIXTRON's shares were held by private individuals, most of whom are based in Germany. Approximately 77% of the outstanding AIXTRON shares are held by institutional investors. At the end of fiscal year 2021, the five largest shareholders, each holding more than 5% of the AIXTRON shares in their portfolios, were Société Générale, T. Rowe Price International, Artisan Partners, Invesco, and Citigroup. 99% of the shares were in free float as defined by Deutsche Börse.

The Supervisory Board appoints and removes from office the members of the Executive Board, who may serve for a maximum term of six years before being reappointed.

In the event of a "change of control", the individual members of the Executive Board are entitled to terminate their employment with three months' notice to the end of the month and to resign from office with effect from the date of termination. Upon termination of employment due to a so-called "change of control" event, all members of the Executive Board receive a severance payment in the amount of the fixed and variable remuneration expected to be owed by the Company for the remaining term of the employment contract, up to a maximum of two years' remuneration. A "change of control" as defined above exists if a third party or a group of third parties, who contractually combine their shares to act as a third party, directly or indirectly holds more than 50% of the Company's share capital. Apart from the aforementioned, there are no other "change of control" clauses.

Non-financial reporting in accordance with Sections 315b et seq. HGB

The AIXTRON Group's Sustainability Report is available on our website under Publications. The Group's non-financial report in accordance with § 315b ff. HGB is integrated into this Sustainability Report and all text sections, tables and graphs, and all text sections, tables and graphics that are assigned to the non-financial report are marked accordingly.

GROUP CONSOLIDATED FINANCIAL STATEMENTS

Consolidated Income Statement

in EUR thousands	Note	2021	2020
Revenues	3	428,954	269,247
Cost of sales		247,475	160,960
Gross profit		**181,479**	**108,287**
Selling expenses		10,005	9,723
General administration expenses		25,382	17,950
Research and development costs	4	56,809	58,379
Other operating income	5	11,469	14,536
Other operating expenses	6	1,774	1,941
Operating expenses		**82,501**	**73,457**
Operating result		**98,978**	**34,830**
Finance income		232	348
Finance expense		279	104
Net finance income	8	**-47**	**244**
Profit before taxes		**98,931**	**35,074**
Taxes on income	9	4,092	604
Profit for the year		**94,839**	**34,470**
Attributable to:			
Owners of AIXTRON SE		95,660	34,879
Non-controlling interests		-821	-409
Basic earnings or loss per share (EUR)	20	0.85	0.31
Diluted earnings or loss per share (EUR)	20	0.85	0.31

See accompanying notes to consolidated financial statements.

Consolidated Statement of Other Comprehensive Income

in EUR thousands	Note	2021	2020
Profit for the year		**94,839**	**34,470**
Items that will not be reclassified subsequently to profit or loss (after taxes):			
Remeasurement of defined benefit obligation		112	-21
Items that may be subsequently reclassified to profit or loss (after taxes):			
Currency translation adjustment	19	4,487	-3,344
Other comprehensive income/loss		**4,599**	**-3,365**
Total comprehensive income for the year		**99,438**	**31,105**
Attributable to:			
Owners of AIXTRON SE		100,257	31,535
Non-controlling interests		-819	-430

See accompanying notes to consolidated financial statements.

Consolidated Statement of Financial Position

in EUR thousands	Note	31.12.21	31.12.20
Assets			
Property, plant and equipment, and leased assets	11	74,013	63,469
Goodwill	12	72,319	70,977
Other intangible assets	12	2,246	2,876
Other non-current financial assets	13	703	60,497
Deferred tax assets	14	24,735	14,415
Total non-current assets		**174,016**	**212,234**
Inventories	15	120,629	79,087
Trade receivables	16	80,962	41,304
Current tax receivables	10	2,363	949
Other current assets	16	10,238	7,171
Other financial assets	17	201,625	62,422
Cash and cash equivalents	18	150,863	187,259
Total current assets		**566,680**	**378,192**
Total assets		**740,696**	**590,426**
Liabilities and equity			
Share capital	19	112,208	111,843
Additional paid-in capital		384,687	376,399
Retained earnings		88,372	4,903
Currency translation reserve		6,726	2,241
Equity attributable to the owners of AIXTRON SE		**591,993**	**495,386**
Non-controlling interests		173	992
Total equity		**592,166**	**496,378**
Other non-current liabilities	27	3,296	2,617
Other non-current provisions	23	4,521	3,979
Deferred tax liabilities	14	654	0
Total non-current liabilities		**8,471**	**6,596**
Trade payables	24	19,585	10,846
Contract liabilities for advance payments	26	77,041	50,824
Other current provisions	23	27,271	16,188
Other current liabilities	24	6,433	7,379
Current tax payables	10	9,729	2,215
Total current liabilities		**140,059**	**87,452**
Total liabilities		**148,530**	**94,048**
Total liabilities and equity		**740,696**	**590,426**

See accompanying notes to consolidated financial statements.

Consolidated Statement of Cash Flow

in EUR thousands	Note	2021	2020
Cash flow from operating activities			
Profit for the year		94,839	34,470
Adjustments to reconcile net profit to net cash from operating activities			
Expense from share-based payments		3,860	1,129
Depreciation, amortization and impairment expense	11, 12	9,829	9,547
Net result from disposal of property, plant and equipment	5, 6	83	51
Adjusmtents for fair value valuation of financial assets at fair value through profit or loss		659	0
Deferred income taxes	9	-9,569	-3,310
Interest and lease repayments shown under investing or financing activities	8, 27	906	619
Change in			
Inventories		-39,756	-677
Trade receivables		-39,415	-12,880
Other assets		-3,802	-3,312
Financial assets at fair value through profit or loss		-79,862	-62,422
Trade payables		8,067	-7,742
Provisions and other liabilities		16,713	2,222
Non-current liabilities		-452	2,220
Advance payments from customers		24,404	923
Net cash provided by operating activities		**-13,496**	**-39,162**
Investing			
Capital expenditures in property, plant and equipment	11	-16,388	-7,847
Capital expenditures in intangible assets	12	-1,060	-1,443
Proceeds from disposal of property, plant and equipment		-13	24
Proceeds from disposal of intangible assets		53	0
Interest received	8, 27	169	285
Bank deposits with a maturity of more than 90 days	17	0	-32,500
Investments in other financial assets		-250	0
Net cash provided by (used in) investing activities		**-17,489**	**-41,481**
Financing			
Proceeds from the issue of equity shares		4,793	0
Interest paid	8, 27	-111	-27
Repayment of lease liabilities	27	-964	-877
Dividend paid		-12,303	0
Net cash provided by (used in) financing activities		**-8,585**	**-904**
Effect of changes in exchange rates on cash and cash equivalents		3,174	-2,013
Net change in cash and cash equivalents		-36,396	-83,560
Cash and cash equivalents at the beginning of the period		187,259	270,819
Cash and cash equivalents at the end of the period	18	**150,863**	**187,259**
Net cash provided by operating activities includes:			
Income taxes paid		-7,651	-5,973
Income taxes received		99	271

See accompanying notes to consolidated financial statements.

Consolidated Statement of Changes in Equity

in EUR thousands	Subscribed capital under IFRS	Additional paid-in capital	Currency translation	Retained earnings or losses	Shareholders' equity attributable to the owners of AIXTRON SE	Non-controlling interests	Total
Balance January 1, 2020	**111,840**	**375,273**	**5,564**	**-29,955**	**462,722**	**1,422**	**464,144**
Share-based payments		1,129			1,129		1,129
Issue of shares	3	-3			0		0
Profit for the year				34,879	34,879	-409	34,470
Other comprehensive loss			-3,323	-21	-3,344	-21	-3,365
Total comprehensive income for the year			-3,323	34,858	31,535	-430	31,105
Balance December 31, 2020 and January 1, 2021	**111,843**	**376,399**	**2,241**	**4,903**	**495,386**	**992**	**496,378**
Dividends				-12,303	-12,303		-12,303
Share-based payments		3,860			3,860		3,860
Issue of shares	365	4,428			4,793		4,793
Profit for the period				95,660	95,660	-821	94,839
Other comprehensive income			4,485	112	4,597	2	4,599
Total comprehensive income for the year			4,485	95,772	100,257	-819	99,438
Balance December 31, 2021	**112,208**	**384,687**	**6,726**	**88,372**	**591,993**	**173**	**592,166**

See accompanying notes to consolidated financial statements.

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1. General Principles

AIXTRON SE ("Company") is incorporated as a European Company (Societas Europaea) under the laws of the Federal Republic of Germany. The Company is domiciled at Dornkaulstraße 2, 52134 Herzogenrath, Germany. AIXTRON SE is registered in the commercial register of the District Court ("Amtsgericht") of Aachen under HRB 16590.

The consolidated financial statements of AIXTRON SE and its subsidiaries ("AIXTRON" or "Group") have been prepared in accordance with, and fully comply with

- International Financial Reporting Standards (IFRS) as adopted for use in the European Union; and
- the requirements of Section 315e of HGB (German Commercial Law).

AIXTRON is a leading provider of deposition equipment to the semiconductor industry. The Group's technology solutions are used by a diverse range of customers worldwide to build advanced components for electronic and opto-electronic applications based on compound, silicon, or organic semiconductor materials. Such components are used in fiber optic communication systems, wireless and mobile telephony applications, optical and electronic storage devices, computing, signaling, and lighting, displays, as well as a range of other leading-edge technologies.

These consolidated financial statements have been prepared by the Executive Board and have been submitted to the Supervisory Board at its meeting held on February 23, 2022 for approval and publication.

2. Significant Accounting Policies

(A) Companies Included in Consolidation

Companies included in consolidation are AIXTRON SE, and companies controlled by AIXTRON SE. The balance sheet date of all consolidated companies is December 31. A list of all consolidated companies is shown in note 32.

(B) Basis of Accounting

The consolidated financial statements are presented in Euro (EUR). The amounts are rounded to the nearest thousand Euro (kEUR).

The financial statements have been prepared on the historical cost basis, except for the revaluation of certain financial instruments.

The preparation of financial statements in conformity with IFRS requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the balance sheet date and the reported amounts of income and expenses during the reported period. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimate is revised if this revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods. Judgments which have a significant effect on the Group's financial statements are described in note 37.

The accounting policies set out below have been applied consistently to all periods presented in these consolidated financial statements.

The accounting policies have been applied consistently by each consolidated company.

(C) Bases of Consolidation

(I) Subsidiaries

The consolidated financial statements incorporate the financial statements of the Company and entities controlled by the Company (its subsidiaries) made up to 31 December each year. Control is achieved when the Company:

- has the power over the investee;
- is exposed, or has rights, to variable returns from its involvement with the investee; and
- has the ability to use its power to affects its returns.

The Company reassesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control listed above.

Entities over which AIXTRON SE has control are treated as subsidiaries (see note 32). The results of subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases.

(II) Transactions Eliminated on Consolidation

All intercompany income and expenses, transactions and balances have been eliminated in the consolidation.

(D) Foreign Currency

The consolidated financial statements have been prepared in Euro (EUR). In the translation of financial statements of subsidiaries outside the Euro-Zone the local currencies are also the functional currencies of those companies. Assets and liabilities of those companies are translated to EUR at the exchange rate as of the balance sheet date. Revenues and expenses are translated to EUR at average exchange rates for the year or at average exchange rates for the period between their inclusion in the consolidated financial statements and the balance sheet date. Net equity is translated at historical rates. The differences arising on translation are disclosed in the consolidated statement of changes in equity.

Exchange gains and losses resulting from fluctuations in exchange rates in the case of foreign currency transactions are recognized in the income statement in „other operating income“ or „other operating expenses“.

(E) Property, Plant and Equipment

(I) Acquisition or Manufacturing Cost

Items of property, plant and equipment are stated at cost, plus ancillary charges such as installation and delivery costs, less accumulated depreciation (see below) and impairment losses (see accounting policy (j)).

Costs of internally generated assets include not only costs of material and personnel, but also a share of directly attributable overhead costs, such as employee benefits, delivery costs, installation, and professional fees.

Where parts of an item of property, plant and equipment have different useful lives, they are depreciated as separate items of property, plant and equipment.

(II) Subsequent Costs

AIXTRON recognizes in the carrying amount of an item of property, plant and equipment the cost of replacing components or enhancement of such an item when that cost is incurred if it is probable that the future economic benefits embodied in the item will flow to the Group and the cost of the item can be measured reliably. All other costs such as repairs and maintenance are expensed as incurred.

(III) Government Grants

Government grants related to the acquisition or manufacture of owned assets are deducted from original cost at the date of capitalization.

(IV) Depreciation

Depreciation is charged on a straight-line basis over the estimated useful lives of each part of an item of property, plant and equipment. Useful lives, depreciation method and residual values of property, plant and equipment are reviewed at the year-end date or more frequently if circumstances arise which are indicative of a change. The estimated useful lives are as follows:

• Buildings	25- 45 years
• Machinery and equipment	3- 19 years
• Other plant, factory and office equipment	2- 20 years

The useful lives of leased assets do not exceed the expected lease periods.

(V) Leased Assets

The Group as Lessee

AIXTRON assesses whether a contract is, or contains, a lease, at inception of the contract. The Group recognizes a lease asset and a corresponding lease liability with respect to all lease arrangements in which it is the lessee, except for short-term leases (defined as leases with a lease term of 12 months or less) and leases of low value assets (such as tablets and personal computers, small items of office furniture and telephones). For these leases, the Group recognizes the lease payments as an operating expense on a straight-line basis over the term of the lease unless another systematic basis is more representative of the time pattern in which economic benefits from the leased assets are consumed.

AIXTRON recognizes a leased asset and a lease liability at the lease commencement date. The leased asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received.

The right-of-use assets are presented in property, plant and equipment, and leased assets in the consolidated statement of financial position.

The leased asset is subsequently depreciated using the straight-line method from the commencement date to the earlier of the end of the useful life of the asset or the expected end of the lease term. The estimated useful lives of leased assets are determined on the same bases as those of property, plant and equipment. In addition, the leased asset is periodically tested and reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the company's incremental borrowing rate.

The lease liabilities are included in other non-current payables and other current liabilities in the consolidated statement of financial position.

Lease payments included in the measurement of the lease liability comprise fixed payments, less any lease incentives and variable lease payments that depend on an index or rate, initially measured using the index or rate at the commencement date.

The lease liability is measured at amortised cost using the effective interest method. It is remeasured when there is a change in future lease payments arising from a change in index or rate, or if the company changes its assessment of whether it will exercise a purchase, extension or termination option.

When the lease liability is remeasured in this way, a corresponding adjustment is made to the carrying amount of the leased asset, or is recorded in profit or loss if the carrying amount of the leased asset has been reduced to zero.

The Group did not make any such adjustments during the periods presented.

(F) Intangible Assets

(I) Goodwill

Business combinations are accounted for by applying the purchase method.

Goodwill is stated at cost less any accumulated impairment loss. Goodwill is allocated to cash-generating units and is tested annually for impairment (see accounting policy (j)).

(II) Research and Development

Expenditure on research activities, undertaken with the prospect of gaining new technical knowledge and understanding using scientific methods, is recognized as an expense as incurred.

Expenditure on development comprises costs incurred with the purpose of using scientific knowledge technically and commercially. As not all criteria of IAS 38 are met AIXTRON does not capitalize such costs.

(III) Other Intangible Assets

Other intangible assets that are acquired are stated at cost less accumulated amortization (see below) and impairment losses (see accounting policy (j)).

Intangible assets acquired through business combinations are stated at their fair value at the date of purchase.

Expenditure on internally generated goodwill, trademarks and patents is expensed as incurred.

(IV) Subsequent Expenditure

Subsequent expenditure on capitalized intangible assets is capitalized only when it increases the future economic benefits embodied in the specific asset to which it relates. All other expenditure is expensed as incurred.

(V) Amortization

Amortization is charged on a straight-line basis over the estimated useful lives of intangible assets, except for goodwill. Goodwill has a useful life which is indefinite and is tested annually in respect of its recoverable amount. Other intangible assets are amortized from the date they are available for use. Useful lives and residual values of intangible assets are reviewed at the year-end date or more frequently if circumstances arise which are indicative of a change. The estimated useful lives are as follows:

• Software	2- 5 years
• Patents and similar rights	4- 18 years
• Customer base and product and technology know how	6- 10 years

(G) Financial Instruments

(I) Financial Assets

Financial assets are classified into the following specific categories: financial assets 'at fair value through profit or loss' (FVTPL), 'at fair value through other comprehensive income (FVTOCI), and 'at amortized cost'. The classification depends on the nature and purpose of the financial assets and is determined at the time of initial recognition.

(II) Financial Assets at FVTOCI

AIXTRON did not have any financial assets in these categories during the periods covered by this report.

(III) Financial Assets at Amortized Cost

Financial assets are measured at amortized cost as they are held within a business model to collect contractual cash flows and these cash flows consist solely of payments of principal and interest on the principal amount outstanding.

(IV) Financial Assets at FVTPL

All financial assets not classified as measured at amortized cost or FVTOCI under IFRS 9 are measured at fair value through profit and loss (FVTPL).

Financial assets at FVTPL are measured at fair value at the end of each reporting period, with any fair value gains or losses recognized in profit or loss. The gain or loss including dividends earned on financial asset and is included in profit and loss account and in note 5 or 6 respectively. Fair value is determined in accordance with IFRS 13.

(V) Trade Receivables

Trade receivables and other receivables are measured at amortized cost as they are held within a business model to collect contractual cash flows and these cash flows consist solely of payments of principal and interest on the principal amount outstanding.

(VI) Impairment of Financial Assets

The Group recognizes a loss allowance for expected credit losses (ECL) on trade receivables and contract assets. The amount of expected credit losses is updated at each reporting date to reflect changes in credit risk since initial recognition of the respective financial instrument. The Group always recognizes lifetime ECL for trade receivables, and contract assets. The expected credit losses on these financial assets are estimated using a provision matrix based on the Group's historical credit loss experience, adjusted for factors that are specific to the debtors, general economic conditions and an assessment of both the current as well as the forecast direction of conditions at the reporting date, including time value of money where appropriate.

For all other financial instruments, the Group recognizes lifetime ECL when there has been a significant increase in credit risk since initial recognition. However, if the credit risk on the financial instrument has not increased significantly since initial recognition, the Group measures the loss allowance for that financial instrument at an amount equal to 12-month ECL. Lifetime ECL represents the expected credit losses that will result from all possible default events over the expected life of a financial instrument. In contrast, 12-month ECL represents the portion of lifetime ECL that is expected to result from default events on a financial instrument that are possible within 12 months after the reporting date.

(VII) Cash and Cash Equivalents

Cash and cash equivalents comprise cash on hand and deposits with banks with a maturity of less than three months at inception.

(VIII) Equity Instruments

Equity instruments, including share capital, issued by the Group are recorded at the proceeds received, net of direct issue costs.

(IX) Financial Liabilities

Financial liabilities are classified as either financial liabilities “at FVTPL” or "at amortized cost".

(X) Financial Liabilities at FVTPL

AIXTRON did not have any financial liabilities in this category during the periods covered by this report.

(XI) Financial Liabilities at Amortized Cost

Other financial liabilities, including trade payables, are measured at amortized cost.

(XII) Derivative Financial Instruments and Hedge Accounting

The Group's activities expose it to the financial risks of changes in foreign exchange currency rates (see note 25). AIXTRON may use foreign exchange forward contracts to hedge these exposures. AIXTRON does not use derivative financial instruments for speculative purposes. The use of financial derivatives is governed by policies approved by the Executive Board, which provide written principles on the use of financial derivatives.

AIXTRON did not have any derivative financial instruments in the periods covered by this report.

(H) Inventories

Inventories are stated at the lower of cost and net realizable value. Net realizable value is the estimated selling price in the ordinary course of business, less the estimated cost of completion and selling expenses. Cost is determined using weighted average cost.

The cost includes expenditures incurred in acquiring the inventories and bringing them to their existing location and condition. In the case of work in progress and finished goods, cost includes direct material and production cost, as well as an appropriate share of overheads based on normal operating capacity. Scrap and other wasted costs are expensed on a periodic basis either as cost of sales or, in the case of beta tools as research and development expense.

Allowance for slow moving, excess and obsolete, and otherwise unsaleable inventory is recorded based primarily on either the estimated forecast of product demand and production requirement or historical usage. When the estimated future demand is less than the inventory, AIXTRON writes down such inventories.

(I) Operating Result

Operating result is stated before finance income, finance expense and tax.

(J) Impairment of Property, Plant and Equipment and Intangible Assets

Goodwill purchased as part of a business acquisition is tested annually for impairment, irrespective of whether there is any indication of impairment. For impairment test purposes, the goodwill is allocated to cash-generating units. Impairment losses are recognized to the extent that the carrying amount exceeds the higher of fair value less costs of disposal or value in use of the cash-generating unit. Details of impairment test are shown in note 12.

Property, plant and equipment as well as other intangible assets are tested for impairment, where there is any indication that the asset may be impaired. The Group assesses at the end of each period whether there is an indication that an asset may be impaired. Impairment losses on such assets are recognized, to the extent that the carrying amount exceeds both the fair value that would be obtainable from a disposal in an arm's length transaction, and the value in use.

In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments and the risks associated with the asset.

Impairment losses are reversed if there has been a change in the estimates used to determine the recoverable amount. Reversals are made only to the extent that the carrying amount of the asset does not exceed the carrying amount that would have been determined if no impairment loss had been recognized.

An impairment loss in respect of goodwill is not reversed.

(K) Earnings Per Share

Basic earnings per share are computed by dividing net income (loss) by the weighted average number of issued common shares for the year. Diluted earnings per share reflect the potential dilution that could occur if options issued under the Company's stock option plans were exercised unless such exercises had an anti-dilutive effect.

(L) Employee Benefits

(I) Defined Contribution Plans

Obligations for contributions to defined contribution pension plans are recognized as an expense in the income statement as incurred.

(II) Share-based Payment Transactions

Stock Option Programs

The stock option programs from 2007 and 2012 allow members of the Executive Board, management, and employees of the Group to acquire shares of AIXTRON SE. The contractual terms of these share programs are presented in note 22. These stock option programs are accounted for according to IFRS 2 for equity-settled share-based payment transactions. The fair value of options granted is recognized as personnel expense with a corresponding increase in additional paid-in capital. The fair value is calculated at grant date and spread over the period during which the employees become unconditionally entitled to the options. The fair value of the options granted is measured using a mathematical model, taking into account the terms and conditions upon which the options were granted. The vesting conditions relate to a service condition and a market condition in relation to the share price of AIXTRON SE. In the calculation of the personnel expense options forfeited during the performance period are taken into account.

Long-term Incentive of the Board of Directors (LTI)

Executive Board remuneration system at AIXTRON SE consists long-term variable remuneration incentives (LTI) granted in shares of AIXTRON SE. These equity-settled share-based payments are measured at fair value of the equity instruments at the grant date. The fair value of the shares granted is measured using a mathematical model, taking into account the terms and conditions upon which the shares were granted. Further details regarding the equity-settled share-based transactions are set out in note 22 and 31.

The fair value determined at the grant date of the equity-settled share-based payments is expensed on a straight-line basis over the performance period, based on the Group's estimate of the number of equity instruments expected to vest. For non-market-based vesting conditions, the Group reviews its estimate of number of equity instruments at each reporting date during vesting period. The impact of the revision of the original estimates, if any, is recognized in profit or loss and a corresponding adjustment is recognized to equity.

(M) Provisions

A provision is recognized when the Group has a present legal or constructive obligation as a result of a past event, and it is probable that an outflow of economic benefits will be required to settle this obligation. If the effect is material, provisions are determined by discounting the expected future cash flows at a pre-tax interest rate that reflects current market assessments of the time value of money and, where appropriate, the risks associated with the liability.

(I) Warranties

The Group normally offers one- or two-year warranties on all of its products. Warranty expenses generally include cost of labor, material and related overhead necessary to repair a product free of charge during the warranty period. The specific terms and conditions of those warranties may vary depending on the equipment sold, the terms of the contract and the locations from which they are sold. The Group establishes the costs that may be incurred under its warranty obligations and records a liability in the amount of such costs at the time revenue is recognized. Factors that affect the warranty liability include the historical and anticipated rates of warranty claims and cost per claim.

The Group accrues warranty cost for systems shipped based upon historical experience. The Group periodically assesses the adequacy of its recorded warranty provisions and adjusts the amounts as necessary.

Extended warranties, beyond the normal warranty periods, are treated as maintenance services in accordance with (n) below.

(II) Onerous Contracts

A provision for onerous contracts is recognized when the expected economic benefits to be derived by the Group from a contract are lower than the unavoidable cost of meeting its obligations under the contract. The amount recognized as a provision is determined as the excess of the unavoidable costs of meeting the obligations under the contract over the economic benefits expected to be received. Before making that provision any impairment loss that has occurred on assets dedicated to that contract are recognized. The provision is discounted to present value if the adjustment is material.

(III) Restructuring

A restructuring provision is recognized when the Group has developed a detailed formal plan for the restructuring and the parties concerned have been informed. The measurement of restructuring provision includes only the direct expenditures arising from the restructuring, which are those amounts that are both necessarily entailed by the restructuring and not associated with the ongoing activities of the entity.

(N) Revenue

AIXTRON enters contracts with customers for goods and services, including combinations of goods and services. Contracts are usually for fixed prices and do not offer any unilateral right of return to the customer.

Revenue is generated from the following major sources:

- sale of equipment
- installation of equipment
- sale and installation of customer specific equipment
- spare parts
- services

Revenue is recognized when the Group satisfies a performance obligation in contracts with its customers by transferring control of goods or services to the customer and it is probable that the economic benefits associated with the transaction will flow to the entity.

The sale of equipment involves acceptance tests at AIXTRON´s production facility. After successful completion of this test, the equipment is dismantled and packaged for shipment.

Revenues from the sale of products that have been demonstrated to meet product specification requirements are recognized at a point in time upon shipment to the customer if full acceptance tests have been successfully completed at the AIXTRON production facility and control has passed to the customer and the customer can benefit from the product either on its own or with other resources that are readily available.

Upon arrival at the customer site the equipment is reassembled and installed, which is a service generally performed by AIXTRON engineers. Revenue relating to the installation of the equipment is recognized at the point in time when AIXTRON has fulfilled its performance obligations under the contract and control of the goods has passed to the customer.

Revenue related to equipment where meeting the product specification requirements has not yet been demonstrated or the customer cannot benefit from the product either on its own or with other resources that are readily available, or where specific rights of return have been negotiated, is recognized only at the point in time when the customer finally accepts the equipment and has control.

Revenue for the sale of equipment which is built for a specific customer and does not have an alternative use is recognized over time based on milestones for the particular contract and the extent to which the Group's performance obligations have been satisfied. Typically, these contracts relate to a small number of upgrades to equipment already belonging to the customer.

Revenue related to spares is recognized at the point in time at which the customer obtains control of the goods, generally at the point of delivery.

Revenue related to services is recognized either at the point in time at which the service, such as a repair, is delivered and the customer obtains control of the related item, or for services such as extended warranty, revenue is recognized over time during the period in which it is provided.

AIXTRON gives no general rights of return, settlement discounts, credits or other sales incentives within its terms of sale.

The consideration from contracts which include combinations of different performance obligations such as equipment, spares and services is allocated to each performance obligation in an amount that depicts the amount of consideration to which the Group expects to be entitled in exchange for transferring the goods or services to the customer.

The Group uses a combination of methods such as an estimated cost plus margin approach, and allocating discounts from list price proportionately to each performance obligation when determining the consideration for each performance obligation.

The portion of equipment revenue related to installation services is determined based on either the fair value of the installation services or, if the Group determines that there may be a risk that the economic benefits of installation services may not flow to the Group, the portion of the contract amount that is due and payable upon completion of the installation.

Fair value of the installation services corresponds to the part of the transaction price that the Group would be expected to receive as consideration in exchange for this service in the sale of such an equipment.

(O) Expenses

(I) Cost of Sales

Cost of sales includes such direct costs as materials, labor, and related production overheads.

(II) Research and Development

Research and development costs are expensed as incurred. Costs of beta tools which do not qualify to be recognized as an asset are expensed as research and development costs.

Project funding received from governments (e.g. state funding) and the European Union is recorded in other operating income, if the research and development costs are incurred and provided that the conditions for the funding have been met.

(III) Lease Payments

Payments made under leases for assets which have not been capitalized are recognized as expense on a straight-line basis over the term of the lease.

(P) Government Grants

Government grants awarded for project funding are recorded in other operating income if the research and development costs are incurred and provided that the conditions for the funding have been met.

Government grants awarded to support continued employment where work is not allowed are recorded as a reduction in the related expense, as this presents the underlying reason for the grant better.

(Q) Tax

The tax expense represents the sum of the current and deferred tax.

A deferred tax asset is recognized only to the extent that it is probable that future taxable profits can be set off against timing differences and tax losses carried forward or taxable temporary differences exist. Deferred tax assets are reduced to the extent that it is no longer probable that the related tax benefit can be realized. The recoverability of deferred tax assets is reviewed at least annually.

Deferred tax assets and liabilities are recorded for temporary differences between tax and commercial balance sheets and for losses brought forward for tax purposes as well as for tax credits of the companies included in consolidation. The deferred taxes are calculated, based on tax rates applicable at the balance sheet date or known to be applicable in the future. Effects of changes in tax rates on the deferred tax assets and liabilities are recognized upon substantively enacted amendments to the law.

(R) Segment Reporting

An operating segment is a component of the Group that is engaged in business activities and whose operating results are reviewed regularly by the Chief Operating Decision Maker, which AIXTRON considers to be its Executive Board, to make decisions about resources to be allocated to the segment and assess its performance and for which discrete financial information is available. AIXTRON has only one reportable segment.

Accounting standards applied in segment reporting are in accordance with the general accounting policies as explained in this section.

(S) Cash Flow Statement

The cash flow statement is prepared in accordance with IAS 7. Cash flows from operating activities are prepared using the indirect method. Cash flows from taxes are included in cash flows from operating activities.

(T) Adoption of New and Revised Standards

New and Amended IFRS Standards Effective for the Current Year

In the current year, the Group has applied the below amendments to IFRS standards and interpretations issued by the Board that are effective for an annual period that begins on or after 1 January 2021. Their adoption has not had any material impact on the disclosures or on the amounts reported in these consolidated financial statements.

Initial application of Interest Rate Benchmark Reform amendments to IFRS 9/IAS 39, IFRS 7, IFRS 4 and IFRS 16 (Phase 2)	The Group has adopted the Phase 2 amendments Interest Rate Benchmark Reform. Adopting these amendments enables the Group to reflect the effects of transitioning from interbank offered rates (IBOR) to alternative benchmark interest rates (also referred to as 'risk free rates' or RFRs) without giving rise to accounting impacts that would not provide useful information to users of financial statements. The change has had no impact on the Group.
Initial application of COVID-19-Related Rent Concessions beyond June 30, 2021- Amendment to IFRS 16	In prior year, the IASB issued COVID-19 Related Rent Concessions (Amendment to IFRS 16) that provides practical relief to lessees in accounting for rent concessions occurring as a direct consequence of COVID-19, by introducing a practical expedient to IFRS 16. This practical expedient was available to rent concessions for which any reduce in lease payments affected payments originally due on or before June 30, 2021. In current year, the Board issued COVID-19-Related Rent Concessions beyond June 30, 2021 that extends the practical expedient to apply reduction in lease payments originally due on or before June 30, 2022. The company has had no COVID-19 related rent concessions and therefore it has had no impact of the Group results.

New and Revised IFRS Standards in Issue but not yet Effective

At the date of authorization of these consolidated financial statements, the Group has not applied following new and revised standards and interpretations which have been issued but are not yet effective.

AIXTRON does not expect that the adoption of these standards will have a material impact on the financial statements of the Group in future periods.

IFRS 17	Insurance Contracts[2)]
IFRS 10 and IAS 28 (amendments)	Sale or contribution of assets between an Investor and its Associate or Joint Venture[3),4)]
Amendments to IAS 1	Classification of liabilities as current or non-current[2),4)]
Amendments to IFRS 3	Reference to the Conceptual Framework[1)]
Amendments to IAS 16	Property, Plant and Equipment – Proceeds before Intended Use[1)]
Amendments to IAS 37	Onerous Contracts – Cost of fulfilling a contract[1)]
Annual Improvements to IFRS Standards 2018-2020 Cycle	Amendments to IFRS 1 First-time Adoption of International Financial Reporting Standards, IFRS 9 Financial Instruments, IFRS 16 Leases, and IAS 41 Agriculture[1)]
Amendments to IAS 1 and IFRS Practice Statement 2	Disclosure of Accounting Policies[2),4)]
Amendments to IAS 8	Definition of Accounting Estimates[2),4)]
Amendments to IAS 12	Deferred Tax related to assets and liabilities arising from a single transaction[2),4)]

1) Initial application to annual reporting periods beginning on or after 1 January 2022.

2) Initial application to annual reporting periods beginning on or after 1 January 2023.

3) The effective date of the amendments has yet to be set by the Board.

4) EU endorsement is still pending.

3. Segment Reporting and Revenues

IFRS 8 requires operating segments to be identified on the basis of internal reports about components of the Group that are regularly reviewed by the Executive Board, as chief operating decision maker, in order to allocate resources to the segments and to assess their performance.

In the period 2020 to 2021 the Executive Board regularly reviewed financial information to allocate resources and assess performance only on a consolidated Group basis since the various activities of the Group are largely integrated from an operational perspective. In accordance with IFRS, AIXTRON has only one reportable segment.

The Group's reportable segment is based around the category of goods and services provided to the semiconductor industry

Revenues are recognized as disclosed in note 2 (n).

AIXTRON values the equipment revenue deferred for equipment installation services, using a market-based approach, based on observed transactions for all such contracts involving two elements where revenue has been recognized during the financial year. This is level 2 within the fair value hierarchy described in IFRS 13. The fair value of the installation services is taken as the most frequently observed (modal value) percentage of the contract price payable upon completion of the installation service. For the years 2020 to 2021, 10% of the revenue related to equipment is allocated for installation services.

For contracts where equipment revenue is recognized in two elements, the same method is also used to determine the fair value of products delivered, which is taken to be the most frequently observed (modal value) percentage of the contract value payable upon delivery of the equipment to the customer. This is also level 2 in the fair value hierarchy.

Segment revenues and results

in EUR thousands	Note	2021	2020
Equipment revenues		366,512	223,018
Spares revenues		57,599	41,348
Services revenues		4,843	4,881
Revenue from external customers		**428,954**	**269,247**
Inventories recognized as an expense	15	177,983	113,801
Reversals of inventory provisions	15	-585	-1,029
Obsolescence and valuation allowance expense for inventories	15	2,851	1,918
Personnel expense	7	79,285	66,081
Depreciation and impairment	11	8,198	11,525
Amortization	12	1,631	931
Other expenses		71,278	53,904
Foreign exchange losses	5	804	1,822
Other operating income	5	-11,469	-14,536
Segment profit		**98,978**	**34,830**
Finance income	8	232	348
Finance expense	8	-279	-104
Profit before tax		**98,931**	**35,074**

Reversals of impairment allowances are included in other operating income as described in note 5.

The accounting policies of the reportable segment are identical to the Group's accounting policies as described in note 2. Segment profit represents the profit earned by the segment without the allocation of investment revenue, finance costs and income tax expense. This is the measure reported to the Executive Board for the purpose of resource allocation and assessment of performance.

The transaction price allocated to (partially) unsatisfied performance obligations at 31 December 2021 is Euro 214.6 million (31 December 2020: Euro 150.9 million). Management expects that approximately 82% of the transaction price allocated to the unsatisfied contracts as of the year ended 2021 will be recognized as revenue during 2022. The remaining amount will be recognized during the next financial year.

Segment assets and liabilities

in EUR thousands	31.12.21	31.12.20
Semi-conductor equipment segment assets	361,110	264,884
Unallocated assets	379,586	325,542
Total Group assets	**740,696**	**590,426**

in EUR thousands	31.12.21	31.12.20
Semi-conductor equipment segment liabilities	138,147	91,833
Unallocated liabilities	10,383	2,215
Total Group liabilities	**148,530**	**94,048**

For the purpose of monitoring segment performance and allocating resources all assets other than tax assets, cash and other financial assets are treated as allocated to the reportable segment. All liabilities are allocated to the reportable segment apart from tax liabilities and post-employment benefit liabilities.

Additions and changes to property, plant and equipment, to goodwill and to intangible assets, and the depreciation and amortization expenses are given in notes 11 and 12. Other non-current financial assets decreased by kEUR 59,794 during 2021 (increased by kEUR 60,051 during 2020).

Information concerning other material items of income and expense for personnel expenses and R&D expenses can be found in notes 7 and 4.

Geographical Information

The Group's revenue from continuing operations from external customers and information about its non-current assets by geographical location are detailed below. Revenues from external customers are attributed to individual countries based on the country in which it is expected that the products will be used.

in EUR thousands	2021	2020
Asia	299,853	196,973
Europe	85,911	40,954
Americas	43,190	31,320
Total	**428,954**	**269,247**

Sales from external customers attributed to Germany, AIXTRON's country of domicile, and to other countries which are of material significance are as follows:

in EUR thousands	2021	2020
Germany	37,110	12,235
USA	43,090	29,849
China	211,820	153,478
Taiwan	66,056	16,140

Revenues from all countries outside Germany were kEUR 391,844 and kEUR 257,012 for the years 2021 and 2020 respectively.

In 2021 sales to one customer represented 12.1% of Group revenue, with no other customer exceeding 10%. During 2020 sales to one customer represented 10.4% of Group revenue, with no other customer exceeding 10%.

in EUR thousands	31.12.21	31.12.20
Asia	1,373	1,124
Europe excluding Germany	18,123	14,653
Germany	118,793	111,810
USA	10,289	9,735
Total Group non-current assets	**148,578**	**137,322**

Non-current assets exclude deferred tax assets, financial instruments, post-employment benefit assets and rights arising under insurance contracts.

4. Research and Development

Research and development costs, before deducting project funding received, were kEUR 56,809 and kEUR 58,379 for the years ended December 31, 2021 and 2020 respectively.

After deducting project funding received and not repayable, net expenses for research and development were kEUR 47,876 and kEUR 50,327 for the years ended December 31, 2021 and 2020 respectively.

5. Other Operating Income

in EUR thousands	2021	2020
Research and development funding	8,933	8,052
Income from resolved contract obligations	0	315
Compensation received	10	535
Foreign exchange gains	1,964	1,027
Gain on disposal of assets	20	1
Reversals of impairment allowance	0	2,909
Other	542	1,697
	11,469	**14,536**

in EUR thousands	2021	2020
Foreign exchange gains	1,964	1,027
Foreign exchange losses (see note 6)	-804	-1,822
Net foreign exchange gains (losses)	**1,160**	**-795**

The total amount of exchange gains and losses (see also note 6) recognized in profit or loss was a gain of kEUR 1,160 (2020: gain kEUR 795).

Compensation received in 2021 of kEUR 10 (2020: kEUR 535) is an insurance claim for damages incurred during shipment of goods.

In 2021 the gain on disposal of assets amounted to kEUR 20 (2020: kEUR 1).

6. Other Operating Expenses

in EUR thousands	2021	2020
Foreign exchange losses	804	1,822
Losses from the disposal of fixed assets	103	52
Additions to allowances for receivables or write-off of receivables	0	12
Financial assets at FVTPL	708	16
Other	159	39
	1,774	**1,941**

The net loss of kEUR 708 in 2021 arose on financial assets required to be measured at FVTPL (2020: loss kEUR 16). The amount includes unrealized losses of kEUR 659 (2020: kEUR 0) and realized losses of kEUR 49 (2020: kEUR 16).

7. Personnel Expense

in EUR thousands	2021	2020
Payroll	65,966	56,263
Social insurance contributions	8,310	7,441
Expense for defined contribution plans	1,149	1,248
Share-based payments	3,860	1,129
	79,285	**66,081**

8. Net Finance Income

in EUR thousands	2021	2020
Finance income		
Interest income on bank deposits	232	348
On financial assets measured at amortised cost	232	348
Finance expense		
Interest paid on bank overdrafts and balances	-172	-35
Interest expense on lease liabilities	-107	-69
On financial liabilities not at fair value through profit or loss and on financial assets	-279	-104
Net finance income	**-47**	**244**

9. Income Tax Expense / Benefit

The following table shows income tax expenses and income recognized in the consolidated income statement:

in EUR thousands	2021	2020
Current tax expense (+)/current tax income (-)		
for current year	13,810	3,958
for prior years	-175	-44
Total current tax expense	**13,635**	**3,914**
Deferred tax expense (+)/deferred tax income (-)		
- from temporary differences	-37	-96
- from changes in local tax rate	16	2
- from reversals and write-downs	-9,522	-3,216
Total deferred tax income	**-9,543**	**-3,310**
Income tax expense	**4,092**	**604**

The income/loss before income taxes and income tax expense and income relate to the following regions:

in EUR thousands	2021	2020
Income/loss before income taxes		
Germany	100,981	26,999
Outside Germany	-2,050	8,075
Total	**98,931**	**35,074**
Income tax expense/income		
Germany	4,218	-400
Outside Germany	-126	1,004
Total	**4,092**	**604**

The Group's effective tax rate is different from the German statutory tax rate of 32.80% (2020: 32.80%);which is based on the German corporate income tax rate, including solidarity surcharge, and trade tax.

The following table shows the reconciliation from the expected to the reported tax expense:

in EUR thousands	2021	2020
Net result before taxes	**98,931**	**35,074**
Income tax expense/benefit (German tax rate)	32,449	11,504
Effect from differences to foreign tax rates	-302	-1,160
Non-deductible expenses	251	464
Tax losses not recognized as assets	1,685	173
Recognition / derecognition of deferred tax assets	-9,587	-3,665
Effect from changes in local tax rate	0	2
Effect of the use of loss carryforwards	-20,661	-5,986
Effect of permanent differences	27	3
Other	230	-731
Income tax expense	**4,092**	**604**
Effective tax rate	**4.1%**	**1.7%**

In addition to the amount charged to profit or loss, the following amounts relating to tax have been recognized in other comprehensive income (OCI):

in EUR thousands	2021	2020
Deferred tax from remeasurement of defined benefit obligation	**26**	0
Deferred tax related to items recognized in other comprehensive income	**26**	**0**

10. Current Tax Receivable and Payable

As of December 31, 2021 the current tax receivable and payable, arising because the amount of tax paid in the current or in prior periods was either too high or too low, are kEUR 2,363 (2020: kEUR 949) and kEUR 9,729 (2020: kEUR 2,215) respectively.

11. Property, Plant and Equipment and Leased Assets

in EUR thousands	Land and buildings	Technical equipment	Other equipment	Assets under construction	Leased land and buildings	Leased equipment	Total
Cost							
Balance at January 1, 2020	65,077	74,421	15,836	3,340	3,893	332	162,899
Additions	59	2,252	983	3,371	353	830	7,848
Disposals	0	2,197	32	14	475	401	3,119
Transfers	0	2,107	321	-2,428	0	0	0
Effect of movements in exchange rates	-130	-142	-113	-48	-188	-4	-625
Balance at December 31, 2020	**65,006**	**76,441**	**16,995**	**4,221**	**3,583**	**757**	**167,003**
Balance at January 1, 2021	65,006	76,441	16,995	4,221	3,583	757	167,003
Additions	83	3,661	1,438	11,207	1,916	37	18,342
Disposals	281	1,853	351	0	644	80	3,209
Transfers	0	2,837	422	-3,259	0	0	0
Effect of movements in exchange rates	175	293	148	150	276	3	1,045
Balance at December 31, 2021	**64,983**	**81,379**	**18,652**	**12,319**	**5,131**	**717**	**183,181**
Depreciation and impairment losses							
Balance at January 1, 2020	29,301	55,103	12,752	8	966	230	98,360
Depreciation charge for the year	2,815	3,854	1,176	0	883	234	8,962
Impairments	0	2,563	0	0	0	0	2,563
Reversal of impairment	-2,909	0	0	0	0	0	-2,909
Disposals	0	2,147	31	0	475	389	3,042
Effect of movements in exchange rates	-120	-134	-90	-1	-54	-1	-400
Balance at December 31, 2020	**29,087**	**59,239**	**13,807**	**7**	**1,320**	**74**	**103,534**
Balance at January 1, 2021	29,087	59,239	13,807	7	1,320	74	103,534
Depreciation charge for the year	1,334	4,093	1,317	0	908	191	7,843
Impairments	0	355	0	0	0	0	355
Disposals	282	1,809	352	0	644	51	3,138
Effect of movements in exchange rates	168	199	118	1	86	2	574
Balance at December 31, 2021	**30,307**	**62,077**	**14,890**	**8**	**1,670**	**216**	**109,168**
Carrying amounts							
At January 1, 2020	35,776	19,318	3,084	3,332	2,927	102	64,539
At December 31, 2020	**35,919**	**17,202**	**3,188**	**4,214**	**2,263**	**683**	**63,469**
At January 1, 2021	35,919	17,202	3,188	4,214	2,263	683	63,469
At December 31, 2021	**34,676**	**19,302**	**3,762**	**12,311**	**3,461**	**501**	**74,013**

Depreciation

Depreciation expense amounted to kEUR 7,843 for 2021 and kEUR 8,962 for 2020 respectively.

During each financial year, asset useful lives and residual values are reviewed in accordance with IFRS. There was no significant adjustment of asset useful lives and residual values in 2021. In 2020 the effect of the changes in asset useful lives and residual values has been to decrease the depreciation expense by kEUR 962 compared with the depreciation which would have occurred had the asset useful lives and residual values remained unchanged.

Impairments

In 2021 AIXTRON reviewed the valuation of its property, plant and equipment and wrote down the value of some specific laboratory equipment that no longer had any economic value. An impairment expense of kEUR 355 was incurred (2020 kEUR 2,563).

In 2020 AIXTRON reviewed the valuation of its German production facilities and reversed an impairment allowance of kEUR 2,909 for one of the two production sites as we expect to continue to use this facility for production.

Assets Under Construction and Prepayments Made

Assets under construction relates mainly to self-built systems for development laboratories and advanced payments made for laboratory equipment in 2021 and 2020.

Leased Assets

Disclosures in respect of the underlying leases are shown in note 27.

12. Intangible Assets

in EUR thousands	Goodwill	Other intangible assets	Total
Cost			
Balance at January 1, 2020	89,490	46,267	135,757
Additions	0	1,444	1,444
Effect of movements in exchange rates	-1,598	-2,023	-3,621
Balance at December 31, 2020	**87,892**	**45,688**	**133,580**
Balance at January 1, 2021	87,892	45,688	133,580
Additions	0	1,060	1,060
Disposals	0	1,168	1,168
Effect of movements in exchange rates	1,582	1,722	3,304
Balance at December 31, 2021	**89,474**	**47,302**	**136,776**
Amortisation and impairment losses			
Balance at January 1, 2020	17,121	43,895	61,016
Amortisation charge for the year	0	931	931
Effect of movements in exchange rates	-206	-2,014	-2,220
Balance at December 31, 2020	**16,915**	**42,812**	**59,727**
Balance at January 1, 2021	16,915	42,812	59,727
Amortisation charge for the year	0	1,175	1,175
Impairments	0	456	456
Disposals	0	1,116	1,116
Effect of movements in exchange rates	240	1,729	1,969
Balance at December 31, 2021	**17,155**	**45,056**	**62,211**
Carrying amounts			
At January 1, 2020	72,369	2,372	74,741
At December 31, 2020	**70,977**	**2,876**	**73,853**
At January 1, 2021	70,977	2,876	73,853
At December 31, 2021	**72,319**	**2,246**	**74,565**

Amortization and Impairment Expenses for Other Intangible Assets

Amortization and impairment expenses for other intangible assets are recognized in the income statement as follows:

in EUR thousands	2021 Amortization	2020 Amortization	2021 Impairment	2020 Impairment
Cost of sales	368	31	0	0
General administration expenses	724	808	0	0
Research and development costs	83	92	456	0
	1,175	**931**	**456**	**0**

In 2021 AIXTRON wrote down the value of one IT project that no longer had any economic value and intangible assets in scope of the restructuring of APEVA Group. An impairment expense of kEUR 456 was incurred. In 2020 no impairment losses were incurred, and no reversals of impairment losses were made.

The amortization expected to be charged on other intangible assets in the future years is as follows:

in EUR thousands	
2022	1,078
2023	641
2024	386
2025	88
2026	15
After 2026	38

The actual amortization can differ from the expected amortization.

Impairment of Goodwill

At the end of 2021 the Group assessed the recoverable amount of goodwill and determined that no impairment loss had to be recognized (2020: kEUR 0).

As at the end of 2021 the cash generating unit, to which the goodwill has been allocated, is the AIXTRON Group Semiconductor Equipment segment.

The recoverable amount of the cash-generating unit is determined through a fair value less cost to sell calculation. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. As AIXTRON has only one cash generating unit (CGU), market capitalization of AIXTRON, adjusted for a control premium, has been used to determine the fair value less cost to sell of the cash generating unit. This is level 2 in the hierarchy of fair value measures set out in IFRS 13.

As at December 31, 2021 the market capitalization of AIXTRON was Euro 2,005.2 million, based on a share price of Euro 17.87 and issued shares (excluding Treasury Shares) of 112,207,915.

In an orderly selling process costs are incurred. AIXTRON has used 1.5% to account for the costs to sell.

A control premium typically in the range 20%-40% is incurred in the acquisition of a company. A 20% premium has been applied in this test to adjust the market capitalization to the fair value. Market capitalization was also adjusted for net debt and tax assets prior to comparing it to the carrying amount of the CGU. The analysis shows that the fair value less costs to sell of the CGU AIXTRON exceeds its carrying amount and that Goodwill is not impaired.

Euro millions, except share price	Impairment Test 2021	Impairment Test 2020	Sensitivity Analysis 2021 No control premium
Share price- Euros	17.87	14.27	5.36
Market capitalisation as of December 31	2,005.2	1,595.4	601.2
Costs to sell in percentage	1.50%	1.50%	1.50%
Costs to sell	-30.1	-23.9	-9.0
Market capitalisation less cost to sell	1,975.1	1,571.5	592.2
Control premium in percentage	20.00%	20.00%	0.00%
Control premium	395.0	314.3	0.0
Market capitalisation and control premium less cost to sell	2,370.1	1,885.8	592.2
Net debt	-352.5	-310.2	-352.5
Tax assets	-16.7	-13.1	-16.7
Fair value less costs to sell of CGU	2,000.9	1,562.4	223.0
Carrying amount of the CGU	223.0	173.1	223.0
Surplus of fair value less cost to sell over carrying amount	1,778.0	1,389.4	0.0
Surplus of fair value less cost to sell over carrying amount as a percentage	797%	803%	0%

The fair value less costs to sell, which is the recoverable amount, exceeds the carrying amount of the CGU by 797% (2020: 803%).

A sensitivity analysis of the impairment test, in which the control premium is reduced to zero, shows that the carrying amount of the CGU would equal the recoverable amount should the market capitalization of AIXTRON fall by 70.0% (2020: 68.4%) to Euro 601.2 million (2020: Euro 503.9 million).

13. Other Non-Current Financial Assets

in EUR thousands	2021	2020
Long-term deposits with a term of more than 12 months	0	60,000
Miscellaneous other non-current financial assets	703	497
Total	**703**	**60,497**

Long-term deposits are cash deposits at banks. Miscellaneous other non-current financial assets mainly include security deposits for buildings.

The deposits are with a first-rate bank within the European Union and the company does not expect to incur any credit losses in respect of these deposits. The deposits are measured at amortized cost.

14. Deferred Tax Assets and Deferred Tax Liabilities

Recognized Deferred Tax Assets and Deferred Tax Liabilities

Deferred tax assets and liabilities are attributable to the following items:

	Assets		Liabilities		Total	
in EUR thousands	2021	2020	2021	2020	2021	2020
Property, plant and equipment	-52	-322	-668	0	-720	-322
Trade receivables	-34	72	0	0	-34	72
Inventories	836	527	0	0	836	527
Employee benefits	114	134	13	0	127	134
Provisions and other liabilities	102	197	0	0	102	197
Advance payments	57	-142	0	0	57	-142
Other	63	31	1	0	64	31
Tax losses	23,649	13,918	0	0	23,649	13,918
Total	**24,735**	**14,415**	**-654**	**0**	**24,081**	**14,415**

Deferred tax assets are recognized at the level of individual consolidated companies in which a loss was realized in the current or preceding financial year, only to the extent that realization in future periods is probable. The nature of the evidence used in assessing the probability of realization includes forecasts, budgets and the recent profitability of the relevant entity. The carrying amount of deferred tax assets for entities which have made a loss in either the current or preceding year was kEUR 427 (2020: kEUR 453).

Deferred taxes for tax losses in the amount of kEUR 99,429 (2020: kEUR 144,190) and on deductible temporary differences in the amount of kEUR 9,956 (2020: kEUR 7,765) were not recognized.

Tax losses in the amount of kEUR 90.694 can be used indefinitely (2020: kEUR 141,535), kEUR nil expire by 2026 (2020: kEUR nil, by 2025) and kEUR 8.735 expire after 2026 (2020: kEUR 10,420 after 2025).

The following table shows the development of deferred tax assets and liabilities during the financial year:

in EUR thousands	Balance at January 1, 2021	Recognized in income statement	Directly recognized in other comprehensive income	Balance at December 31, 2021
Property, plant and equipment	-322	-367	0	-720
Trade receivables	72	-105	0	-34
Inventories	527	299	0	836
Employee benefits	134	-31	26	127
Currency translation	0	0	97	0
Provisions and other liabilities	0	-94	0	102
Advance payments	-142	199	0	57
Other	31	99	0	64
Tax losses	13,918	9,543	0	23,649
	14,415	**9,543**	**123**	**24,081**

in EUR thousands	Balance at January 1, 2020	Recognized in income statement	Directly recognized in other comprehensive income	Balance at December 31, 2020
Property, plant and equipment	-4	-323	0	-322
Trade receivables	1	71	0	72
Inventories	554	-18	0	527
Employee benefits	82	54	0	134
Currency translation	0	0	-153	0
Provisions and other liabilities	85	115	0	0
Advance payments	0	-142	0	-142
Other	2	-2	0	31
Tax losses	10,538	3,555	0	13,918
	11,258	**3,310**	**-153**	**14,415**

15. Inventories

in EUR thousands	2021	2020
Raw materials and supplies	55,738	33,944
Work in process	57,222	35,718
Customer-specific work in process	3,413	2,051
Inventories at customers' locations	4,256	7,374
	120,629	**79,087**

in EUR thousands	Note	2021	2020
Inventories recognized as an expense during the period	3	177,983	113,801
Reversals of write-downs recognized during the year	3	-585	-1,029
		177,398	**112,772**
Write-down of inventories during the year	3	2,851	1,918
Inventories measured at net realisable value		953	196

The reversal of write-downs recognized during the year in both 2021 and 2020 mainly relates to inventories which had been written down to their net realizable value and subsequently were sold.

Customer-specific work in process relates to work performed at the customers' site, typically to install equipment or to upgrade customers' existing equipment. Variations in the level of contract balances- work in process in the year have occurred because of the normal variations in the stage of completion of the work on individual contracts. Completion of installation is the final contractual deliverable in most customer contracts which typically allows any remaining payments to be received from the customer.

16. Trade Receivables and Other Current Assets

in EUR thousands	2021	2020
Trade receivables	77,383	38,598
Contract assets receivable	3,579	2,732
Allowances for doubtful accounts	0	-26
Trade receivables - net	**80,962**	**41,304**
Prepaid expenses	1,536	964
Reimbursement of research and development costs	1,318	2,088
Advance payments to suppliers	1,196	1,210
VAT recoverable	5,534	1,665
Other assets	654	1,244
Total other current assets	**10,238**	**7,171**
Total trade receivables and other current assets	**91,200**	**48,475**

Additions to allowances against trade receivables are included in other operating expenses, releases of allowances are included in other operating income. Allowances against receivables developed as follows:

in EUR thousands	2021	2020
Allowance at January 1	26	124
Translation adjustments	0	-2
Impairment losses recognized	0	12
Used	-5	-108
Impairment losses reversed	-21	0
Allowance at December 31	**0**	**26**

Ageing of past due but not impaired receivables:

in EUR thousands	2021	2020
1-90 days past due	2,510	3,756
More than 90 days past due	134	355

Due to the worldwide spread of risks, there is a diversification of the credit risk for trade receivables. Generally, the Group demands no securities for financial assets. In accordance with usual business practice for capital equipment however, the Group mitigates its exposure to credit risk by requiring payment by irrevocable letters of credit and substantial payments in advance from most customers as conditions of contracts for sale of major items of equipment.

In 2021 three customers accounted for 28%, 12% and 12% of net trade receivables respectively. In 2020 three customers accounted for 16%, 11% and 10% of net trade receivables respectively. In determining concentrations of credit risk, the Group defines counterparties as having similar characteristics if they are connected entities.

Included in the Group's trade receivable balance are debtors with a carrying amount of kEUR 2,644 (2020: kEUR 4,111) which are past due at the reporting date for which the Group has not provided. As there has not been a significant change in credit quality, and although the Group has no collateral, the amounts are considered recoverable.

The Group measures the loss allowance for trade receivables at an amount equal to the lifetime expected credit loss. Based on its experience, the Group uses a general provision rate for lifetime expected credit loss of 0%, adjusted for factors which are specific to the debtors, general economic conditions, and an assessment of both the current as well as the forecast direction of conditions at the reporting date. In determining receivables which may be individually impaired the Group has taken into account the likelihood of recoverability based on the past due nature of certain receivables, and our assessment of the ability of all counterparties to perform their obligations.

17. Other Financial Assets

In 2021 other financial assets comprise fund investments and cash deposits at banks with a maturity of less than twelve months at inception of the contracts. In 2020 other financial assets comprise fund investments.

The composition of the other financial assets and the maturities at inception of the deposits were as below.

in EUR thousands	2021	2020
Financial assets measured at FVTPL	141,625	62,422
Maturity less 12 months	60,000	0
Total other financial assets	**201,625**	**62,422**

The fair value of fund investments is determined using the quoted prices in active markets at reporting date which is level one of the fair value hierarchy.

18. Cash and Cash Equivalents

in EUR thousands	2021	2020
Cash-in-hand	2	3
Bank balances	150,861	187,256
Cash and Cash equivalents	**150,863**	**187,259**

Cash and cash equivalents comprise short-term bank deposits with an original maturity of 3 months or less. The carrying amount and fair value are the same.

Bank balances included kEUR 0 given as security (2020: kEUR 0) at December 31, 2021.

19. Shareholders' Equity

Share Capital

in EUR	2021	2020
January 1	112,927,320	112,927,320
Shares issued during the year	364,700	0
Issued and fully paid capital at December 31, including Treasury Shares	113,292,020	112,927,320
Treasury shares	-1,084,105	-1,084,105
Issued and fully paid share capital at December 31 under IFRS	112,207,915	111,843,215

The share capital of the Company consists of no-par value shares and was fully paid-up during 2021 and 2020. Each share represents a portion of the share capital in the amount of EUR 1.00.

Authorized Share Capital

Authorized share capital, including issued capital, amounted to EUR 201,284,934 (2020: EUR 201,284,934).

Additional Paid-In Capital

Additional paid-in capital mainly includes the premium on increases of subscribed capital as well as cumulative expense for share-based payments.

In 2021 364,700 new shares were issued within the scope of AIXTRON stock option plans (2020: nil). No treasury shares were transferred in 2021 as part of the share-based payments scheme (2020: 3,200 shares).

A dividend of kEUR 12,303 was paid to shareholders of AIXTRON SE in May 2021 (2020: kEUR 0).

The Group regards its shareholders' equity as capital for the purpose of managing capital. Changes in Shareholders' equity are shown in the consolidated statement of changes in equity. The Group considers its capital resources to be adequate.

Income and Expenses Recognized in Other Comprehensive Income

Income and expenses recognized in other comprehensive income are shown in the statement of other comprehensive income.

The foreign currency translation adjustment comprises all foreign exchange differences arising from the translation of the financial statements of foreign subsidiaries whose functional currency is not the Euro.

During 2021 an income of kEUR 112 (2020: expense kEUR 21) was recorded from the remeasurement of defined benefit obligations in other comprehensive income.

20. Earnings Per Share

Basic Earnings Per Share

The calculation of the basic earnings per share is based on the weighted-average number of common shares outstanding during the reporting period.

Diluted Earnings Per Share

The calculation of the diluted earnings per share is based on the weighted-average number of outstanding common shares and of common shares with a possible dilutive effect resulting from share options being exercised under the share option plan.

	2021	2020
Earnings per share		
Net profit attributable to the shareholders of AIXTRON SE in kEUR	95,660	34,879
Weighted average number of common shares for the purpose od earnings per share	112,056,282	111,840,146
Basic earnings per share (EUR)	0.85	**0.31**
Earnings per share (diluted)		
Net profit attributable to the shareholders of AIXTRON SE in kEUR	95,660	34,879
Weighted average number of common shares for the purpose od earnings per share	112,056,282	111,840,146
Dilutive effect of share options	48,041	47,015
Weighted average number of common shares for the purpose od earnings per share (diluted)	112,104,323	111,887,161
Diluted earnings per share (EUR)	**0.85**	**0.31**

In 2021 and 2020 no share options existed that would be anti-dilutive.

Amounts recognized as distributions to shareholders during the financial year and the proposed dividend for the year ended December 31, 2021 are set out in the table below:

in EUR thousands	2021	2020
Final dividend payment for the financial year 2020: 11 cents per share (2019: 0 cents per share)	12,303	0
Proposed dividend for the financial year 2021: 30 cents per share (2020: 11 cents per share)	33,662	12,303

21. Employee Benefits

Defined Contribution Plan

The Group grants retirement benefits to qualified employees through various defined contribution pension plans. In 2021 the expense recognized for defined contribution plans amounted to kEUR 1,149 (2020: 1,248).

In addition to the Group's retirement benefit plans, the Group is required to make contributions to state retirement benefit schemes in the countries in which it operates. AIXTRON is required to contribute a specified percentage of payroll costs to the retirement schemes in order to fund the benefits. The only obligation of the Group is to make the required contributions.

Defined Benefit Plan

Provisions for defined benefit pension plans in the amount of kEUR 200 (2020: kEUR 300) are reported under other non-current provisions.

22. Share-Based Payment

The Company has different fixed option plans which reserve shares of common stock for issuance to members of the Executive Board, management, and employees of the Group. The Executive Board remuneration system at AIXTRON SE also consists long-term variable remuneration components (long-term incentive, LTI) that are granted in shares of AIXTRON SE.

The fair value of services received in return for shares or stock options granted is measured by reference to the fair value of the equity instruments or stock options granted.

AIXTRON Stock Option Plans

The fair value of the shares and stock options is determined on the basis of a mathematical model. There were no expenses recognized for the existing programs in 2021 and 2020.

AIXTRON Stock Option Plan 2007

In May 2007, options were authorized to purchase 3,919,374 shares of common stock. 50% of the granted options may be executed after a waiting period of not less than two years, further 25% after three years and the remaining 25% after at least four years. The options expire 10 years after they have been granted. Under the terms of the 2007 plan, options were granted at prices equal to the average closing price over the last 20 trading days on the Frankfurt Stock Exchange before the grant date, plus 20%. There were no shares outstanding under this plan as of December 31, 2021.

AIXTRON Stock Option Plan 2012

In May 2012, options were authorized to purchase shares of common stock. The granted options may be exercised after a waiting period of not less than four years. The options expire 10 years after they have been granted. Under the terms of the 2012 plan, options are granted at prices equal to the average closing price over the last 20 trading days on the Frankfurt Stock Exchange before the grant date, plus 30%. Options to purchase 182,500 common shares were outstanding under this plan as of December 31, 2021.

Summary of Stock Option Programs

AIXTRON-share options	Number of shares 2021	Average exercise price (EUR) 2021	Number of shares 2020	Average exercise price (EUR) 2020
Balance at January 1	601,600	13.15	995,450	17.84
Exercised during the year	364,700	13.14	0	0.00
Forfeited during the year	54,400	13.14	393,850	25.01
Outstanding at December 31	**182,500**	**13.16**	**601,600**	**13.15**
Exercisable at December 31	**182,500**	**13.16**	**601,600**	**13.15**

AIXTRON Stock Options as of December 31, 2021

	Exercise price per share (EUR)	Underlying shares represented by outstanding options	Average option life (in years)
2014	14.01	5,000	3.0
2014	13.14	177,500	3.0
		182,500	

Long-Term Incentive of the Board of Directors (LTI)

The amount of long-term performance-related remuneration (LTI) is geared to the performance of the Group over a 3-year reference period and is granted entirely in AIXTRON shares. Executive Board members may first dispose of these shares following a four-year holding period calculated from the start of the reference period. Before the start of a fiscal year, the Supervisory Board determines the long-term targets for each Executive Board member for the forthcoming reference period. Each Executive Board member receives forfeitable stock awards in the amount of the target LTI as a percentage of the consolidated net income for the year pursuant to the budget adopted for the fiscal year. The number of forfeitable stock awards is calculated based on the average of the closing prices on all stock market trading days in the final quarter of the previous year.

LTI target achievement is determined using the indicators consolidated net income for the year and total shareholder return (TSR), as well as sustainability targets. In this regard, the relative weighting amounts to 50% for consolidated net income for the year, 40% for TSR, and 10% for sustainability targets.

After the expiry of the three-year reference period, the degree of LTI target achievement is determined by the Supervisory Board. Depending on the degree of target achievement, the forfeitable stock awards are then converted into vested stock awards or otherwise lapse. The maximum number of vested stock awards that may be granted in connection with LTI is capped at 250% of the number of forfeitable stock awards granted at the start of the reference period. The shares are transferred to the Executive Board member after the four-year restriction period.

The fair value of equity-settled share-based payment transactions is recognized as an expense over the vesting period and a corresponding adjustment is made to equity. The fair value of the shares granted is measured based on a valuation model taking into account the vesting conditions at which the shares are granted. The TSR ratio is used as a market condition in estimating the fair value at the valuation date. For the other non-market-based vesting conditions, the Group reviews its estimate of the number of equity instruments during the vesting period. Adjustments in the original estimates, if any, are recognized in profit or loss and a corresponding adjustment is made to equity.

The following table shows the main parameters of the valuation model (Monte Carlo simulation) for the long-term variable remuneration of the Executive Board (LTI) for the LTI Tranche 2021 and 2020:

	LTI Tranche 2021		LTI Tranche 2020	
	I	II	I	II
Grant date	09.12.20	21.12.20	26.02.20	08.05.20
Share price at grant date	12.95 €	13.64 €	9.96 €	9.52 €
Risk-free interest rate	-0.82%	-0.79%	-0.72%	-0.80%
Volatility AIXTRON	52.47%	52.70%	52.66%	54.77%
Volatility Peer Group	33.64%	33.73%	33.91%	39.40%
Correlation AIXTRON/Index	0.41	0.41	0.37	0.39
Fair Value TSR	18.81 €	20.77 €	15.07 €	14.18 €
Fair Value Plain-Tranche	12.95 €	13.68 €	9.96 €	9.52 €

In 2021 and 2022 there were two grant dates each, due to a later entry date of an Executive Board member. Assumptions regarding volatility and correlation between the AIXTRON share and the Peer Group were determined based on historical share price developments.

Within the scope of the LTI Tranche 2021 177,930 forfeitable share awards were granted with the weighted average fair value of EUR 15.54 per award on grant date (LTI Tranche 2020: 26,474 forfeitable share awards with the weighted average fair value of EUR 11.82 per award). As of December 31, 2024 or 2023, the forfeitable share awards of LTI Tranche 2021 or 2020 are converted into vested stock awards or partially forfeited.

In 2021, the personnel expenses from share-based payments, all of which were equity settled share-based payments, were kEUR 3,860 (2020: kEUR 1,129). Share-based payments include the expense of long-term incentive of the Executive Board which is paid in shares (see note 31).

23. Provisions

Development and breakdown of provisions:

in EUR thousands	01.01.2021	Exchange rate differences	Usage	Reversal	Addition	31.12.2021	Current	Non-current
Personnel expenses	7,003	201	6,324	179	13,829	14,530	14,362	168
Warranties	7,714	22	5,038	0	6,650	9,348	5,400	3,948
Onerous contracts	46	2	7	0	0	41	41	0
Other	5,404	81	3,780	122	6,290	7,873	7,468	405
Summe	**20,167**	**306**	**15,149**	**301**	**26,769**	**31,792**	**27,271**	**4,521**

Personnel Expenses

These include mainly provisions for holiday pay, payroll, severance payments and other variable element of pay, which are financial liabilities.

Provisions for Onerous Contracts

These include provisions associated with contracts where the unavoidable costs of meeting the contract obligations exceed the economic benefits expected to be received. These mainly relate to supply contracts for materials which are excess to the forecast future requirements.

Warranties

Warranty provisions are the estimated unavoidable costs of providing parts and service to customers during the normal warranty periods.

Other Provisions

Other provisions consist mainly of the estimated cost of services received and also includes pension provisions.

For provisions existing at both December 31, 2021 and December 31, 2020, the economic outflows resulting from the obligations that are provided for are expected to be settled within one year of the respective balance sheet date for current provisions and within two years of the respective balance sheet date, but more than one year, for the main non-current provisions (excluding pension provisions).

24. Trade Payables and Other Current Liabilities

The liabilities consist of the following:

in EUR thousands	2021	2020
Trade payables	**19,585**	**10,846**
Liabilities from grants	3,629	4,819
Short-term lease liabilities	979	734
Payroll taxes and social security contributions	1,070	1,004
VAT and similar taxes	305	204
Other liabilities	450	618
Other current liabilities	**6,433**	**7,379**
Trade payables and other current liabilities	**26,018**	**18,225**

The carrying amount of trade payables and other current liabilities approximates their fair value. Trade payables, grant liabilities, taxes and other liabilities fall due for payment within 90 days of receipt of the relevant goods or services.

25. Financial Instruments

Details of the significant accounting policies and methods, the basis of measurement that are used in preparing the financial statements and the other accounting policies that are relevant to an understanding of the financial statement are disclosed in note 2 to the financial statements.

Financial Risk Management Objectives

The Group seeks to minimize the effects of any risk that may occur from any financial transaction. Key aspects are the exposures to liquidity risk, credit risk, interest rate risk and currency risk arising in the normal course of the Group's business.

The AIXTRON Group's central management coordinates access to domestic and international financial institutions and monitors and manages the financial risks relating to the operations of the Group through internal risk reports which analyze exposure to risk by likelihood and magnitude. These risks cover all aspects of the business, including financial risks; and the risk management system is in accordance with the corporate governance recommendations specified in the German Corporate Governance Code.

Liquidity Risks

Liquidity risk is the risk that the Group is unable to meet its existing or future obligations due to insufficient availability of cash or cash equivalents. Managing liquidity risk is one of the central tasks of AIXTRON SE. In order to be able to ensure the Group's solvency and flexibility at all times cash and cash equivalents are projected on the basis of regular financial and liquidity planning.

As of December 31, 2021 the Group did not have any borrowings (2020: nil). Financial liabilities, all due within one year, of kEUR 26,018 (2020: kEUR 18,225) consisting of trade payables and other liabilities and are shown in note 24, together with an analysis of their maturity. Non-current payables consist of lease liabilities and other payables. Long term lease liabilities of kEUR 3,052 (2020: kEUR 2,245) are shown with an analysis of their maturity in note 27. Other non-current payables of kEUR 244 (2020: kEUR 372) are due after more than one year.

As of December 31, 2021 the Group had kEUR 352,694 (2020: kEUR 309,681) of bank deposits and investments as described in notes 13, 17 and 18.

Credit Risks

Financial assets generally exposed to a credit risk are trade receivables, investments, and bank deposits.

The Group's bank deposits and investments are kept with financial institutions that have a good credit standing. Central management of the Group assesses the counter-party risk of each financial institution dealt with and sets limits to the Group's exposure to those institutions. These credit limits are reviewed from time to time so as to minimize the default risk as far as possible and to ensure that concentrations of risk are managed.

The maximum exposure of the Group to credit risk is the total amount of receivables, financial assets and bank deposits as described in notes 13, 16, 17 and 18.

For contract assets measured at fair value, the maximum amount of the exposure to credit risk is the amount of contract assets measured at fair value as disclosed in note 25. There are no credit derivatives or similar instruments which mitigate the maximum exposure to credit risk and there has been no change during the period or cumulatively in the fair value of such receivables that is attributable to changes in the credit risk.

Market Risks

The Group's activities expose it to the financial risks of changes in foreign currency exchange rates and interest rate risks. Interest rate risks are not material as the Group only receives a minor amount of interest income. The Group does not use derivative financial instruments to manage its exposure to interest rate risk. Cash deposits are made with the Group's bankers at the market rates prevailing at inception of the deposit for the period and currency concerned. The Group's investments are made into funds bases in the European Union and are exposed to changes in the market value of those funds. There has been no change to the Group's exposure to market risk or the manner in which it manages and measures the risk.

Foreign Currency Risk

The Group may enter into a variety of derivative financial instruments to manage its exposure to foreign currency risk, including forward exchange contracts to hedge the exchange rate risk arising on the export of equipment. The main exchange rates giving rise to the risk are those between the US Dollar, GB Pound, Chinese Renminbi and Euro.

The carrying amounts of the Group's foreign currency denominated monetary assets and monetary liabilities at the reporting date are as follows:

	Assets		Liabilities	
in EUR thousands	**2021**	**2020**	**2021**	**2020**
US Dollars	83,157	60,895	46,041	22,340
GB Pounds	10,827	14,708	2,198	4,414
Chinese Renminbi	18,726	13,803	3,666	1,302

Exposures are reviewed on a regular basis and are managed by the Group through sensitivity analysis.

Foreign Currency Sensitivity Analysis

The Group's global operations expose it primarily to foreign exchange risks by the US Dollar, GB Pound and Chinese Renminbi.

The following table details the Group's sensitivity to a 10% change in the value of the Euro against the US Dollar, GB Pound and Chinese Renminbi. A positive number indicates an increase in profit and other equity, a negative number indicates a reduction in profit and other equity.

Increase in value of Euro by 10% in EUR thousands	USD Currency Effect 2021	USD Currency Effect 2020	GBP Currency Effect 2021	GBP Currency Effect 2020	RMB Currency Effect 2021	RMB Currency Effect 2020
Profit or loss	-2,400	-2,634	-188	12	-845	-676
Other comprehensive income	-707	856	-485	844	-496	431

Decrease in value of Euro by 10% in EUR thousands	USD Currency Effect 2021	USD Currency Effect 2020	GBP Currency Effect 2021	GBP Currency Effect 2020	RMB Currency Effect 2021	RMB Currency Effect 2020
Profit or loss	2,400	2,634	188	-12	845	676
Other comprehensive income	707	-856	485	-844	496	-431

The sensitivity analysis represents the foreign exchange risk at the year-end date only. It is calculated by revaluing the Group's financial assets and liabilities, existing at 31 December, denominated in US-Dollars, GB Pounds or Chinese Renminbi by 10%. It does not represent the effect of a 10% change in exchange rates sustained over the whole of the financial year, only the effect of a different rate occurring on the last day of the year.

Fair Values and Contract Assets

Cash and cash equivalents, receivables are stated at amortized cost. Other financial assets in 2021 comprise financial assets measured at FVTPL. Contract assets are outside the scope of IFRS 9.

Trade Receivables / Payables

For trade receivables/payables due within less than one year, measured at amortized cost, the fair value is taken to be the carrying amount.

Financial Assets 2021

in EUR thousands	At amortized cost	At fair value	Total carrying amount and fair value
Cash and cash equivalents	150,863	0	150,863
Other financial assets	0	201,625	201,625
Other non-current financial assets	453	250	703
Trade receivables (excluding contract assets)	77,383	0	77,383
Contract assets included in trade receivables (not in scope of IFRS 9)	0	3,579	3,579
Total	**228,699**	**205,454**	**434,153**

Financial Liabilities 2021

in EUR thousands	At amortized cost	At fair value	Total carrying amount and fair value
Trade payables	19,585	0	19,585
Non-current lease and other liabilities	3,296	0	3,296
Total	**22,881**	**0**	**22,881**

Financial Assets 2020

in EUR thousands	At amortized cost	At fair value	Total carrying amount and fair value
Cash and cash equivalents	187,259	0	187,259
Other financial assets	0	62,422	62,422
Other non-current financial assets	60,497	0	60,497
Trade receivables (excluding contract assets)	38,572	0	38,572
Contract assets included in trade receivables (not in scope of IFRS 9)	0	2,732	2,732
Total	**286,328**	**65,154**	**351,482**

Financial Liabilities 2020

in EUR thousands	At amortized cost	At fair value	Total carrying amount and fair value
Trade payables	10,846	0	10,846
Non-current lease and other liabilities	2,617	0	2,617
Gesamt	**13,463**	**0**	**13,463**

26. Advance Payments – Contract Liabilities

Contract liabilities for advance payments from customers occur when a contract requires the customer to pay a deposit to the Group and the deposit has actually been paid, typically near the commencement of the contract, or if it reflects an unconditional payment claim. Usually, advance payments are up to 50% of the total contract price.

The Group records the liability as the advance payment is received and eliminates the liability at the same time and up to the same amount as it records revenue until the liability is fully extinguished. Changes in contract liabilities for advance payments in the year reflect the changing level of outstanding customer orders.

Revenues of kEUR 40,278 were realized in 2021 from the kEUR 50,824 of contract liabilities for advance payments outstanding at the end of 2020. Revenues of kEUR 45,341 were realized in 2020 from the kEUR 51,051 of contract liabilities for advance payments outstanding at the end of 2019. In 2021 no revenue was recognized from performance obligations that were settled in prior years.

27. Leases

Leases as Lessee

The undiscounted lease liabilities are payable as follows:

in EUR thousands	2021	2020
Not later than one year	1,147	829
Later than one year and not later than five years	2,283	1,595
Later than five years	899	825
	4,329	**3,249**

Note 11 includes the disclosures required by IFRS 16 concerning the depreciation charge for leased assets by underlying class of asset, additions to leased assets and the carrying value of leased assets at the end of the reporting period.

in EUR thousands	2021	2020
Expenses for:		
Short-term and low-value leases	268	249
Payments made in respect of:		
Short-term and low-value leases	268	249
Lease liabilities	964	877
Interest on lease liabilities	107	69
Total cash outflow for leases	**1,339**	**1,195**

The Group has applied paragraph 6 of IFRS 16 when accounting for short-term leases and low-value leases and has expensed these on a straight-line basis. A similar portfolio of short-term leases exists at the reporting date.

The Group leases certain buildings, equipment and vehicles under various leases. Under most of the lease commitments for buildings the Group has options to renew the leasing contracts. The leases typically run for a period between one and ten years. None of the leases include contingent rentals.

28. Restructuring Costs

In the second quarter of 2021, the Group's OLED activities were initially restructured and focused on the Chinese market. In the course of this, the workforce of APEVA Co. in Korea and of APEVA SE in Germany were reduced. In the first half year, costs of kEUR 3,233 were incurred in scope of these activities, mainly for severance payments and other personnel-related expenses.

As customers in this market are also opting for Micro LED as the technological basis for the development of the next generation of displays even faster than originally expected the shareholders of APEVA have decided not to make further investments in APEVA and to wind up the APEVA Group. In course of this development, an additional impairment, and other costs according to the restructuring in the amount kEUR 655 were recognized in the fourth quarter 2021.

Expenses incurred in the following areas:

in EUR thousands	2021	2020
Cost of sales	42	0
General administration expenses	704	0
Research and development cost	3,142	0
Total	**3,888**	**0**

29. Capital Commitments

Purchase commitments in EUR thousands	2021	2020
Capital expenditures	3,305	2,337
Other expenditures	184,875	76,392
Total commitments with suppliers at Dec 31	**188,180**	**78,729**

30. Contingencies

AIXTRON is involved in various legal proceedings or can be exposed to a threat of legal proceedings in the normal course of business. The Executive Board regularly analyses these matters, considering any possibilities of avoiding legal proceedings or of covering potential damages under insurance contracts and has recognized, where required, appropriate provisions. It is not expected that such matters will have a material effect on the Group's net assets, results of operations and financial position.

31. Related Parties

Related parties of the Group are members of the Executive Board and members of the Supervisory Board and their close relatives.

The disclosures of key management personnel compensation are as follows:

in EUR thousands	2021	2020
Executive Board:		
Short-term employee benefits	4,586	1,884
Share-based payments	3,851	1,073
	8,437	**2,957**
Supervisory Board:		
Short-term benefits	470	470
	470	**470**
Total	**8,907**	**3,427**

Share-based payments refer to the fair value of share options at grant date and includes that portion of bonus agreements which is settled in shares.

Individual amounts and further details regarding the remuneration of the members of the Executive Board and Supervisory Board are disclosed in the Remuneration Report.

32. Consolidated Entities

AIXTRON SE controls the following subsidiaries:

Wholly owned subsidiaries	Place of incorporation and operation	Percentage control 31 December 2021	Percentage control 31 December 2020
AIXTRON Ltd.	England & Wales	100%	100%
AIXTRON Korea Co. Ltd.	South Korea	100%	100%
AIXTRON K.K	Japan	100%	100%
AIXTRON China Ltd.	China	100%	100%
AIXTRON Taiwan Co. Ltd.	Taiwan	100%	100%
AIXTRON Inc.	USA	100%	100%
AIXinno Ltd.	England & Wales	100%	100%

Non-wholly owned subsidiaries	Place of incorporation and operation	Percentage control 31 December 2021	Percentage control 31 December 2020
APEVA Holdings Ltd.	England & Wales	87%	87%
APEVA SE	Germany	87%	87%
APEVA Co. Ltd.	South Korea	87%	87%

Proportion of voting rights and ownership interests held by non-controlling interests	Profit (loss) allocated to non-controlling interests 2021 kEUR	Profit (loss) allocated to non-controlling interests 2020 kEUR	Accumulated non-controlling interests 2021 kEUR	Accumulated non-controlling interests 2020 kEUR
APEVA GROUP				
13%	-821	-409	173	992

All companies in the Group are engaged in the supply of equipment to the semiconductor industry or development facilities. Design and manufacture of equipment takes place at the entities in Germany and the UK. Service and distribution take place at all locations.

33. Events After the Reporting Period

There are no events which have occurred after the balance sheet date, of which the directors have knowledge, which would result in a different assessment of the Group's net assets, results of operation and financial position.

34. Auditors' Fees

Fees expensed in the income statement for the services of the Group auditor, Deloitte, are as follows:

in EUR thousands	2021	2020
for audit	542	494
for other confirmation services	101	31
for tax advisory services	17	161
for other services	90	2
	750	**688**

Included in the total amount of fees are fees for the Group auditor Deloitte GmbH Wirtschaftspruefungsgesellschaft, Duesseldorf, in the amount of kEUR 447 for audit (2020: kEUR 399), kEUR 101 for other confirmation services (2020: kEUR 31), kEUR 4 for tax services (2020: kEUR 41) and kEUR 0 for other services (2020: kEUR 2).

The amounts for other confirmation services include fees for audits on EEG (renewable energy law) and KWKG (act on combined heat and power generation) as well as the non-financial report.

35. Employees

Compared to last year, the average number of employees during the current year was as follows:

Employees by Function Period average	2021	2020
Sales	53	53
Research and Development	238	248
Manufacturing and Service	317	299
Administration	83	83
Employees	**691**	**683**
Executive board members	3	2
	694	**685**
Apprentices	15	17
Total employees	**709**	**702**

36. Supervisory Board and Executive Board

Supervisory Board

- **Kim Schindelhauer**
  Chairman of the Supervisory Board since 2002
  Businessman

- **Frits van Hout**
  Vice Chairman of the Supervisory Board since 2019
  Entrepreneur

  Membership of Supervisory Boards and Controlling Bodies:

  - Bambi Belt Holding BV, Eindhoven/Netherlands (Member of the Supervisory Board)
  - Kendrion NV, Amsterdam/Netherlands (Chairman of the Supervisory Board, since April 12, 2021)
  - SmartPhotonics BV, Eindhoven/Netherlands (Member of the Supervisory Board, since May 31, 2021)

- **Prof. Dr. Andreas Biagosch**
  Member of the Supervisory Board since 2013
  Entrepreneur

  Membership of Supervisory Boards and Controlling Bodies:

  - Ashok Leyland Limited, Chennai/India (Non-Executive Director)
  - Wacker Chemie AG, Munich (Member of the Supervisory Board)
  - Hinduja Leyland Finance Limited, Chennai/India (Non-Executive Director, until November 9, 2021)
  - Athos Service GmbH, Munich (Chairman of the Advisory Board)

- **Prof. Dr. Anna Weber**
  Member of the Supervisory Board since 2019
  Professor for Economics esp. External Financial Accounting
  German Public Auditor (Wirtschaftsprueferin), German Tax Advisor (Steuerberaterin)

- **Prof. Dr. Petra Denk**
  Member of the Supervisory Board since 2011
  Professor of Energy Economics

  Membership of Supervisory Boards and Controlling Bodies:

  - Pfisterer Holding AG, Winterbach (Member of the Supervisory Board)
  - BKW AG, Bern/Switzerland (Member of the Advisory Board, since May 7, 2021)

Executive Board

The composition of the Company's Executive Board in 2021 is:

- **Dr. Felix Grawert**
  Aachen, Chairman of the Executive Board and Chief Executive Officer (CEO), member of the Executive Board since 2017

- **Dr. Jochen Linck**
  Aachen, member of the Executive Board and Chief Operating Officer (COO), member of the Executive Board since 2020

- **Dr. Christian Danninger**
  Cologne, member of the Executive Board and Chief Financial Officer (CFO), member of the Executive Board since May 1, 2021

- **Dr. Bernd Schulte**
  Aachen, member of the Executive Board until March 31, 2021

  Membership of supervisory boards and controlling bodies:

  - Suess Microtec SE, Garching (Member of the Supervisory Board since November 6, 2020)

37. Critical Accounting Judgments and Key Sources of Estimation and Uncertainty

The preparation of AIXTRON's Consolidated Financial Statements requires the Group to make certain estimates, judgments, and assumptions that the Group believes are reasonable based upon the information available. These estimates and assumptions affect the reported amounts and related disclosures and are made in order to fairly present the Group's financial position and results of operations. The following accounting policies are significantly impacted by these estimates and judgments that AIXTRON believes are the most critical to aid in fully understanding and evaluating its reported financial results:

Revenue Recognition

Revenue for the supply of most equipment to customers is generally recognized in two stages, partly on delivery and partly on final installation and acceptance (see note 2 (n)). The Group believes, based on past experience, that this method of recognizing revenue fairly states the revenues of the Group. The judgements made by management include an assessment of the point at which control has passed to the customer.

Valuation of Inventories

Inventories are stated at the lower of cost and net realizable value. This requires the Group to make judgments concerning obsolescence of materials. This evaluation requires estimates, including both forecasted product demand and pricing environment, both of which may be susceptible to significant change. The carrying amount of inventories is disclosed in note 15.

As disclosed in notes 3 and 15, during the years 2021 and 2020 the Group incurred expenses of kEUR 2,851 and kEUR 1,918 respectively arising mainly from changes to past assumptions concerning net realizable value of inventories and excess and obsolete inventories. In future periods, write-downs of inventory may be necessary due to (1) reduced demand in the markets in which the Group operates, (2) technological obsolescence due to rapid developments of new products and technological improvements, or (3) changes in economic or other events and conditions that impact the market price for the Group's products. These factors could result in adjustment to the valuation of inventory in future periods, and significantly impact the Group's future operating results.

Income Taxes

At each balance sheet date, the Group assesses whether the realization of future tax benefits is sufficiently probable to recognize deferred tax assets. This assessment requires the exercise of judgement on the part of management with respect to future taxable income. The parent company AIXTRON SE does generally not exceed a planning horizon of twelve months. The recorded amount of total deferred tax assets could be reduced or increased if estimates of projected future taxable income are lowered or increased, or if changes in current tax regulations are enacted that impose restrictions on the timing or extent of the Group's ability to utilize future tax benefits. The carrying amount of deferred tax assets is disclosed in note 14.

Provisions

Provisions are liabilities of uncertain timing or amount. At each balance sheet date, the Group assesses the valuation of the liabilities which have been recorded as provisions and adjusts them if necessary. Because of the uncertain nature of the timing or amounts of provisions, judgement has to be exercised by the Group with respect to their valuation. Actual liabilities may differ from the estimated amounts. Details of provisions are shown in note 23.

Legal proceedings

In the normal course of business, the Group is subject to various legal proceedings and claims. The Company, based upon advice from legal counsel, believes that the matters the Group is aware of are not likely to have a material adverse effect on its financial condition or results of operations. The Group is not aware of any unasserted claims that may have a material adverse effect on its financial condition or results of operation.

COVID-19

Effects of COVID-19 on the business are discussed in the Group Management Report. The effects on the consolidated financial statements of 2021 are immaterial and it is similarly expected that the effects in 2022 will be immaterial.

Herzogenrath, February 23, 2022
AIXTRON SE

Executive Board

Dr. Felix Grawert	**Dr. Christian Danninger**	**Dr. Jochen Linck**

FURTHER INFORMATION

Responsibility Statement by the Executive Board

Responsibility Statement required by Sections 297(2) sentence 4 and 315(1) sentence 5 of the Handelsgesetzbuch (HGB – German Commercial Code) for the Consolidated Financial Statements:

“To the best of our knowledge, and in accordance with the applicable reporting principles, the Consolidated Financial Statements give a true and fair view of the assets, liabilities, financial position and profit or loss of the Group, and the Group Management Report includes a fair review of the development and performance of the business and the position of the Group, together with a description of the material opportunities and risks associated with the expected development of the Group.”

Herzogenrath, February 23, 2022
AIXTRON SE

Executive Board

Dr. Felix Grawert **Dr. Christian Danninger** **Dr. Jochen Linck**

Independent Auditor's Report

To AIXTRON SE, Herzogenrath/Germany

REPORT ON THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS AND OF THE COMBINED MAN-AGEMENT REPORT

Audit Opinions

We have audited the consolidated financial statements of AIXTRON SE, Herzogenrath/Germany, and its subsidiaries (the Group) which comprise the consolidated statement of financial position as at December 31, 2021, the consolidated income statement, the consolidated statement of other comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows for the financial year from January 1 to December 31, 2021, and the notes to the consolidated financial statements, including the presentation of the recognition and measurement policies. In addition, we have audited the combined management report for the parent and the group of AIXTRON SE, Herzogenrath/Germany, for the financial year from January 1 to December 31, 2021. In accordance with the German legal requirements, we have not audited the content of the corporate governance statement pursuant to Sections 289f and 315d German Commercial Code (HGB), including the further reporting on corporate governance included therein, nor the content of the consolidated non-financial report pursuant to Sections 315b and 315c HGB, each of which is referred to in the combined management report.

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

- the accompanying consolidated financial statements comply, in all material respects, with the IFRS as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) HGB and, in compliance with these requirements, give a true and fair view of the assets, liabilities and financial position of the Group as at December 31, 2021 and of its financial performance for the financial year from January 1 to December 31, 2021, and
- the accompanying combined management report as a whole provides an appropriate view of the Group's position. In all material respects, this combined 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 combined management report does not cover the content of the corporate governance statement pursuant to Sections 289f and 315d HGB, including the further reporting on corporate governance included therein, nor the content of the consolidated non-financial report pursuant to Sections 315b and 315c HGB stated above.

Pursuant to Section 322 (3) sentence 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the combined management report.

Basis for the Audit Opinions

We conducted our audit of the consolidated financial statements and of the combined management report in accordance with Section 317 HGB and the EU Audit Regulation (No. 537/2014; referred to subsequently as "EU Audit Regulation") and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (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 Combined 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 combined 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 January 1 to December 31, 2021. 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 the following we present the key audit matters we have determined in the course of our audit:

1. Revenue Recognition for Multiple-element Arrangements Including Cut-off
2. Measurement of Deferred Tax Assets

Our presentation of these key audit matters has been structured as follows:

a) description (including reference to corresponding information in the consolidated financial statements)

b) auditor's response

1. Revenue Recognition for Multiple-element Arrangements Including Cut-off

a) The revenue as stated in the consolidated income statement amounts to kEUR 428,954. A substantial proportion of this revenue comprises the settlement of customer contracts that include multiple performance obligations. These arrangements primarily deal with the customer-specific manufacturing and supply of semiconductor equipment and its installation at the customer's site. Furthermore, in specific cases, the Group and the customer agree on the supply of related spare parts and/or the provision of services such as maintenance services and/or certain rights of return. These services are to be measured separately. As part of the technical acceptance process with regard to the equipment, additional services may be required. These additional services also have to be considered when recognizing revenue. Generally, the contract with the customer provides for a transaction price for the equipment and the remaining elements such as installation, spare parts packages, services and specific rights of return. Consequently, the transaction price needs to be allocated to each performance obligation based on a relative stand-alone selling price basis. Except for certain rights of return that exceed the common periods, the performance obligations are satisfied at a certain point in time and the related revenue is realized. The determination of the time of revenue recognition regarding arrangements comprising multiple performance obligations and the cut-off as part of revenue recognition are subject to the executive directors' judgment and assumptions due to the highly individual customer contracts and complex equipment. As a consequence, we considered this issue to be a key audit matter.

The information of the executive directors on revenue is provided in section 2 "Significant Accounting Polices" in note N "Revenue" as well as in section 3 "Segment Reporting and Revenues" in the notes to the consolidated financial statements.

b) First, we recorded and assessed the major processes from order confirmation until settlement including the audit of the design, implementation and effectiveness of the accounting-related controls regarding revenue recognition. In this context, our audit primarily covered the effectiveness of the controls regarding the allocation of the transaction price to the individual performance obligations, the complete provision of the supply and installation services and the recognition of the supplied equipment and installation services on an accrual basis.

We performed the following audit procedures based on a stratified and random selection of a sample taken from equipment supplies and installation services by means of a representative sampling method:

- equipment supplies: audit of an existent customer contract, evaluation of the allocation of the transaction price on a relative stand-alone selling price basis to the individual supply and service elements by verifying the underlying contract, reviewing the time of revenue recognition pursuant to contract terms, primarily the incoterms based on the acceptance test records and based on the acceptance and supply records of the dispatch company.

- installation services: audit of an existent final acceptance record signed by the customer including the review of estimations made by the executive directors regarding work to be done yet as well as any additional agreements to the contract with the customer as regards additional services to be rendered and review of the related cut-off of revenue.

- assessment of the completeness and appropriateness of the corresponding information provided in the notes to the consolidated financial statements.

2. Measurement of Deferred Tax Assets

a) Total deferred tax assets of kEUR 24,735 (accounting for 3.3% of the Group's total assets) are stated as "Deferred tax assets" in the consolidated statement of financial position. These deferred tax assets were determined based on the Group's tax planning and mainly result from tax loss carry-forwards (kEUR 23,649) and deductible differences between IFRS carrying values and their tax base to be reversed in the following years (kEUR 1,086). The majority of the deferred tax assets (kEUR 20,714) results from the parent company AIXTRON SE, which has comprehensive tax loss carry-forwards. The executive directors are of the opinion that for the parent company a reasonable derivation of an estimation of taxable results beyond a period of twelve months after the reporting date is not possible for a technology company characterized by highly fluctuating demand and volatile results. Accordingly, deferred taxes on tax loss carry-forwards and temporary differences concerning the parent company AIXTRON SE were only recognized insofar as they are expected to be used in 2022. The deferred tax assets concerning the parent company AIXTRON SE are measured using a tax rate of 32.8%, which is the currently applicable income tax rate. The other deferred tax assets result from tax loss carry-forwards and deductible differences concerning the foreign subsidiaries of AIXTRON SE. As they are largely secured by cost-plus agreements with the parent company, which bears the major risks, these deferred tax assets are based on tax planning strategies over a period of three years using the corresponding local tax rates.

The result of the computation of the deferred tax assets depends on whether tax benefits can be realized from tax loss carry-forwards according to estimations and assumptions of the executive directors and, therefore, are subject to uncertainties. Accordingly, we considered the measurement of deferred taxes to be a key audit matter.

Information on deferred taxes is provided by the executive directors of the parent company in note 14 to the consolidated financial statements.

b) As part of our audit, we used the knowledge and audit results gained in previous years. For the purpose of risk assessment, we obtained an understanding of the past adherence to the budget. First, we assessed whether the measurement methods applied are appropriate. General and industry-specific market expectations of the executive directors of AIXTRON SE were compared with external sources.

As part of our examination of the tax matters, we consulted internal tax experts, who were involved in the audit team. They supported us in assessing the installed processes and controls for validating the budget estimations and recognizing tax matters. In addition, with respect to the tax planning, we queried the recognition of the deferred taxes and the explanations of the executive directors. We assessed the recoverability of the deferred tax assets on tax loss carry-forwards on the basis of corporate forecasts and the budget prepared by the executive directors concerning the future taxable profits of AIXTRON SE and its major subsidiaries and reviewed the appropriateness of the basis used for the budget. Furthermore, we obtained an understanding of the reconciliation between the expected tax expense, which was determined by applying the weighted group tax rate, and the recognized tax expense.

Other Information

The executive directors and/or the supervisory board are responsible for the other information. The other information comprises

- the report of the supervisory board,
- the corporate governance statement pursuant to Sections 289f and 315d HGB, including the further reporting on corporate governance included therein, referred to in section "Legal Disclosures" of the combined management report,
- the consolidated non-financial report pursuant to Sections 315b and 315c HGB referred to in section "Legal Disclosures" of the combined management report,
- the executive directors' confirmation regarding the consolidated financial statements and the combined management report pursuant to Section 297 (2) sentence 4 and Section 315 (1) sentence 5 HGB, and
- all other parts of the annual report,but not the consolidated financial statements, not the audited content of the combined management report and not our auditor's report thereon.

The supervisory board is responsible for the report of the supervisory board. The executive directors and the supervisory board are responsible for the statement according to Section 161 German Stock Corporation Act (AktG) concerning the German Corporate Governance Code including the further reporting on corporate governance, which is part of the corporate governance statement, and which is referred to in the combined management report. Otherwise the executive directors are responsible for the other information.

Our audit opinions on the consolidated financial statements and on the combined 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 identified above and, in doing so, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the audited content of the combined management report or 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 Combined Management Report

The executive directors are responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRS as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) HGB, and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position and financial performance of the Group. In addition, 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 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 combined 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 combined 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 combined 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 combined management report.

Auditor’s Responsibilities for the Audit of the Consolidated Financial Statements and of the Combined 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 combined 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 combined management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Section 317 HGB and 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 combined 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 combined 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 relevant to the audit of the combined 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 combined 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 IFRS as adopted by the EU and with the additional requirements of German commercial law pursuant to Section 315e (1) HGB.
- obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express audit opinions on the consolidated financial statements and on the combined 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 combined 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 combined 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 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, the related safeguards.

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 for the current period and are therefore the key audit matters. We describe these matters in the auditor's report unless law or regulation precludes public disclosure about the matter.

OTHER LEGAL AND REGULATORY REQUIREMENTS

Report on the Audit of the Electronic Reproductions of the Consolidated Financial Statements and of the Combined Management Report Prepared for Publication Pursuant to Section 317 (3a) HGB

Audit Opinion

We have performed an audit in accordance with Section 317 (3a) HGB to obtain reasonable assurance whether the electronic reproductions of the consolidated financial statements and of the combined management report (hereinafter referred to as "ESEF documents") prepared for publication, contained in the provided file, which has the SHA-256 value 8A92B40D93B1C77570DCC62AD1B3F2E68CBB059EDCCB71E9DE08C9F30C0C7195, meet, in all material respects, the requirements for the electronic reporting format pursuant to Section 328 (1) HGB ("ESEF format"). In accordance with the German legal requirements, this audit only covers the conversion of the information contained in the consolidated financial statements and the combined management report into the ESEF format, and therefore covers neither the information contained in these electronic reproductions nor any other information contained in the file identified above.

In our opinion, the electronic reproductions of the consolidated financial statements and of the combined management report prepared for publication contained in the provided file identified above meet, in all material respects, the requirements for the electronic reporting format pursuant to Section 328 (1) HGB. Beyond this audit opinion and our audit opinions on the accompanying consolidated financial statements and on the accompanying combined management report for the financial year from January 1 to December 31, 2021 contained in the "Report on the Audit of the Consolidated Financial Statements and of the Combined Management Report" above, we do not express any assurance opinion on the information contained within these electronic reproductions or on any other information contained in the file identified above.

Basis for the Audit Opinion

We conducted our audit of the electronic reproductions of the consolidated financial statements and of the com-bined management report contained in the provided file identified above in accordance with Section 317 (3a) HGB and on the basis of the IDW Auditing Standard: Audit of the Electronic Reproductions of Financial Statements and Management Reports Prepared for Publication Purposes Pursuant to Section 317 (3a) HGB (IDW AuS 410 (10.2021)). Our responsibilities in this context are further described in the "Group Auditor's Responsibilities for the Audit of the ESEF Documents" section. Our audit firm has applied the IDW Standard on Quality Manage-ment: Requirements for Quality Management in the Audit Firm (IDW QS 1).

Responsibilities of the Executive Directors and the Supervisory Board for the ESEF Documents

The executive directors of the parent are responsible for the preparation of the ESEF documents based on the electronic files of the consolidated financial statements and of the combined management report according to Section 328 (1) sentence 4 no. 1 HGB and for the tagging of the consolidated financial statements according to Section 328 (1) sentence 4 no. 2 HGB.

In addition, the executive directors of the parent are responsible for such internal controls that they have considered necessary to enable the preparation of ESEF documents that are free from material intentional or unintentional non-compliance with the requirements for the electronic reporting format pursuant to Section 328 (1) HGB.

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 Audit of the ESEF Documents

Our objective is to obtain reasonable assurance about whether the ESEF documents are free from material intentional or unintentional non-compliance with the requirements of Section 328 (1) HGB. We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- identify and assess the risks of material intentional or unintentional non-compliance with the requirements of Section 328 (1) HGB, 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 opinion.
- obtain an understanding of internal control relevant to the audit on the ESEF documents in order to design audit 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 provided file containing the ESEF documents meets the requirements of the Delegated Regulation (EU) 2019/815, in the version in force at the balance sheet date, on the technical specification for this electronic file.
- evaluate whether the ESEF documents enable a XHTML reproduction with content equivalent to the audited consolidated financial statements and to the audited combined 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 balance sheet date, enables an appropriate and complete machine-readable XBRL copy of the XHTML reproduction.

Further Information pursuant to Article 10 of the EU Audit Regulation

We were elected as Group auditor by the annual general meeting on May 19, 2021. We were engaged by the supervisory board on October 20, 2021. We have been the group auditor of AIXTRON SE, Herzogenrath/Germany, without interruption since the financial year 1996.

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).

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 combined management report as well as with the audited ESEF documents. The consolidated financial statements and the combined management report converted into the ESEF format – including the versions to be published in the Federal Gazette – are merely electronic reproductions of the audited consolidated financial statements and the audited combined management report and do not take their place. In particular, the ESEF report and our audit opinion contained therein are to be used solely together with the audited ESEF documents made available in electronic form.

GERMAN PUBLIC AUDITOR RESPONSIBLE FOR THE ENGAGEMENT

The German Public Auditor responsible for the engagement is André Bedenbecker.

Düsseldorf/Germany, February 23, 2022
Deloitte GmbH
Wirtschaftsprüfungsgesellschaft

André Bedenbecker	Dr. Peter Dittmar
Wirtschaftsprüfer	Wirtschaftsprüfer
(German Public Auditor)	(German Public Auditor)

Financial Calendar

May 05, 2022	Publication of the results for the 1st quarter of 2022
May 25, 2022	Annual General Meeting 2022, virtual
July 28, 2022	Publication of the results for the 1st half of 2022
October 27, 2022	Publication of the results for the 3rd quarter of 2022

Imprint

Publisher: AIXTRON-Gruppe, Herzogenrath, Germany
Editor: Investor Relations & Corporate Communications, AIXTRON-Group, Germany
Auditor: Deloitte GmbH, Wirtschaftsprüfungsgesellschaft, Düsseldorf, Germany
Concept and Design: EQS Group AG, München, Germany

Forward-Looking Statements

This document may contain forward-looking statements regarding the business, results of operations, financial condition and earnings outlook of AIXTRON. These statements may be identified by words such as “may”, “will”, “expect”, “anticipate”, “contemplate”, “intend”, “plan”, “believe”, “continue” and “estimate” and variations of such words or similar expressions. These forward-looking statements are based on the current assessments, expectations and assumptions of the executive board of AIXTRON, of which many are beyond control of AIXTRON, based on information available at the date hereof and subject to risks and uncertainties. You should not place undue reliance on these forward-looking statements. Should these risks or uncertainties materialize or should underlying expectations not occur or assumptions prove incorrect, actual results, performance or achievements of AIXTRON may materially vary from those described explicitly or implicitly in the relevant forward-looking statement. This could result from a variety of factors, such as those discussed by AIXTRON in public reports and statements, including but not limited those reported in the chapter “Risk Report”. AIXTRON undertakes no obligation to revise or update any forward-looking statements as a result of new information, future events or otherwise, unless expressly required to do so by law.

This document is an English language translation of a document in German language. In case of discrepancies, the German language document shall prevail and shall be the valid version.

AIXTRON

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As a contribution to environmental protection, AIXTRON does not routinely print or mail annual reports. This Annual Report is available on the AIXTRON website under https://www.aixtron.com/de/investoren/publikationen at any time.

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