

# Group Management Report

## Group Management Report as of December 31, 2016

This Management Report relates to the Consolidated Financial Statements of AIXTRON SE including the following subsidiaries (collectively referred to as "AIXTRON", "the AIXTRON Group", "the Group" or "the Company"): AIXTRON, Inc., Sunnyvale, California (USA); AIXTRON Ltd., Cambridge (United Kingdom); AIXTRON Korea Co. Ltd., Hwasung (South Korea); AIXTRON China Ltd., Shanghai (PR of China); AIXTRON KK, Tokyo (Japan) and AIXTRON Taiwan Co. Ltd., Hsinchu (Taiwan).

The Consolidated Financial Statements of the Company have been prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the EU. All financial information contained in this Management Report, including comparable prior year numbers, is 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.

## 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 our current assessments, expectations and assumptions, of which many are beyond control of AIXTRON, and are 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 actual customer orders received by AIXTRON, the level of demand for deposition technology in the market, the timing of final acceptance of products by customers, the condition of financial markets and access to financing for AIXTRON, general conditions in the market for deposition plants and macroeconomic conditions, cancellations, rescheduling or delays in product shipments, production capacity constraints, extended sales and qualification cycles, difficulties in the production process, the general development in the semi-conductor industry, increased competition, fluctuations in exchange rates, availability of public funding, fluctuations and/or changes in interest rates, delays in developing and marketing new products, a deterioration of the general economic situation and any other factors discussed in any reports or other announcements, in particular in the chapter Risks in the Annual Report, filed by AIXTRON. Any forward-looking statements contained in this document are based on current expectations and projections of the executive board based on information available the date hereof. 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.

Our registered trademarks: AIXACT<sup>®</sup>, AIXTRON<sup>®</sup>, Atomic Level SolutionS<sup>®</sup>, Close Coupled Showerhead<sup>®</sup>, CRIUS<sup>®</sup>, Gas Foil Rotation<sup>®</sup>, Optacap<sup>™</sup>, OVPD<sup>®</sup>, Planetary Reactor<sup>®</sup>, PVPD<sup>®</sup>, TriJet<sup>®</sup>

## 1. Fundamental Information about the Group

### 1.1. Organizational Structure

The table below shows a list of the AIXTRON subsidiaries as of December 31, 2016:

Name	Jurisdiction of Incorporation	Ownership Interest in %
AIXTRON Ltd.	England & Wales	100
AIXTRON Korea Co. Ltd.	South Korea	100
AIXTRON KK	Japan	100
AIXTRON China Ltd.	China	100
AIXTRON Taiwan Co. Ltd.	Taiwan	100
AIXTRON, Inc.	USA	100
AIXTRON AB (in liquidation)	Sweden	100

### 1.2. Management and Control

As of December 31, 2016, AIXTRON's Executive Board (Management) consisted of the following two individuals:

Name	Position	First Appointment	End of Term
Martin Goetzeler	Chairman, President and Chief Executive Officer	March 1, 2013	February 28, 2017
Dr. Bernd Schulte	Executive Vice President and Chief Operating Officer	April 1, 2002	March 31, 2018

As of December 31, 2016, AIXTRON's Supervisory Board consisted of the following six individuals:

Name	Position	Member since	End of Term
Kim Schindelbauer <sup>1)2)3)4)5)</sup>	Chairman of the Supervisory Board	2002	AGM 2019
Prof. Dr. Wolfgang Blättchen <sup>1)4)</sup>	Deputy Chairman of the Supervisory Board, Chairman of the Audit Committee, Independent Financial Expert <sup>6)</sup>	1998	AGM 2019
Dr. Andreas Biagosch <sup>2)</sup>		2013	AGM 2021
Prof. Dr. Petra Denk <sup>2)3)</sup>	Chair of the Technology Committee	2011	AGM 2021
Dr. Martin Komischke		2013	AGM 2021
Prof. Dr. Rüdiger von Rosen <sup>1)3)</sup>	Chairman of the Nomination Committee	2002	AGM 2017

1) Member of the Audit Committee

2) Member of the Technology Committee

3) Member of the Nomination Committee

4) Member of the Capital Market Committee

5) Former AIXTRON Executive Board Member

6) Since 2005

On January 20, 2017, AIXTRON announced that Martin Goetzeler will leave the Company effective February 28, 2017. AIXTRON Supervisory Board Chairman Kim Schindelbauer will become interim CEO and will take over Mr. Goetzeler's tasks effective March 1, 2017. Professor Dr. Wolfgang Blättchen, current deputy chairman of the Supervisory Board, will take over as chair of the Supervisory Board during Mr. Schindelbauer's work as CEO of the company.

Information to the collaboration between Supervisory and Executive Boards of AIXTRON SE as well as to the management procedures and corporate governance are explained in the Corporate Governance Report which is available on the AIXTRON website under [www.aixtron.com/en/investors/corporate-governance/](http://www.aixtron.com/en/investors/corporate-governance/).

### 1.3. Locations

The Company has its registered office in Herzogenrath, Germany, and had a total of 13 facilities worldwide owned or rented as of December 31, 2016:

Facility location	Use	Approx. size (m <sup>2</sup> )	Lease expiry
Herzogenrath, Germany (owned)	Manufacturing, sublease	12,457	-
Herzogenrath, Germany (owned)	Headquarters, R&D, Manufacturing, Engineering	16,000	-
Aachen, Germany (leased)	R&D	200	02/28/2017
Cambridge, UK (leased)	Manufacturing, Engineering, R&D	2,180	09/13/2019
Cambridge, UK (leased)	Service, Engineering	696	06/27/2020
Sunnyvale, CA, USA (leased)	Manufacturing, Sales, Service, Engineering, R&D	9,338	10/31/2017
Hwasung, South Korea (leased)	Sales, Service	1,151	08/09/2020
PyongTak, South Korea (leased)	Service	98	11/30/2018
Shanghai, China (leased)	Sales, Service	594	08/31/2018
Suzhou, China (leased)	Application Laboratory	537	12/31/2017
Hsinchu, Taiwan (leased)	Sales, Service	988	12/31/2017
Tainan, Taiwan (leased)	Service	109	05/27/2017
Tokyo, Japan (leased)	Sales, Service	364	09/30/2018

### 1.4. Business Model

AIXTRON is a leading provider of deposition equipment to the semiconductor industry. The Company's technology solutions are used by a diverse range of customers worldwide to build advanced components for electronic and optoelectronic applications based on compound, silicon or organic semiconductor materials. These include LED applications, display technologies, data storage, data transmission, energy management, storage and conversion, communication, signaling and lighting, as well as a range of other leading-edge applications.

AIXTRON's business activities include developing, producing and installing equipment for the deposition of semiconductor and other complex materials, process engineering, consulting and training, including ongoing customer support and after-sales service. AIXTRON also offers a comprehensive range of peripheral equipment and services.

AIXTRON supplies its customers with both production-scale material deposition systems and small scale systems for Research & Development (R&D) or small scale production.

Demand for AIXTRON's products is driven by increased processing speed, improved efficiency, energy storage and energy efficiency requirements and the necessity to reduce the cost of ownership for current and emerging microelectronic and optoelectronic components. The ability of AIXTRON's products to precisely deposit thin material films and the ability to control critical surface dimensions in these components, enables manufacturers to improve performance, yield and quality in the fabrication process of advanced microelectronic and optoelectronic devices.

Environmental protection and the responsible use of resources are an essential part of AIXTRON's business strategy. The Company's engineers work on improving AIXTRON's systems continuously, both in terms of resource conservation and environmental-friendly design and function.

Since 2014, the energy management system of AIXTRON SE has been certified according to ISO 50001. Also since 2014 the environmental management system at AIXTRON, Inc. has been certified according to ISO 14001. Both systems contribute to the efficient use of energy and the careful use of resources.

Please refer to chapter "Risk Report" for potential factors that could adversely affect the Company's business activities, model and strategy going forward.

### 1.5. Technology and Products

AIXTRON's product range includes customer-specific systems capable of depositing material films on a diverse range of different substrate sizes and materials.

The deposition technologies for opto and power electronics include Metal-Organic Chemical Vapor Deposition ("MOCVD") for the deposition of compound materials to produce for instance LEDs, power electronics or other optoelectronic components.

For thin film deposition technologies for organic electronics applications including Organic Light Emitting Diodes (OLED), AIXTRON offers Polymer Vapor Phase Deposition (PVPD) and Organic Vapor Phase Deposition (OVPD). For thin film encapsulation, AIXTRON offers a Plasma Enhanced Chemical Vapor Phase Deposition (PECVD) technology. PECVD is also being employed for the deposition of complex Carbon Nanostructures (Carbon Nanotubes, Nanowires or Graphene).

For logic and memory applications, AIXTRON systems are capable of depositing material films on wafers of up to 300mm in diameter for the production of memory chips, by employing technologies such as: Chemical Vapor Deposition (CVD) and Atomic Layer Deposition (ALD). Additionally, MOCVD technology is applied to deposit compound materials for the development of future logic devices.

The following table summarizes the products and technologies AIXTRON offers to its customers for use in specific applications and devices:

Technologies	Technologies for opto & power electronics applications	Technologies for organic and carbon nano applications	Technologies for logic & memory applications
<b>Deposition Technologies</b>	MOCVD	OVPD®	CVD
		PVPD®	ALD
		OPTACAP™ PECVD	MOCVD
		CVD/PECVD	
<b>Products</b>	Planetary Reactor® AIX G5+C AIX G5 WW AIX 2800G4-TM	OVPD® R&D and Production Systems	Lynx-iXP CVD
	Close Coupled Showerhead® AIX R6 CCS FT R&D	PRODOS PVPD® R&D and Production Systems	QXP-8300 ALD Metal QXP-8300 ALD Oxide
		OPTACAP™ R&D and Production Systems	EXP MOCVD
		Nano CVD Reactors BM Series	CRIUS® R MOCVD
<b>Potential Applications/Devices</b>	LEDs	OLEDs for displays	CVD WSi Gate stacks for 2D and 3D NAND
	Optoelectronics (photo diodes, lasers, modulators for telecom/datacom)	OLEDs for solid state lighting	DRAM Gate and Capacitor Metal Nitride, DRAM Capacitor high k Dielectric
	Laser devices for consumer electronics (CDs, DVDs)	Organic transparent thin film solar cells	2D and 3D NAND high k IPD (Inter Poly Dielectric) and Blocking Oxide
	High-Frequency devices (such as Hetero Bipolar Transistors and High Electron Mobility Transistors) for wireless datacom	Electronic semiconductor structures, e.g. for flexible displays	ReRAM and PCRAM Material and Electrode
	Silicon Carbide (SiC) based High Power Devices	Functional polymer layers	Logic and MIM high k Gate stack and Metal
	Gallium Nitride (GaN) based Power Devices	Dielectric or passivating polymer layers	III-V High Mobility Device for Logic Devices
	Solar cells	Carbon Nanostructures for electronic, energy storage, display & heat sink applications	III-V based Nanowire, TFET and Optical Interconnect
		Graphene structures for electronic applications	

AIXTRON is constantly working on the improvement of existing technologies and products. In the course of the last three years, AIXTRON has introduced several new system generations and technologies, such as the automated AIX G5+C for opto & power electronics applications.

## 1.6. Research and Development

In addition to the state-of-the-art R&D center at its headquarters in Herzogenrath, AIXTRON also operates R&D laboratories in Aachen (Germany), in Cambridge (United Kingdom) and in Sunnyvale (United States). 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.

AIXTRON's R&D activities in 2016 included development programs for new products as well as continual improvement programs for AIXTRON's existing products. Design-to-Cost-activities have been implemented for numerous R&D projects in order to reduce material costs on a continuous basis e.g. by improving the design of externally procured components. AIXTRON is also working on customer-specific development projects and often does research within the framework of publicly funded projects.

The Company'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 not only further pursue the Company's leading technology position in MOCVD equipment for applications such as specialty-LEDs and for the production of wide band gap materials for Power Electronics or next generation logic & memory applications. AIXTRON also targets to penetrate growth areas in the field of Organic Semiconductors. The Company's R&D activities in fiscal year 2016 were focused on the improvement of existing tools and the development work for next generation MOCVD technologies. These expenditures are monitored very closely. The Company's R&D program in 2016 comprised a team of an average of 252 highly skilled R&D employees (2015: 265; 2014: 285).

For more information regarding R&D expenses from 2014 through 2016, refer to "Development of Results" in this report.

The following provides specific examples of AIXTRON's research and development activities in fiscal year 2016:

Recent examples of R&D activities are the "PeroBOOST" project investigates the development of solar cells from perovskites and the "HEA2D" project to investigate the production, qualities, and applications of 2D nanomaterials. In a three-year "PeroBOOST" project, AIXTRON collaborates with a consortium of research institutions with aims to develop the basis for innovative and efficient solar cells utilizing the recently discovered superb properties of organo perovskite materials. In addition to being expected to involve lower costs, this technology also opens up a variety of novel future applications due to its manufacturability on flexible substrates. The joint project HEA2D with five partners is now researching various deposition processes for 2D materials, processes for transfer onto plastic foils, and mass integration into plastics components. When integrated into mass production processes, 2D materials have the potential to create integrated and systematic product and production solutions that are sustainable in social, economic, and ecological terms. One focus of AIXTRON's subproject involves researching processes and systems technology for the deposition of optically active 2D semiconductor materials such as molybdenum sulfide or graphene.

## 1.7. Patents

AIXTRON aims to secure its technology by patenting and protecting inventions, provided it is strategically expedient and possible for the Company to do so. As of December 31, 2016, the Company had 207 patent families available (December 31, 2015: 189 patent families). For 20 patent families, patent protection was applied for within fiscal year 2016. Patent protection for inventions is usually applied for in those sales markets relevant for AIXTRON, specifically in Europe, China, Japan, South Korea, Taiwan and the United States. Patents are maintained and renewed annually and will expire between 2017 and 2036. AIXTRON pursues a continuous assessment of its intellectual property.

AIXTRON also has exclusive and non-exclusive licenses to patents owned by others covering certain AIXTRON's products.

AIXTRON is the licensee of certain patents owned by Centre National de la Recherche Scientifique and Universal Display Corporation which are important to the Company's operations in the fields of complex material deposition. AIXTRON sells certain reactor technologies under the terms of those licenses, which apply to the principles of delivering precursor material into a vacuum vapor deposition chamber.

## 1.8. Manufacturing and Procurement

The AIXTRON Manufacturing operation is involved in the final assembly stage of production, including equipment configuration and tuning as well as the final inspection. The Company purchases all of the components and most of the assemblies required to manufacture the equipment from third-party suppliers and contractors. AIXTRON's contractors and suppliers are carefully selected and qualified to be able to source, supply and/or partially assemble and test individual equipment parts and sub-assemblies. For strategic reasons, there are typically several suppliers for each AIXTRON equipment component/assembly. However, AIXTRON single sources some key components for its systems and is therefore dependent on contracts with the specific supplier of such components. AIXTRON's own staff manages the whole manufacturing process and in conjunction with external contractors executes the final manufacturing and testing steps.

All AIXTRON manufacturing facilities have an ISO 9001 certified process oriented quality management system. During 2016, the certification was confirmed at AIXTRON SE following a successful certification audit without any deviations. During 2016, external auditors also confirmed the certification at AIXTRON, Ltd as well as at AIXTRON, Inc. Since 2014, the energy management system of AIXTRON SE has been certified according to ISO 50001. Also since 2014 the environmental management system at AIXTRON, Inc. has been certified according to ISO 14001. Both systems contribute to the efficient use of energy and the careful use of resources.

The Company complies with national and international standards and procedures for the equipment industry that are applicable to AIXTRON products.

The "CE" marking confirms the conformity of AIXTRON products with the applicable European directives and standards. Moreover, relevant US American standards for admission of AIXTRON products to the US market and the recommended requirements of the SEMI organization are also complied with. When developing new AIXTRON products, among other things, the European Directive RoHS "Restriction of Hazardous Substances" is strictly adhered to. The certifications from independent institutions, such as "TÜV" and "ETL" also confirm compliance of AIXTRON's products with national and international requirements and specifications.

AIXTRON commits itself and its suppliers to ethical and moral standards for the purchase and usage of conflict minerals (gold, tantalum, tin and tungsten). AIXTRON is continuously striving for transparency regarding the origin of these minerals.

## 1.9. Sales and Service

The AIXTRON Group markets and sells its products worldwide, principally through its own direct sales organization, but also through appointed dealers and sales representatives.

AIXTRON's own Sales and Service Organization provides a full range of customer services, from the initial support of the customized development of an AIXTRON system, through to the final installation and the ongoing customer training as well as the operational support of its systems (after-sales service).

Through the deployment of specialized key account managers supporting AIXTRON customers with the target to improve their competitiveness, customer relationships were enhanced.

## 1.10 Employees

AIXTRON's success very much depends on the achievements and motivation of the Company's staff. The employees are recruited on the basis of professional and personal qualifications and experience. Apart from the direct advertising of job opportunities to attract new employees, AIXTRON regularly participates in job fairs and other career events, has local press coverage, and enjoys close collaborative relationships with universities worldwide, including the RWTH Aachen University and the University of Cambridge.

As a global Company with an international corporate culture, AIXTRON places great value on diversity and sees it also as a competitive advantage. The overall aim is to create a productive work environment, to prevent social discrimination of any kind, and to cultivate equal opportunities.

As part of its innovation management process, AIXTRON has an employee suggestion scheme to encourage all employees to submit their ideas to improve the Company, for instance with ideas to improve processes or products or to, save cost, etc. In 2016, a total of 97 ideas were accepted/implemented.

Management and leadership quality of an organization also have great impact on the success of a company. AIXTRON promotes these qualities within a specific leadership program, coaching members of the management team in management and team building techniques.

In 2016, the total number of employees decreased by 6%, from 748 employees at the end of 2015 (2014: 789) to 705 at December 31, 2016. Manufacturing & Service as well as R&D positions still comprise the largest group of permanent employees.

Employees by Function	2016		2015		2014		2016-2015	
	Dec-31	%	Dec-31	%	Dec-31	%	abs.	%
Sales	58	8	62	8	65	8	-4	-6
Research & Development	250	35	257	34	292	37	-7	-3
Manufacturing & Service	301	43	323	44	322	41	-22	-7
Administration	96	14	106	14	110	14	-10	-9
<b>Total</b>	<b>705</b>	<b>100</b>	<b>748</b>	<b>100</b>	<b>789</b>	<b>100</b>	<b>-43</b>	<b>-6</b>

As of December 31, 2016, the majority of AIXTRON's worldwide permanent employees were, as in previous years, based in Europe.

Employees by Region	2016		2015		2014		2016-2015	
	Dec-31	%	Dec-31	%	Dec-31	%	abs.	%
Asia	116	16	138	18	154	20	-22	-16
Europe	455	65	475	64	521	66	-20	-4
USA	134	19	135	18	114	14	-1	-1
<b>Total</b>	<b>705</b>	<b>100</b>	<b>748</b>	<b>100</b>	<b>789</b>	<b>100</b>	<b>-43</b>	<b>-6</b>

## 1.11. Customers and Geographic Regions

Among other areas of activity, AIXTRON's semiconductor device customers are engaged in the manufacturing of LEDs, lasers, wireless devices, power electronics, other optoelectronic devices, as well as logic and memory chips. Some of these customers are vertically integrated device manufacturers who serve the entire value chain down to the end consumer. Others are independent component suppliers who deliver chips and components produced 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. Most of the world's leading electronic device manufacturers produce in Asia and consequently, the majority of AIXTRON sales continue to be delivered into this region.

See also "Development of Revenues" for a breakdown of revenues by technology and region.

## 1.12. Competitive Positioning

AIXTRON's main competitor in MOCVD applications remains Veeco Instruments Inc. (USA) (Veeco). AIXTRON also competes with a number of Asian manufacturers including Taiyo Nippon Sanso (Japan). Additional companies continue to attempt to qualify their own MOCVD tools with customers. For example, Jusung Engineering Co. Ltd. (South Korea) or Nuflare Technology Inc. (Japan) are known to have been active in the development of in-house equipment solutions for the production of LEDs. Certain Chinese companies, such as Advanced Micro-Fabrication Equipment Inc. or Tang Optoelectronics Equipment (Shanghai) Corporation Limited are working on the qualification of MOCVD equipment, supported by respective government initiatives.

Based on the latest published market share research by Gartner Dataquest (Forecast: Semiconductor Manufacturing Equipment, Worldwide, April 2016), it was estimated that the share of the worldwide MOCVD equipment market (estimated 2015 total market value: USD 336 million) held by AIXTRON in 2015 was around 37%. Particularly due to stronger demand from opto- and power electronic applications, the market share is expected to increase again significantly in 2016. In the same report, the Company's strongest competitor in terms of sales, Veeco Instruments Inc., had an estimated market share of approximately 59%. Viewed in the mid- to long-term, AIXTRON continues to target retaining a market leading position in the global MOCVD market.

For CVD-, MOCVD- and ALD-technologies for Silicon applications, AIXTRON competes with a variety of other equipment companies, including LAM Research, Inc. (USA), Applied Materials, Inc. (USA), Tokyo Electron Ltd. (Japan), ASM International N.V. (Netherlands), IPS Technology (South Korea), Jusung Engineering Co. Ltd. (South Korea), and Hitachi Kokusai Electric Co. Inc. (Japan). With the Company's currently available silicon semiconductor manufacturing technologies and thin film processes, AIXTRON is potentially well positioned to offer advanced films for 18nm node and below for Memory and Logic Integrated Circuits (ICs). AIXTRON technologies enable extremely high precision in depositing very thin material layers and facilitate the consistent coating of complex three-dimensional microelectronic device structures. Moreover, they offer new material deposition possibilities for next generation semiconductor devices, and, in AIXTRON's opinion, present high development potential for the future.

However, as AIXTRON only addresses a specific niche, market share of the total Silicon Semiconductor market is not considered meaningful at this point in time.

For emerging Organic Semiconductor applications, AIXTRON competes with established manufacturers such as Ulvac, Inc. (Japan), Tokki Corporation (Japan), SNU Precision (South Korea), Sunic System (South Korea) and a number of other smaller companies. While these competitors use the vacuum thermal evaporation (VTE) or polymer technologies to produce OLEDs, AIXTRON offers OLED manufacturers its own highly innovative OVPD® and PVPD® large area deposition technologies. In AIXTRON's opinion, due to a perceived superior process technology enabling a reduction of OLED manufacturing costs, these technologies have the potential to compete successfully with VTE and polymer technologies, especially in the field of large area displays. AIXTRON is positioning itself as an alternative deposition system supplier for next generation OLEDs and large area deposition applications such as displays, future lighting, solar cells, and other electronic OLED applications.

For thin film encapsulation applications, AIXTRON's PECVD technology competes with manufacturers such as Ulvac, Inc. (Japan), SNU Precision (South Korea), Applied Materials Inc. (USA) and a number of other smaller companies applying PECVD or ALD technology.

As AIXTRON's organic material deposition and encapsulation technologies as well as most customer applications are still in the market entry phase, Organic Semiconductor market share information is considered not meaningful at this point in time.

### **1.13. Financial and Non-Financial Performance Indicators**

The Executive Board has implemented dedicated control systems and procedures to manage, monitor, analyze, and document Company risks and opportunities, including a key performance indicator system addressing relevant product groups, with a primary focus on the "Market", "Finance" and "Technology Development" control areas.

In the "Market" control area, using third party reports and direct customer dialog, AIXTRON pursues a customer- and market-led product development strategy through the careful examination of market trends and customer requirements. The objective of this strategy is to ensure the timely market availability of new and appropriately competitive product generations in line with customer requirements.

In the "Finance" control area, the Executive Board uses a range of internal and external financial and non-financial performance indicators with particular focus on: order intake, revenues, margin contributions, EBIT, EBITDA and free cash flow. The objective of these controls is to ensure that profitable revenue growth is matched with cost and asset efficiency to achieve sustainable value generation.

In the "Technology Development" control area, the Executive Board again uses a range of performance indicators to evaluate the progress of key research and development projects. The Management regularly reviews compliance with project plans, pre-defined targets and quality gates, such as timelines, quality, cost and margin targets. Following the release of new products for example, the Management monitors closely the development of the respective revenues and related returns. The objective of this review process is to ensure that ongoing technological developments retain not only the necessary level of technological standards but also commercial competitiveness throughout the life of the product.

### **1.14. Government Regulation**

Due to the nature of AIXTRON's products, the shipment of some products to customers in certain countries requires the Company to obtain an export license from statutory authorities in Germany, the UK and the US, including, for example, the Bundesamt für Wirtschaft und Ausfuhrkontrolle, BAFA in Germany, the Department for International Trade in the UK as well as the Department of State and the Department of Commerce in the US.

Research and development activities, as well as the manufacturing and demonstration of the Company's products involve the use of potentially harmful chemical and hazardous materials and radioactive compounds and as a result, AIXTRON is subject to stringent environmental and safety regulations in connection with its business operations (such as industrial safety regulations, the ordinance on hazardous substances, labor protection laws or the workplaces ordinance).

The Company is also subject to other regulations, for example the provisions of the US Foreign Corrupt Practices Act and the UK Bribery Act relating to the maintenance of books and records and anti-bribery controls. AIXTRON has an anti-corruption guideline in place which is mandatory for every AIXTRON employee.



## 2. Report on Economic Position

### 2.1. Global Economy

As a producer of capital goods, AIXTRON could be affected by the global economic development as far as it could have an effect on its own supply chain and cost of sales as well as on its customers' sales projections and therefore also on their investment behavior.

Global economic development remained subdued throughout the year 2016 with growth in the advanced economies, especially the United States, slowing down significantly and the unexpected Brexit vote adding another remarkable risk to future growth perspectives. In its World Economic Outlook Update, published January 16, 2017, the International Monetary Fund (IMF) projected global growth in 2016 slightly below the previous year's level at an estimated 3.1% (2015: 3.2%), with growth in the advanced economies for 2016 being forecast at 1.6% (2015: 2.1%) and in the emerging and developing countries at 4.1% (2015: 4.1%).

However, this global economic environment had no specific effects on AIXTRON's business development in fiscal year 2016 as AIXTRON is more dependent on innovation-driven industry business cycles such as the progressing technology changes in semiconductor markets.

Growth figures from the U.S. which fell short of expectations and a correspondingly cautious monetary policy by the Federal Reserve saw a slightly weakening US dollar throughout most of the year 2016. Only towards the end of the year, triggered by a new interest rate increase, the US dollar surged to a year-high of 1.038 USD/EUR. The year-end exchange rate on December 31, 2016 was 1.055 USD/EUR compared to 1.089 USD/EUR; an increase of approximately 3%. The average exchange rate used by AIXTRON to translate income and expenses denominated in US dollars in fiscal year 2016 was 1.11 USD/EUR (Q1/2016: 1.09 USD/EUR; Q2/2016: 1.13 USD/EUR; Q3/2016: 1.11 USD/EUR; Q4/2016: 1.09 USD/EUR) which was stable compared to the previous year (2015: 1.11 USD/EUR).

AIXTRON Management continues to carefully monitor the developments of the global economy and the financial markets, and regularly examines what can potentially be done to mitigate negative exogenous effects on AIXTRON's business.

### 2.2. The Semiconductor Equipment Market

The total ALD market of which AIXTRON addresses only a specific niche with its system technologies, was estimated by Gartner Dataquest in its latest forecast of December 2016 (Forecast: Semiconductor Manufacturing Equipment, Worldwide, 4Q16 Update) to be valued at USD 1,028 million for 2016.

In 2016, the electronics equipment industry in total grew by 41% (according to Gartner Dataquest, Forecast: Semiconductor Manufacturing Equipment, Worldwide, 4Q16 Update, December 2016).

In comparison, the subset, semiconductor capital spending is expected to have declined by 5.1% in 2016. A further subset, specific spending on Wafer Fab Equipment (WFE), which includes spending on deposition tools supplied by AIXTRON for the production of specialized applications such as gate stacks and capacitors, is expected to have grown by 8.1% year on year (according to Gartner Dataquest, Forecast: Semiconductor Manufacturing Equipment, Worldwide, 4Q16 Update, December 2016).

Compared to 2015, AIXTRON's equipment revenues for memory and logic applications increased by 11% to EUR 32.4 million (2015: EUR 29.3 million) in fiscal year 2016.

### 2.3. The LED Market

In 2016, the market for Gallium nitride based, LED devices which can be produced with AIXTRON's compound semiconductor MOCVD equipment, was expected to have grown by 13% measured in units according to a report from IHS (an independent semiconductor market research institute), published in July 2016. However, according to industry sources, LED prices have stabilized throughout the year. Concurrently, the market for Gallium nitride based, high brightness LED devices was predicted to grow in 2016 by 2% to USD 16.8 billion from USD 16.4 billion in 2015 (IHS).

In the more recent forecast "Semiconductor Manufacturing Equipment, Worldwide, 4Q16 Update" (December 2016) Gartner Dataquest anticipated that the total value of the 2016 MOCVD equipment market would decrease to approximately USD 250 million. Veeco and AIXTRON are expected to remain the main players in this market.

AIXTRON's revenues for MOCVD equipment to manufacture optoelectronic devices excluding LEDs increased by 14% from EUR 46.7 million in 2015 to EUR 53.2 million in 2016. AIXTRON's 2016 revenues of MOCVD manufacturing equipment for LEDs slightly increased from EUR 39.7 million in 2015 to EUR 41.1 million.

## 2.4 The Wide-Band-Gap (WBG) Gallium nitride and Silicon Carbide power semiconductor market

According to the market research institute IHS (February 2016), the market for Wide-Band-Gap (WBG) Gallium nitride (GaN) and Silicon Carbide (SiC) based power management devices is expected to grow from 231 million shipped units in 2015 to 297 million shipped units in 2016. Based on the opinion of both market research institutes IHS and Gartner, the penetration of WBG devices relative to total power device market is expected to rise from low single digit in 2016 to low double digit in 2021.

The growing demand for more efficient power management and switching applications as well as governmental policy changes and efforts from the supply chain, have contributed positively to increasing the momentum for wide band gap development activities across automotive, commercial, industrial and consumer segments.

The revenues of AIXTRON's MOCVD equipment for the manufacturing of WBG Gallium nitride (GaN) and Silicon Carbide (SiC) based power management devices in 2016 were EUR 21.8 million, lower than EUR 25.8 million in 2015 reflecting customer capital expenditure plans.

## 2.5 The OLED market

The market for large OLED displays is the most imminent opportunity for AIXTRON's Organic Semiconductor deposition and encapsulation technologies. The TV market is predicted to increasingly adopt OLED displays within the next years, at which point, it is expected that OLEDs will have the potential to penetrate the high end of the volume TV market to a larger degree. With its thin film encapsulation technology, AIXTRON additionally targets the market for flexible displays which offer the best solution for small and medium size displays used in mobile and wearable applications.

According to the market research institute Display Supply Chain Consultants (January 2017), the market for OLED TV is expected to have grown to 900,000 shipped units in 2016. The penetration of OLED TV relative to the total flat panel display TV market is expected to have reached 0.3% in 2016.

## 2.6. Results of Operations

### 2.6.1. Development of Revenues

In fiscal year 2016, AIXTRON recorded total revenues of EUR 196.5 million, which was virtually stable compared to 2015 (2015: EUR 197.8 million; 2014: EUR 193.8 million). The 2016 equipment revenues increased to EUR 155.7 million (2015: EUR 151.0 million; 2014: EUR 148.5 million), with demand for MOCVD Equipment for optoelectronics (excluding LEDs) being the largest contributor to AIXTRON's equipment revenues, representing 34%. Total equipment sales generated 79% of total revenues in 2016 (2015: 76%; 2014: 77%).

21% of total revenues in 2016 were generated by sales of spare parts and service, which is lower compared to the same figure in 2015 (2015: 24%; 2014: 23%). In absolute terms, sales of spare parts and service in 2016 were at EUR 40.8 million, 13% decrease compared to 2015 (2015: EUR 46.8 million; 2014: EUR 45.3 million).

Revenues by Equipment, Spare parts & Service	2016		2015		2014		2016-2015	
	m EUR	%	m EUR	%	m EUR	%	m EUR	%
Equipment revenues	155.7	79	151.0	76	148.5	77	4.7	3
Other revenues (service, spare parts, etc.)	40.8	21	46.8	24	45.3	23	-6.0	-13
<b>Total</b>	<b>196.5</b>	<b>100</b>	<b>197.8</b>	<b>100</b>	<b>193.8</b>	<b>100</b>	<b>-1.3</b>	<b>-1</b>

In 2016, the major part of total revenues continued to be generated by sales to customers in Asia, which was 5 percentage points higher than in the previous year at 65% (2015: 60%; 2014: 83%). 19% of total revenues in 2016 were generated in the Americas (2015: 22%; 2014: 4%) and the remaining 16% in Europe (2015: 18%; 2014: 13%).

Revenues by Region	2016		2015		2014		2016-2015	
	m EUR	%	m EUR	%	m EUR	%	m EUR	%
Asia	128.0	65	118.4	60	160.2	83	9.6	8
Europe	30.8	16	35.8	18	25.2	13	-5.0	-14
Americas	37.7	19	43.6	22	8.4	4	-5.9	-14
<b>Total</b>	<b>196.5</b>	<b>100</b>	<b>197.8</b>	<b>100</b>	<b>193.8</b>	<b>100</b>	<b>-1.3</b>	<b>-1</b>

## 2.6.2. Development of Results

### Cost Structure

	2016		2015		2014		2016-2015	
	Full Year		Full Year		Full Year			
	m EUR	% Rev.	m EUR	% Rev.	m EUR	% Rev.	m EUR	%
<b>Cost of sales</b>	<b>140.2</b>	<b>71</b>	<b>147.9</b>	<b>75</b>	<b>154.1</b>	<b>80</b>	<b>-7.7</b>	<b>-5</b>
<b>Gross profit</b>	<b>56.3</b>	<b>29</b>	<b>49.8</b>	<b>25</b>	<b>39.7</b>	<b>20</b>	<b>6.5</b>	<b>13</b>
<b>Operating costs</b>	<b>77.7</b>	<b>40</b>	<b>76.5</b>	<b>39</b>	<b>98.0</b>	<b>51</b>	<b>1.0</b>	<b>1</b>
Selling expenses	13.8	7	11.5	6	14.1	7	2.2	18
General and administration expenses	17.1	9	16.3	8	19.3	10	0.8	5
Research and development costs	53.9	28	55.4	28	66.7	34	-1.5	-3
Net other operating (income) and expenses	(7.2)	4	(6.7)	3	(2.2)	1	0.5	8

#### Cost of Sales

In 2016, cost of sales decreased year on year by 5% or EUR 7.7 million from EUR 147.9 million to EUR 140.2 million (2014: EUR 154.1 million). This was due to higher efficiencies in production and service, which also led to lower inventory write downs. Consequently, 2016 cost of sales relative to revenues decreased to 71% (2015: 75%; 2014: 79%).

#### Gross Profit, Gross Margin

Against this background, the Group's gross profit in 2016 increased year-on-year to EUR 56.3 million (2015: EUR 49.8 million; 2014: EUR 39.7 million), resulting in an improved gross margin of 29% after 25% in 2015 (2014: 21%).

#### Operating Costs

With EUR 77.7 million, total **operating costs** in 2016 were stable against the previous year's figure of EUR 76.5 million (2014: EUR 98.0 million), mainly due to continued tight cost control. The operating costs were in line with the targeted annual cost level of approximately EUR 80 million. Operating costs relative to revenues in 2016 were at close to 40% (2015: 39%; 2014: 51%).

This development was influenced by the following factors:

**Selling expenses** in 2016 increased in absolute terms from EUR 11.5 million to EUR 13.8 million mainly due to accelerated depreciation of demonstration equipment in China (2013: EUR 14.1 million). Selling expenses relative to revenues were stable at 7% (2015: 6%; 2014: 7%).

Due to expenses in conjunction with the planned takeover transaction, general and administration expenses in fiscal year 2016 increased slightly by 0.8 million to EUR 17.1 million or 9% of revenues (2015: EUR 16.3 million or 8% of revenues; 2014: EUR 19.3 million or 10% of revenues).

Key R&D Information	2016	2015	2014	2016-2015
R&D expenses (in EUR million)	53.9	55.4	66.7	-3%
R&D expenses, % of sales	27	28	34	
R&D employees (period average)	252	265	285	-5%
R&D employees, % of total headcount (period average)	35	35	36	

**Research and development costs** decreased by 3% year-on-year from EUR 55.4 million in 2015 (2014: EUR 66.7 million) to EUR 53.9 million in 2016, which was mainly due to the completion of the AIX R6 project whereas our efforts in Power Electronics, OLED and compound semiconductor materials for logic (III-V-on-Silicon, TFOS) were increased.

Personnel Costs	2016	2015	2014	2016-2015	
	m EUR	m EUR	m EUR	m EUR	%
Cost of Sales	23.4	23.8	22.3	-0.4	-2%
Selling, General and Administrative expenses	15.5	15.6	16.1	-0.1	0%
Research and Development costs	24.2	23.6	28.1	0.6	3%
<b>Total</b>	<b>63.1</b>	<b>63.0</b>	<b>66.5</b>	<b>0.1</b>	<b>0%</b>

The average number of Group employees in 2016 declined from 757 in 2015 to 721 (2014: 785). **Personel costs** of EUR 63.1 million in 2016 were flat compared to EUR 63.0 million in 2015 (2014: EUR 66.5 million) due to local currency effects and increased salaries. As per December 31, 2016, the number of employees, decreased from 748 as per December 31, 2015 to 705 (December 31, 2014: 789).

**Net other operating income and expenses** for fiscal year 2016 were virtually stable at an income of EUR 7.2 million (2015: EUR 6.7 million income; 2014: EUR 2.2 million income). A contractual settlement and R&D funding were major contributors.

In 2016, the Company recorded a **net currency loss** of EUR -0.2 million (2015: EUR 2.7 million net income; 2014: EUR -0.3 million net loss) resulting from currency transaction and translation differences of balance sheet positions.

The EUR 2.1 million of R&D grants received in 2016 (2015: EUR 3.0 million; 2014: EUR 1.8 million), were recorded as "other operating income".

#### EBITDA (Earnings before Interest, Tax, Depreciation and Amortization)

At EUR -7.9 million EBITDA in fiscal year 2016 further improved against the previous year by 52% or EUR 8.5 million in absolute terms (2015: EUR -16.4 million, 2014: EUR -41.3 million), mainly due to the above-mentioned effects. Depreciation increased mainly due to the accelerated depreciation of demonstration and laboratory equipment.

	Year ended December 31		
(In EUR million)	2016	2015	2014
<b>EBITDA</b>	<b>-7.9</b>	<b>-16.4</b>	<b>-41.3</b>
Depreciation, amortization and impairment expense	-13.5	-10.3	-17.0
<b>Operating Result (EBIT)</b>	<b>-21.4</b>	<b>-26.7</b>	<b>-58.3</b>

#### Operating Result EBIT (Earnings before Interest and Tax)

The absolute **operating result** (EBIT) improved in a year-on-year comparison by EUR 5.3 million and was at EUR -21.4 million in 2016 (2015: EUR -26.7 million; 2014: EUR -58.3 million) resulting in an improved EBIT margin of -11% (2015: -14%; 2014: -30%). This is attributable primarily to the afore-mentioned cost effects.

### Result Before Taxes

**Result before taxes** improved year-on-year by EUR 5.0 million from EUR -26.0 million in 2015 (2014: EUR -57.1 million) to EUR -21.0 million in 2016, with a net finance income of EUR 0.4 million (2015: EUR 0.8 million income; 2014: EUR 1.2 million income).

Interest & Taxes	2016	2015	2014	2016-2015	
	m EUR	m EUR	m EUR	m EUR	%
<b>Net Interest Income/Expense</b>	<b>0.5</b>	<b>0.8</b>	<b>1.2</b>	<b>-0.3</b>	<b>-38</b>
Interest Income	0.6	0.8	1.2	-0.2	-25
Interest Expenses	-0.1	0.0	0.0	-0.1	n.m.
<b>Tax Expenses</b>	<b>-3.1</b>	<b>-3.2</b>	<b>-5.4</b>	<b>0.1</b>	<b>-3</b>

In 2016, AIXTRON recorded a country specific **tax expense** of EUR 3.1 million (2015: tax expense of EUR 3.2 million; 2014: tax expense of EUR 5.4 million). Unrecognized **deferred tax assets** related to tax losses at December 31, 2016 totaled EUR 185 million (2015: EUR 161.2 million; 2014: 129.5 million).

### Profit/Loss Attributable to the Equity holders of AIXTRON SE (after taxes)

The 2016 **after-tax result** attributable to the equity holders of AIXTRON SE was EUR -24.0 million or -12% of revenues compared to EUR -29.2 million (-15% of revenues) in 2015 (2014: EUR -62.5 million or -32% of revenues).

### Net Result AIXTRON SE – Use of Results

AIXTRON SE, the parent company of the AIXTRON Group, recorded a net accumulated loss in accordance with German generally accepted accounting principles, (German GAAP) based on the German Commercial Code, HGB, of EUR -120.5 million for 2016 (2015: loss of EUR -87.3 million; 2014: loss of EUR -53.6 million).

The 2016 loss will be carried forward and consequently no dividend payment will be made for 2016 (2015: no dividend; 2014: no dividend).

### 2.6.3. Development of Orders

Orders (in EUR million)	2016	2015	2014	2016-2015	
				m EUR	%
Total order intake incl. spares & service	225.1	167.1	198.7	58.0	35
Equipment order backlog (end of period)	78.1	42.9	65.2	35.2	82

As a matter of internal policy, the 2016 US dollar based order intake and backlog were recorded at the 2016 budget exchange rate of 1.10 USD/EUR (2015: 1.25 USD/EUR; 2014: 1.35 USD/EUR). In order to better reflect industry practice, Management has decided to report total order intake including spares & service from 2015 rather than continuing to report equipment order intake only. For comparison reasons, previous years' figures have been changed to reflect this policy. Due to the generally quick turnaround of spares & service into revenues, the equipment order backlog figures will remain unchanged and continue to include equipment orders only.

In 2016, **total order intake** including spares & service was 35% higher year-on-year at EUR 225.1 million (2015: EUR 167.1 million; 2014: EUR 198.7 million). This was driven by stronger demand from LED including Red-Orange-Yellow and specialty-LEDs as well as power electronic applications. Demand from Silicon and Optoelectronic applications continued at a solid level.

The total equipment order backlog of EUR 78.1 million at December 31, 2016 was 67% higher than the 2016 opening backlog of EUR 46.7 million (both at budget rate of 1.10 USD/EUR) (December 31, 2014: EUR 65.2 million at budget rate of 1.35 USD/EUR). This strong backlog will allow a better production utilization in the first half of 2017 compared to 2016. The budget rate in 2017 did not change which is why the 2017 opening backlog equals the backlog as of December 31, 2016.

As a matter of internal policy, AIXTRON follows clear internal requirements before recording and reporting received equipment orders as order intake and order backlog. These requirements comprise of all of the following minimum criteria:

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

In addition and reflecting current market conditions, the Company's Management reserves the right to assess whether the actual realization of each respective system order is sufficiently likely to occur in a timely manner according to Management's opinion. When Management concludes, that there is sufficient likelihood of realizing revenue on any specific system or that there is an unacceptable degree of risk of not realizing revenue on any specific system, Management will include or exclude the order, or a portion of the order, into or from the recorded order intake and order backlog figures, regardless of compliance with requirements of the points 1-4 above. The backlog is being regularly assessed and adjusted to reflect potential execution risks if necessary.

## 2.7. Financial Position

### 2.7.1. Corporate Financial Management

AIXTRON has a central financial management system to control its global liquidity, interest and currency management.

Due to the volatile nature of the semiconductor business, a sufficient level of cash is essential to expeditiously finance potential business needs. The Company's need for cash is generally provided for through operating cash flows. In order to secure future financing and support the indispensable R&D activities, the Company has access to a strong equity capital base. Furthermore, approved by the Annual General Meeting, and subject to Supervisory Board approval, the Company has the authority to issue equity instruments to be able to raise additional liquidity on the capital market if required.

AIXTRON conducts a large part of its business in foreign currencies, i.e. in currencies other than the Euro. The most prevalent foreign currency relevant to AIXTRON is the US Dollar. Unfavorable exchange rate movements, especially the US Dollar/Euro exchange rate, may adversely affect the Company's results of operation. In order to manage foreign exchange risks, the Company routinely monitors if and to what extent currency hedging instruments should be used. As of December 31, 2016, no hedging contracts were in place.

### 2.7.2. Funding

AIXTRON SEs stated **share capital** as of December 31, 2016 amounted to EUR 112,804,105 (December 31, 2015: EUR 112,720,355; December 31, 2014: EUR 112,694,555) divided into 112,804,105 registered shares with a proportional interest in the share capital of EUR 1.00 per no-par value registered share. All registered shares are fully paid in

The Company has a number of **stock option programs** in place that grant the members of the Executive Board and employees the right to purchase AIXTRON shares under certain conditions. In fiscal year 2016, 83,750 stock options (2015: 25,800; 2014: 81,100) were exercised, resulting in delivery of in total 83,750 ordinary shares. In fiscal year 2016, no new stock options were granted (2015: 0; 2014: 1,150,400).

AIXTRON ordinary shares	Dec 31, 16	Exercised	Expired/Forfeited	Allocation	Dec 31, 15
Stock options	2,317,790	83,750	490,275	0	2,891,815
Underlying shares	2,317,790	83,750	490,275	0	2,891,815

A more detailed description of the different stock option plans and a summary of all the stock option transactions can be found in Note 23 to the Company's Consolidated Financial Statements "Share-based payments".

The Company recorded no **bank borrowings** as of December 31, 2016, 2015 and 2014.

Where necessary, AIXTRON SE provides loans and financial security facilities to its subsidiaries to enable the business to continue to operate efficiently. The Company has granted no security interests in its own land and buildings.

The **equity ratio** was 85% as of December 31, 2016, compared to 82% as of December 31, 2015 (December 31, 2014: 78%).

In 2016, the **return on equity** (ROE) based on the negative 2016 Group's net result in proportion to the average total shareholders' equity at the start and end of the year was -6% (2015: -7%; 2014: -15%).

In order to finance future developments, the Company regularly explores and assesses on an ongoing basis, potential funding opportunities available in the market.

### 2.7.3. Investments

The AIXTRON Group's total capital expenditures in fiscal year 2016 amounted to EUR 5.3 million (2015: EUR 13.3 million; 2014: EUR 13.4 million).

In 2016, EUR 4.9 million (2015: EUR 12.5 million; 2014: EUR 12.6 million) were related to property, plant and equipment (including testing and laboratory equipment). The remaining EUR 0.4 million in 2016 (2015: EUR 0.7 million; 2014: EUR 0.8 million) were related to intangible assets including software licenses.

In 2017, investments will again be made mainly for laboratory and test equipment.

The decrease of EUR 52.8 million in bank deposits with a maturity of at least three months during 2016 was recorded as cash inflow from investing activities (2015: decrease of EUR 60.5 million; 2014: increase of EUR 9.9 million).

All 2016, 2015 and 2014 expenditures were funded out of own available cash resources.

## 2.7.4. Liquidity

Cash and cash equivalents including cash deposits with a maturity of at least three months, most of which is held in Euros (also see "Investments"), decreased by 24% or EUR 49.3 million to EUR 160.1 million (EUR 120.1 million + EUR 40.0 million financial assets) as of December 31, 2016 (December 31, 2015: EUR 209.4 million, equaling EUR 116.3 million + EUR 93.1 million; December 31, 2014: EUR 268.1 million, equaling EUR 116.6 million + EUR 151.5 million).

The difference is mainly attributable to the negative net result, the payment of the second installment of the agreed return of EUR 17.2 million advance payments to the Chinese customer San'an and an agreed milestone payment of EUR 4.1m for the purchase of PlasmaSi (acquired in 2015) in Q1/2016. Due to the high shipment levels at the end of 2016 receivables went up significantly at the end of 2016 and related receipt of customer payments will be recorded in early 2017.

There are currently no restrictions on the Company's use of cash resources.

## 2.7.5. Development of Cash Flows

In fiscal year 2016, a **cash flow from operating activities** of EUR -37.7 million was recorded (2015: EUR -45.7 million; 2014: EUR -33.8 million). The slight improvement in operating cash flow in 2016 was mainly caused by the reduced losses. The level of the negative cash flow was impacted by the incurred losses, the second installment of the agreed repayment of the previously received deposits to San'an in Q1/2016 as well as high shipment levels at the end of 2016 with receipt of payment in Q1/2017. A large part of these open receivables will be cleared in Q1/2017.

A **cash flow from investment activities** of EUR 43.4 million was recorded in 2016 (2015: cash flow of EUR 41.2 million; 2014: cash flow of EUR -23.2 million). This figure includes an agreed milestone payment of EUR 4.1m for the purchase of PlasmaSi as well as EUR 52.8 million which were transferred from longer term deposits to cash and cash equivalents. This effect was only partially offset by the previously mentioned lower capital expenditures (2016: 5.3 million 2015: EUR 13.3 million; 2014: 13.4 million).

In 2016, the **cash flow from financing activities** of EUR 0.3 million (2015: cash flow of EUR -0.1 million; 2014: cash flow of EUR 0.2 million) was recorded mainly from the proceeds from the issue of new shares. In 2016, no dividends were paid to AIXTRON shareholders (2015: 0; 2014: 0).

Including the previously mentioned lower capital expenditures, the **free cash flow** (adjusted for acquisition effects), improved by 25% or EUR 14.4 million and amounted to EUR -42.9 million (2015: EUR -57.3 million; 2014: EUR -47.0 million).

## 2.8. Assets

### 2.8.1. Property, Plant and Equipment

The value of property, plant and equipment was at EUR 74.2 million as of December 31, 2016 (EUR 81.3 million as of December 31, 2015; EUR 77.3 million as of December 31, 2014) mainly due to regular and accelerated depreciation of laboratory equipment.

### 2.8.2. Goodwill

The value of goodwill was at EUR 74.6 million as per December 31, 2016 (EUR 75.9 million as per December 31, 2015; EUR 64.8 million as per December 31, 2014). The difference was due to exchange rate fluctuations. There were no impairments in fiscal year 2016. For further information on the impairment of goodwill, refer to Note 12 to the Company's Consolidated Financial Statements "Intangible assets".

### 2.8.3. Other Intangible Assets

The value of other intangible assets also decreased to EUR 5.4 million as per December 31, 2016 (EUR 6.4 million as per December 31, 2015; EUR 2.5 million as per December 31, 2014) mainly due to regular amortization.

### 2.8.4. Inventories

Inventories, including raw materials, unfinished and finished goods, decreased to EUR 54.2 million as per December 31, 2016, compared to EUR 70.8 million as per December 31, 2015 (EUR 81.7 million as of December 31, 2014), reflecting successful sale of AIX R6 inventory and improved inventory management. The current inventory level results in a solid inventory/sales and inventory/backlog ratio.

### 2.8.5. Trade Receivables

Trade receivables increased significantly to EUR 60.2 million as of December 31, 2016, reflecting strong shipments at the end of the year (December 31, 2015: EUR 26.0 million; December 31, 2014: EUR 26.3 million).

### 2.8.6. Liabilities

**Trade payables** as of December 31, 2016 increased by 49% year-on-year to EUR 14.6 million compared to EUR 9.8 million as of December 2015 (December 31, 2014: EUR 16.4 million), being in line with shipment schedules and related supplier orders. **Provisions** (current and non-current) decreased from EUR 21.5 million as of December 31, 2015 to EUR 18.3 million as of December 31, 2016 (December 31, 2014: EUR 29.3m) mainly due to reduced liabilities in conjunction with the successful sales of AIX R6. **Advance payments from customers** as of December 31, 2016 increased to EUR 26.1 million compared to EUR 24.0 million as of December 31, 2015 (December 31, 2014: EUR 67.0m), reflecting the higher order backlog. **Other current liabilities** decreased from EUR 25.0 million as of December 31, 2015 to EUR 2.4 million as of December 31, 2016 mainly due to the payment of the agreed refund to San'an as well as the agreed milestone payment for the purchase of PlasmaSi (December 31, 2014: EUR 3.2 million).

## 2.9. Management Assessment of Company Situation

Following the termination of the planned takeover transaction by a Chinese investor in December 2016, AIXTRON now is focusing on the optimal structure of its technology portfolio as part of its corporate strategy. Against this background, AIXTRON is currently pursuing different options in order to successfully reduce required upfront expenses for the development of future technologies. These options include looking for partners, joint ventures or other alternatives.

At the same time, AIXTRON continues to invest consistently into deposition or encapsulation technologies for Power Electronics, Optoelectronics, OLED, Memory, Logic and Carbon Nanomaterials including Graphene. The Company has seen market interest and demand from customers in all of these fields supporting the Companies' diversification strategy.

For MOCVD equipment to manufacture power management devices, revenues in 2016 were EUR 21.8 million, down from EUR 25.8 million in 2015 reflecting customer capital expenditure plans. Based on a growing penetration of power electronics devices based on the new materials GaN and SiC, further future growth is expected in this area.

Revenues for MOCVD equipment to manufacture devices for optoelectronic applications excluding LEDs have increased by 14% to EUR 53.2 million from EUR 46.7 million in 2016.

Revenues for LED-related MOCVD equipment increased in the reporting period slightly from EUR 39.7 million in 2015 to EUR 41.1 million in 2016, including AIX R6 sales from inventory.

Revenues for AIXTRON's logic and memory tools have increased by 11% to EUR 32.4 million in 2016 compared to EUR 29.3 million in 2015. The Company expects future growth potential in this area depending on customers' capital expenditure plans.

Market entry remains the main focus in the area of OLED deposition and encapsulation technologies. The successful market entry of this highly innovative technology against the incumbent technologies depends on imminent customer commitments to adopt the OVPD large area technology initially for pilot manufacturing and high volume manufacturing at a later stage. The short term win of a customer contract is decisive for the further development of the OVPD technology.

In addition to above mentioned activities, Management will continue to focus on costs, margin contributions as well as the allocation of funds and will continuously review the performance and prospects of the Companies' product portfolio.

The business development in all areas was in line with Management's expectations. However, the Company's Management continues to consider this development as not satisfactory. Further improvements will depend on the continuous execution of the operating programs and the market entry of new technologies in the portfolio.

The Company continues to have a strong balance sheet and a strong liquidity without any bank borrowings.

The earnings and free cash flow guidance for fiscal year 2016, which was published in the Annual Report 2015 and substantiated during the year, was successfully achieved.



### 3. Report on Post-Balance Sheet Date Events

On January 4, 2016, a U.S.-based law firm filed a complaint on behalf of a shareholder of the Company, naming AIXTRON as a defendant in a putative class action asserting claims under the Securities and Exchange Act of 1934. On December 20, 2016, the Court entered an opinion granting AIXTRON's motion to dismiss all claims asserted against it. Subsequently, plaintiff confirmed in January 2017 that he will not pursue an appeal and the time to pursue an appeal has expired. As a result, the order dismissing the complaint is final and the case is closed.

On January 20, 2017, AIXTRON announced that Martin Goetzeler will leave the Company effective February 28, 2017. AIXTRON Supervisory Board Chairman Kim Schindelhauer will become interim CEO and will take over the tasks of Mr. Goetzeler effective March 1, 2017. Professor Dr. Wolfgang Blättchen, current deputy chairman of the Supervisory Board, will take over as chair of the Supervisory Board during Mr. Schindelhauer's work as CEO of the company.

The Group has commenced pursuing options for some of its activities in order to allow the continuation of development projects with high up-front expenses. These options include looking for partners, joint ventures or other alternatives.

As per January 9, 2017, AIXTRON has executed a voluntary delisting of its American Depositary Shares from NASDAQ and has filed for deregistration from the Securities and Exchange Commission. On this day, reporting obligations under the Securities Exchange Act of 1934 also terminated.

There were no known business events with a potentially significant effect on AIXTRON's results of operation, financial position or net assets as of December 31, 2016.

## 4. Remuneration Report

The remuneration report summarizes the principles of the remuneration system for the members of the Executive Board and Supervisory Board of AIXTRON SE explains the structure and amount of the remuneration paid. The remuneration of each member of the Executive Board and Supervisory Board for fiscal year 2016 is presented on an individual basis. The remuneration report is based on the recommendations of the German Corporate Governance Code and includes the disclosures required by the German Commercial Code (Handelsgesetzbuch - HGB) and the International Financial Reporting Standards (IFRS). The remuneration report is part of the Group Management Report.

### 4.1. Principles of Management Compensation

#### 4.1.1. Executive Board

The Supervisory Board as a whole is responsible for establishing the structure of the remuneration system and for the total remuneration for individual members of the Executive Board. It regularly discusses and reviews remuneration for appropriateness and to ensure that Management is not taking unreasonable risks.

The remuneration level of the Executive Board members of AIXTRON SE is aligned not only with the commercial and financial situation and future prospects of the Company and the level and structure of Executive Board remuneration at comparable companies but also with the compensation structure in place in other areas of the Company. In addition, the responsibilities, experience and contribution of each individual Executive Board member, and the desire to retain them, are taken into account when calculating the remuneration.

The current remuneration system was approved by AIXTRON's shareholders at the Annual General Meeting held on May 23, 2013.

Executive Board remuneration currently consists of three components: fixed remuneration (including benefits in kind and payments into a private pension insurance), a variable bonus, and may include stock-based remuneration.

##### 4.1.1.1. Fixed remuneration

The Executive Board employment contracts stipulate an annual income for the fixed remuneration component. The fixed remuneration component is non-performance-related and is paid out on a monthly basis (13 times a year) as a salary. Additional payments in kind are made, chiefly consisting of company car usage and payments for private pension insurance.

##### 4.1.1.2. Variable bonus

The limited variable bonus scheme for the collective Executive Board (profit-sharing) is based on consolidated net income for the year and is paid from an "accrued internal bonus pool", defined as up to 10% of the modified consolidated net income for the year, but not to exceed EUR 6.5 million in total. The modified consolidated net income for the year is obtained from the Company's Consolidated Financial Statements (IFRS) certified by the auditor, less a consolidated loss carry forward figure and those amounts that are to be allocated to retained earnings in the Annual Financial Statements of AIXTRON by law or in accordance with the Articles of Association. The consolidated loss carry forward is obtained from consolidated net losses from previous years, less consolidated net income from subsequent fiscal years.

The variable bonus – paid out of the above mentioned "accrued internal bonus pool" – will be paid half through a monetary element and half in shares. That part of the variable bonus payable in shares will be converted into whole numbers of shares of the Company and will be deferred until the third bank working day following the ordinary General Meeting in the third fiscal year after having been granted to the Board members. The number of the shares to be granted for the part of the variable bonus payable in shares will be determined in accordance with the closing price of the share of the Company on the third bank working day following the ordinary General Meeting, which is presented with the annual financial statements of the Company and the consolidated financial statements for the fiscal year for which the bonus is granted. The shares will be delivered from treasury shares. Thus, during the multi-year waiting period, the Executive Board members will take part in both positive and negative developments of the Company's share price so that the variable compensation structure is clearly oriented toward a sustainable business development.

##### 4.1.1.3. Stock-based remuneration

In addition, as a variable component acting as a long-term incentive with an element of risk, the members of the Executive Board may receive a share-based payment in the form of options that are granted under AIXTRON's stock option plans. The stock option plans, including the exercise thresholds, are adopted at the Companies' General Meeting. The number of options granted to the Executive Board is stipulated by the Supervisory Board. Further details on the outstanding stock options of the Executive Board as well as comments on the respective stock option plans are set out further in this report under "Executive Board remuneration" of the chapter "Individual remuneration structure".

#### 4.1.1.4. Commitments in connection with the termination of Executive Board membership

If the tenure of any Executive Board member ends prematurely as result of a revocation of the appointment, such member of the Executive Board will receive a severance payment in an amount equal to the fixed and variable compensation expected to be owed by the Company for the remaining term of the employment contract, however, not exceeding an amount equal to twice the annual compensation (severance cap). Any payments beyond this severance payment shall be excluded.

If the tenure of any Executive Board member ends prematurely because the employment contract is terminated by mutual agreement, the total amount of any payments agreed to be paid by the Company to the Executive Board member as part of such an agreement may not exceed the amount of the severance payment which the Executive Board member would receive in the event of a revocation of the appointment with due regard to the severance cap.

If the tenure of any Executive Board member ends prematurely because the employment contract is terminated after a change of control, such member of the Executive Board will receive a severance payment in an amount equal to the fixed and variable compensation expected to be owed by the Company for the remaining term of the employment contract, however, not exceeding the severance cap, i.e. an amount equal to twice the annual compensation. Any payments beyond this severance payment shall be excluded. A change of control situation exists if a third party or a group of third parties who contractually combine their shares in order to act subsequently as a third party, directly or indirectly holds more than 50% of the Company's registered share capital.

#### 4.1.1.5. Other

The current Executive Board members have no individual Company pension benefits, which would result in pension provisions being required to be made by AIXTRON, and receive no loans from the Company.

#### 4.1.2. Supervisory Board

Remuneration of the Supervisory Board is regulated in Article 17 of AIXTRON's Articles of Association. Accordingly, the annual fixed compensation for individual members of the Supervisory Board is EUR 25,000. The Chairman's compensation is three times this amount and the Deputy Chairman's one and a half times the amount received by a regular member of the Supervisory Board.

The members of the Supervisory Board also receive, in aggregate, a limited variable compensation of 1% of the Company's net income, less an amount corresponding to 4% of the paid-in contributions to the share capital. The Chairman of the Supervisory Board receives 6/17, the Deputy Chairman 3/17, and each other member of the Supervisory Board 2/17 of the variable remuneration. The variable compensation is limited to fourfold the annual fixed compensation of each Supervisory Board member. In addition, committee members receive an attendance fee of EUR 2,000 for attending a committee meeting, with the Chairman of the committee receiving triple this amount. The total annual attendance fee per Supervisory Board member is limited to one-and-a-half times that individual's fixed remuneration.

The Supervisory Board members receive no loans from the Company.

#### 4.1.3. D&O insurance

The Company has a D&O insurance contract in place, covering the activities of members of the Executive Board and members of the Supervisory Board. Pursuant to the amended § 93, Section 2 AktG following the Act on the Appropriateness of Executive Board remuneration (VorstAG), as well as to the amended recommendation in chapter 3.8. German Corporate Governance Code, the deductible for members of the Executive Board and members of the Supervisory Board is equal to a minimum of 10% of the respective, potential loss incurred. The deductible cannot exceed a factor of 1.5 of the respective annual fixed remuneration.

### 4.2. Individual remuneration structure

#### 4.2.1. Executive Board remuneration

The total Executive Board remuneration in fiscal year 2016 amounted to EUR 1,055,631 (2015: EUR 1,040,631; 2014: EUR 2,014,775). The success-independent, fixed remuneration of the Executive Board in 2016 was at EUR 1,055,631 (2015: EUR 1,040,631; 2014: EUR 1,136,774).

No variable bonus was granted for fiscal years 2016 and 2015. For each of the years 2013 and 2014, Mr. Goetzeler was granted a total of 59,647 AIXTRON shares as a contractually guaranteed bonus (2015: 35,053 shares; 2014: 24,594 shares). The transfer of the shares is deferred until the third bank working day following the ordinary General Meeting in the third fiscal year after having been granted. During the past fiscal year, no stock options were granted to the Members of the Executive Board (2015: 0; 2014: 100,000).

### 4.3. Information according to Nr 4.2.5 German Corporate Governance Code (DCGK)

#### 4.3.1. Value of benefits granted displayed according to DCGK

The following table according to DCGK shows the value of benefits granted to the individual members of the Executive Board in fiscal year 2016 as well as the minimum and maximum values that can be achieved.

For the one-year variable compensation, in line with the requirement of the DCGK, the target value (i.e. the value in the event of 100% goal achievement) granted for the year under review is stated. The multi-year variable compensation granted in the year under review is broken down into different plans are stated.

Benefits granted	Martin Goetzeler				Dr. Bernd Schulte			
	Chief Executive Officer				Chief Operating Officer			
	Member of the Executive Board				Member of the Executive Board			
	since March 1, 2013				since March 7, 2002			
	2015	2016	2016 (min)	2016 (max)	2015	2016	2016 (min)	2016 (max)
Fixed compensation	600,000	600,000	600,000	600,000	415,000	430,000	430,000	430,000
Fringe benefits	13,104	13,104	13,104	13,104	12,527	12,527	12,527	12,527
<b>Total</b>	<b>613,104</b>	<b>613,104</b>	<b>613,104</b>	<b>613,104</b>	<b>427,527</b>	<b>442,527</b>	<b>442,527</b>	<b>442,527</b>
One-year variable compensation	0	0	0	4,000,000	0	0	0	2,500,000
Multi-year variable compensation	0	0	0	0	0	0	0	0
<i>Deferral from one-year variable compensation</i>	0	0	0	0	0	0	0	0
<i>Stock option program 2012 (blackout period: 4 years)</i>	0	0	0	0	0	0	0	0
<i>Stock option program 2007 (blackout period: 2 years)</i>	0	0	0	0	0	0	0	0
<i>Stock option program 2002 (blackout period: 2 years)</i>	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,000,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,500,000</b>
Service cost	0	0	0	0	0	0	0	0
<b>Total</b>	<b>613,104</b>	<b>613,104</b>	<b>613,104</b>	<b>4,613,104</b>	<b>427,527</b>	<b>442,527</b>	<b>442,527</b>	<b>2,942,527</b>

#### 4.3.2. Allocation displayed according to DCGK

As the benefits granted to the members of the Executive Board in a fiscal year does not always result in a corresponding payment in the respective fiscal year, the following table shows severally - in line the relevant recommendation of the DCGK - the value of the actual allocation (amount disbursed) in fiscal year 2016.

According to the recommendations of the DCGK, for the fixed compensation and the one-year variable compensation the allocation (amount disbursed) for the respective fiscal year is entered. For subscription rights and other share-based payments, the time of allocation and the allocation amount is deemed to be the relevant time and value under German tax law.

Benefits allocated	Martin Goetzeler		Dr. Bernd Schulte	
	Chief Executive Officer		Chief Operating Officer	
	Member of the Executive Board		Member of the Executive Board	
	since March 1, 2013		since March 7, 2002	
	2015	2016	2015	2016
Fixed compensation	600,000	600,000	415,000	430,000
Fringe benefits	13,104	13,104	12,527	12,527
<b>Total</b>	<b>613,104</b>	<b>613,104</b>	<b>427,527</b>	<b>442,527</b>
One-year variable compensation	0	0	0	0
Multi-year variable compensation	0	0	0	67,132
<i>Deferral from one-year variable compensation</i>	0	0	0	0
<i>Stock option program 2012 (blackout period: 4 years)</i>	0	0	0	0
<i>Stock option program 2007 (blackout period: 2 years)</i>	0	0	0	67,132
<i>Stock option program 2002 (blackout period: 2 years)</i>	0	0	0	0
Other	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Service cost	0	0	0	0
<b>Total</b>	<b>613,104</b>	<b>613,104</b>	<b>427,527</b>	<b>509,659</b>

As of December 31, 2016, the AIXTRON Executive Board held a total of 283,500 options for the purchase of 283,500 shares of the Company (December 31, 2015: 395,500; December 31, 2014: 398,140). The number of shares underlying the options is set out below. The actual profits from exercising the stock options may differ significantly from the figures shown in the table.

Executive Board Member	Allocation date	Outstanding	Exercisable	Grant Date	Option Value	Exercise price	Maturity	Total Outstanding Shares
		(Shares)	(Shares)		(EUR)	(EUR)		
Martin Goetzeler	Oct 2014	50,000	0		189,000	13.14	Oct 2024	<b>50,000</b>
Dr. Bernd Schulte	Oct 2014	50,000	0		189,000	13.14	Oct 2024	
	Nov 2010	52,000	26,000		461,240	26.60	Nov 2020	
	Nov 2009	52,000	39,000		448,240	24.60	Nov 2019	
	Dec 2007	52,000	52,000		225,680	10.09	Dec 2017	
	May 2002	27,500	0		152,625	7.48	May 2017	233,500
<b>Total</b>		<b>283,500</b>	<b>117,000</b>					<b>283,500</b>

In accordance with IFRS 2, the "grant-date fair value of the options" is also used as the basis for recognizing options issued after November 7, 2002 under expenses on the Income Statement. For stock options issued prior to November 7, 2002, the fair value was determined using the Black-Scholes model.

The expenses for share based compensation of each individual member of the Executive Board are as follows:

in EUR thousands	2016	2015	2014
Martin Goetzeler	47	47	263
Dr. Bernd Schulte	47	53	53
Wolfgang Breme	0	0	-76

In 2016, options to acquire 60,000 AIXTRON shares expired (2015: 2,640; 2014: 158,976). The expenses for the unvested expired options have been reversed in accordance with IFRS 2.

In fiscal year 2016, current Executive Board members exercised 52,000 options (2015: 0; 2014: 48,000).

	Date of exercise	Number of shares
<b>2016</b>		
Dr. Bernd Schulte	September 12, 2016	52,000
<b>2014</b>		
Dr. Bernd Schulte	November 21, 2014	35,000
Wolfgang Breme	August 28, 2014	13,000

The current Executive Board members have no individual company pension benefits which would result in pension provisions being required to be made by the company. Instead, the Executive Board annual pension allowance is paid by AIXTRON and included in the fixed remuneration, and is transferred by the Executive Board members into independent insurance contracts with a benevolent fund or similar plan. In the years 2016, 2015 and 2014, payments of EUR 80,000 per annum were made to Martin Goetzeler. The allowance amounts to EUR 40,000 for other members of the Executive Board. In the years 2016, 2015 and in 2014, payments of EUR 40,000 per year were made to Dr. Bernd Schulte and Wolfgang Breme (in 2014: five months pro rata until termination of appointment) respectively. This allowance is part of the total fixed annual salary of the executive board members.

### 4.3.3. Supervisory Board Remuneration

In fiscal year 2016, the remuneration of the Supervisory Board totaled EUR 448,750 (2015: EUR 302,500; 2014: EUR 292,500). The division between the individual members of the Supervisory Board for the years 2014 to 2016 is presented in the table below:

Supervisory Board Member	Year	Fixed	Variable	Attendance Fee	Total
		(EUR)	(EUR)	(EUR)	(EUR)
Kim Schindelhauer <sup>1/2/3/4/5</sup> (Chairman of the Supervisory Board)	2016	75,000	0	100,000	175,000
	2015	75,000	0	18,000	93,000
	2014	75,000	0	16,000	91,000
Prof. Dr. Wolfgang Blättchen <sup>1/4</sup> (Deputy Chairman of the Supervisory Board) (Chairman of the Audit Committee)	2016	37,500	0	72,250	109,750
	2015	37,500	0	24,000	61,500
	2014	37,500	0	24,000	61,500
Dr. Andreas Biagosch <sup>2</sup>	2016	25,000	0	8,000	33,000
	2015	25,000	0	8,000	33,000
	2014	25,000	0	8,000	33,000
Prof. Dr. Petra Denk <sup>2/3</sup> (since May 19, 2011) (Chair of the Technology Committee)	2016	25,000	0	30,000	55,000
	2015	25,000	0	26,000	51,000
	2014	25,000	0	24,000	49,000
Dr. Martin Komischke	2016	25,000	0	0	25,000
	2015	25,000	0	0	25,000
	2014	25,000	0	0	25,000
Prof. Dr. Rüdiger von Rosen <sup>1/3</sup> (Chairman of the Nomination Committee)	2016	25,000	0	26,000	51,000
	2015	25,000	0	14,000	39,000
	2014	25,000	0	8,000	33,000
<b>Total</b>	<b>2016</b>	<b>212,500</b>	<b>0</b>	<b>236,250</b>	<b>448,750</b>
	<b>2015</b>	<b>212,500</b>	<b>0</b>	<b>90,000</b>	<b>302,500</b>
	<b>2014</b>	<b>212,500</b>	<b>0</b>	<b>80,000</b>	<b>292,500</b>

<sup>1)</sup> Member of the Audit Committee

<sup>2)</sup> Member of the Technology Committee

<sup>3)</sup> Member of the Nomination Committee

<sup>4)</sup> Member of the Capital Markets Committee

<sup>5)</sup> Former AIXTRON Executive Board Member

In accordance with the article of association of the company, the annual attendance fee of Prof. Dr. Blättchen in fiscal year 2016 was capped at one-and-a-half times his fixed remuneration. For fiscal years 2015 and 2014, both Mr. Schindelhauer and Mr. Blättchen have received a subsequent payment of EUR 16,000 each.

As in previous years, there were no payments made to any Supervisory Board member for advisory services in fiscal year 2016.

## 5. Opportunities and Risk Report

### 5.1. Opportunities

The development of leading edge complex material deposition technology remains AIXTRON's core competency. It is an area where the Company has developed global leadership positions. AIXTRON Management intends to keep this focus and positioning while at the same time expanding this core know-how into both existing and emerging markets.

AIXTRON remains committed to investing in R&D to maintain and expand the Company's leading technology position e.g. in MOCVD equipment for applications such as optoelectronics including lasers and LEDs, power electronics or next generation logic applications. AIXTRON's enabling technologies to manufacture the devices for these applications are the basis for emerging Megatrends such as Big Data, Cloud Computing, Electric Vehicles, Autonomous Driving or highly efficient Energy Storage. Therefore, AIXTRON expects future growth in all of these areas.

Important fields for AIXTRON are power management devices based on wide band gap materials such as Gallium Nitride (GaN) and Silicon Carbide (SiC). These devices are extremely energy efficient. Such device applications can be found in electric vehicles, transformers, converters as well as in feed-in of renewable energy into the grid and they will be considered for power management on high performance logic chips. AIXTRON expects growth of equipment demand as the penetration of above mentioned devices gain momentum.

AIXTRON continues to pursue the market entry into the large area organic semiconductor application markets with the Company's deposition technology for organic materials, OVPD and PVPD. The exclusively licensed OVPD technology allows a highly efficient deposition of organic material, especially on large area substrates, and offers a number of advantages over the incumbent technologies especially in terms of material consumption. AIXTRON's PECVD technology for thin film encapsulation offers highly flexible and effective barrier films for flexible and rigid organic electronics. Demonstration and qualification efforts are closely linked to the expansion plans of potential customers in this field.

The Company also aims to make further inroads into the research and development community with its PECVD technology to manufacture advanced carbon nanostructures including carbon nanotubes, carbon nanowires and graphene. The potential applications for these materials include, among other things, energy storage, display technologies, semiconductor technologies and composite materials. The installed base of AIXTRON R&D tools and the close collaboration with customers allow the Company to align its roadmaps with the market requirements of this emerging technology. Building on a leading position captured over several years, AIXTRON expects the market opportunity for equipment to expand.

For memory applications, AIXTRON's ALD and CVD deposition tools provide efficient and innovative solutions. AIXTRON sees growth potential with its technologies for memory applications. In addition, based on R&D projects and customer feedback, AIXTRON sees tangible opportunities to further support the miniaturization of logic device structures with the use of compound semiconductor materials produced on AIXTRON's MOCVD tool technology.

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

#### Short-Term

- Further increasing adoption of LEDs and specialty LEDs (in particular Red-Orange-Yellow, UV or IR) for Display and other applications.
- Increased emergence of wide band gap GaN or SiC based devices for energy efficient power management and communications in automotive, consumer electronics and mobile applications.
- Development of next generation NAND and DRAM memory devices.
- Increasing emergence of compound semiconductor based laser devices for ultrafast data transfer and sensors in infrastructure and mobile applications.
- Increasing emergence of compound semiconductor based sensor devices for autonomous driving.

#### Mid- to Long-Term

- Further progress in the development of GaN-on-Silicon LEDs and Wafer Level Packaging.
- Development of new wide-band-gap applications such as RF and System-on-Chip with integrated power management.
- Progress in the development of large area OLED devices requiring efficient deposition technologies.
- Progress in the development of flexible and rigid OLED devices requiring thin-film encapsulation.
- Increased development activity for specialized compound solar cell applications.
- Increasing requirements for High-k and interconnect components, implying a new approach to production technologies.
- Progress in the development of future logic chips applying wide band gap and high electron mobility materials (III-V-on-Silicon).
- Development of applications using Carbon Nanostructures (Carbon Nanotubes, Carbon Nanowires, Graphene).
- Development of alternative LED applications such as Visual Light Communication technology or Micro-LED Displays.

## 5.2. Risk Management

A risk management system has been implemented for monitoring, analyzing, and documenting business risks and measures. Risk and measure reporting is the core component of AIXTRON's strategic risk and opportunity management. In different areas of the company, risk representatives responsible for risk reporting have been appointed.

As an international technology company, AIXTRON is engaged in business operations worldwide and is, consequently, exposed to a variety of risks. The Company may also benefit from the opportunities related to the risks it is exposed to. In order to minimize risks, AIXTRON established an enterprise risk management system that is continuously being adapted to the evolving business environment and business processes.

To minimize risks and to capitalize on opportunities, AIXTRON pursues a forward looking product strategy, by observing current and identifying anticipated future market trends and customer requirements and continuously striving to develop and maintain unique selling propositions related to its technology. This product strategy incorporates measures for honing the Company's profile in its target market, for building new partnerships and alliances, as well as for training third parties engaged to market, sell, and deploy AIXTRON products. In fiscal year 2016, the Company continued to monitor market trends and the activities of its competitors and evaluated market analyses and forecasts produced by leading market research companies. Project management and quality assurance systems are routinely deployed in all areas of product development where risk awareness and evaluation play a crucial role. Therefore, AIXTRON uses systems for project management and quality control in this area.

These measures are accompanied by a training and development program for managers and specialist employees, and by procedures to maintain and expand the necessary infrastructure when required.

AIXTRON deploys accounting, control, and forecasting systems for the global monitoring and management of core enterprise information. Regular reporting processes ensure that information on business and market trends is regularly updated. In addition to annual budget planning, real-time forecasts are used to continuously review and update the Company's plans. As part of the Company's financial control procedures, variances between actual and budget figures are continuously identified and analyzed and serve as basis for corrective measures as necessary.

Furthermore, the Executive Board analyzes the Company's net assets, financial position, and results of operations on a continuous basis. The frequent exchange of knowledge and experiences at all hierarchy levels worldwide ensures the constant and efficient flow of information as well as rapid decision-making.

The Executive Board informs and includes, where required, the Supervisory Board in all key decisions at least once every quarter, and normally at shorter intervals. The Audit Committee of the Supervisory Board meets regularly with the Executive Board to discuss, analyze, and monitor financial issues arising in the course of the Company's business activities. Internal guidelines governing risk management, insider trading, and the disclosure of share price sensitive information ensure compliance with all applicable laws and the implementation of the corporate governance recommendations specified in the German Corporate Governance Code.

The Company's Supervisory Board is informed about the status, plausibility, and further development of the risk management system by the Executive Board on an ongoing basis. In addition, it is the Company's auditor's duty, to inform the Supervisory Board about their audit of the risk management early warning system.

## 5.3. Internal Control over Financial Reporting

AIXTRON's Management is responsible for establishing and maintaining adequate internal control and risk management and for reviewing its continuing effectiveness. Such processes are designed to manage risks and to provide reasonable assurance against material misstatement or loss. Management ensures, to the extent possible, that the system of internal procedures and controls is appropriate to the nature and scale of the Company's activities and that appropriate processes and controls are in place to effectively manage and mitigate strategic, operational, financial and other risks facing the Company. This also includes the centrally monitored compliance to group wide accounting guidelines and valuation principles in financial reporting.

The Company has an ongoing process of identifying, evaluating and managing risk. Management and Audit Committee confirm that necessary actions are being undertaken to eliminate perceived failings or weaknesses identified from these reviews.

Based on the Company's assessment, Management has concluded that AIXTRON's internal control and risk management was effective as of December 31, 2016 to provide reasonable assurance that the system of internal procedures and controls are appropriate and effective. AIXTRON's Management reviewed the results of Management's assessment jointly with the Audit Committee of AIXTRON's Supervisory Board.

## 5.4. Single Risk Factors

Any of the following risks could have a material adverse effect on AIXTRON's results of operations, financial position, net assets, liquidity, cash flows, the market price of its shares and the actual outcome of matters that the forward-looking statements contained in this annual report refer to. The risks described below are not the only ones the Company faces. There may be additional risks AIXTRON is currently unaware of, and risks that are common to most companies including political risks, the risk of force majeure and other unforeseeable events. There may also be risks that AIXTRON now believes are immaterial, but which also may ultimately have a material adverse effect on the Company. For additional information regarding forward-looking statements, see "Forward-looking statements" included in this annual report.



#### 5.4.1. Currency Exchange Risks and Other Financial Risks

The Company's operations are conducted by entities in many countries and a substantial portion of its sales and production costs are denominated in currencies other than the Euro. As a result, fluctuations between the value of the Euro and other major currencies may affect the Company's business as well as the business of AIXTRON's customers and suppliers. In addition, changes in monetary or other policies, including as a result of the regionally unbalanced economic development as well as geopolitical conflicts, would also likely affect foreign currency exchange rates. In order to manage foreign exchange risks, the Company routinely monitors if and to what extent currency hedging instruments should be used and Management actively manages the currency risk of balance sheet items by pursuing an active balancing of assets and liabilities held in foreign currencies. As of December 31, no hedging contracts were in place.

AIXTRON anticipates that international revenues, including revenues from Asia, will continue to account for a significant portion of its revenues. As a result, a significant portion of the Company's revenues will be subject to risks of dealing with customers on a global scale. These risks include changes in foreign laws or regulations, tariffs or trade barriers, military confrontations, political or economic instabilities, managing foreign subsidiary or distributor operations.

AIXTRON conducts business with a large number of customers worldwide and is therefore exposed to the risk of bad debt losses. This potential risk is significantly reduced by down payments, letters of credit or bank guarantees. Further information on this subject is contained in section 17. "Trade receivables and other current assets" of the Notes to the Consolidated Financial Statements for 2016.

Because AIXTRON operates in a number of countries throughout the world, its operating income is subject to taxation in differing jurisdictions and at differing tax rates. AIXTRON seeks to organize its affairs in a tax efficient and balanced manner, taking into account the applicable regulations of the jurisdictions in which it operates. The tax authorities in the jurisdictions in which AIXTRON operates may audit the Company's tax returns and may disagree with the positions taken in those returns which could cause AIXTRON to incur significant legal expenses and divert the Company's management's attention from the operation of its business. An adverse outcome resulting from any settlement or future examination of AIXTRON's tax returns may subject the Company to additional tax liabilities and may adversely affect its effective tax rate. An outside audit is currently being performed by the German tax authorities, which may result in supplementary tax payments.

AIXTRON regularly assesses the financial strength of its banking partners and will take appropriate measures should it detect any significant deterioration or risk.

The Company's need for cash is targeted to be generally provided for, through operating cash flows and, to a smaller extent, through grants. The Company currently commands adequate cash and cash equivalents to meet business needs and carries no debt. However, should low market demand and resulting low revenue levels persist, then this may significantly harm operating results, cash flows as well as cash reserves in the future. If AIXTRON cannot quickly and appropriately realign its business structure in line with adverse conditions, the need for additional external funding may arise. The availability of equity based funding might be negatively influenced by a low share price. If it is not possible to acquire sufficient funding, AIXTRON could be forced to delay or reduce operations. A share price decline may also result in the necessity of an impairment of assets, primarily goodwill. Please refer to Note 12. to the Company's Consolidated Financial Statements "Intangible assets" for more information.

AIXTRON's future budgets for operating expenses, capital expenditures, operating leases and service contracts are based upon the Company's assumptions as to the anticipated market acceptance of its products and other factors. Significant deviations of these assumption could have material adverse effects on the Company.

#### 5.4.2. Company-Specific Risks, Market and Competition Risks

Persistently subdued global economic development or currency fluctuations might adversely affect the business of AIXTRON's customers and suppliers and thus also harm AIXTRON's business development.

The semiconductor industries can be cyclical and thus highly volatile and unpredictable. Although semiconductors are used in many different products, the markets for those products are interrelated to various degrees. The industry has historically experienced sudden changes in supply and demand for semiconductors. The timing, length and severity of these industry cycles are difficult to predict. The cyclical nature of AIXTRON's operations could be influenced and amplified by changes in economic and political conditions. As a result and in addition, persistently subdued market demand for AIXTRON's manufacturing equipment could lead to low order intake and resulting revenue levels. AIXTRON must be able to react quickly to these changes in supply and demand. The described cyclical nature of AIXTRON's customers or supply and demand in the addressed markets with its respective impact on market demand and business operations for AIXTRON may adversely affect AIXTRON's results of operations, financial position, net assets and cash flows. During periods of declining or low demand for semiconductor manufacturing equipment, AIXTRON needs to be able to quickly and effectively align its cost structure with prevailing market conditions, to manage its inventory levels to reduce the possibility of future inventory write-downs resulting from obsolescence. Because a certain proportion of AIXTRON's costs are fixed in the near term, the Company's ability to reduce expenses quickly in response to revenue shortfalls is limited. During periods of rapid growth, AIXTRON's business must be able to acquire and/or develop sufficient manufacturing capacity and inventory to meet customer demand, and to attract, hire, assimilate and retain a sufficient number of qualified people.

AIXTRON's business operates in a highly competitive industry characterized by increasingly rapid technological changes and changes in the competitive environment. If the Company does not develop new products in a timely manner, in response to changing market conditions or customer requirements, it may not be able to compete successfully in this market. AIXTRON's competitive advantage and future success depend on its ability to successfully develop new products and technologies as well as new markets for its products and services. They also depend on the introduction of new products to the marketplace in a timely manner as well as the qualification of new products with its customers and the commencement and adjustment of production to meet customer demands. In addition, AIXTRON's competitors may have greater resources than AIXTRON, or may otherwise be better suited to compete in the Company's markets.

In order to compete, AIXTRON must attract, retain and permanently motivate executives and other key employees, including those in managerial, technical, sales, marketing and support positions. Hiring and retaining qualified executives, scientists, engineers, technical staff and sales representatives are critical to the Company's business, and competition for experienced employees in the semiconductor industry can be intense. To attract, retain and motivate qualified employees, AIXTRON relies heavily on paying cash compensations at market-competitive rates and offering additional incentives and bonus payments. If such cash payments cease to be viewed as a valuable benefit by the Company's key employees, the Company's ability to attract, retain and motivate its employees could be adversely impacted, which could negatively affect its results of operations and/or require AIXTRON to increase the amount it expends on cash and other forms of compensation.

AIXTRON's customer base has been in the past and may in the future be highly concentrated. Orders from a relatively limited number of customers have accounted for, and likely will continue to account for, a substantial portion of the Company's revenues. This may lead to economic setbacks should a principal customer discontinue its relationship with AIXTRON or this may lead to customers to demand pricing and other terms less favorable to the Company.

AIXTRON's ability to increase revenues in the future will also depend upon its ability to obtain new orders from existing or new customers. In addition, because a relatively small number of large manufacturers, many of whom are AIXTRON's customers, dominate the industries in which they operate, it may be especially difficult for the Company to replace these customers if it loses their business. A large portion of orders in AIXTRON's order backlog are orders from its principal customers.

AIXTRON often faces lengthy sales and qualification cycles for its products and customer contracts regularly include demanding technical or other commercial hurdles which have to be met. AIXTRON's products are being tested to determine whether they meet customer or industry specifications. During such a qualification period, AIXTRON invests significant resources and dedicates substantial production capacity to the manufacture of these new products, prior to any commitment to purchase by the prospective customer and without generating meaningful revenues from the qualification process. Therefore in many cases the Company must invest significant time and funds with no assurance that these efforts or expenditures will result in revenues.

Revenues from AIXTRON's systems primarily depend upon the decision of a prospective customer to invest in or upgrade its manufacturing capabilities, which typically involves a significant capital commitment by the customer. AIXTRON often experiences delays in obtaining system orders while customers evaluate and receive internal commercial or technical approvals for the purchase of these systems.

The Company's customers may experience difficulties in acquiring manufacturing facilities or maintaining a sufficient flow of raw materials and components or accessing sufficient cash funding to achieve their increased manufacturing output. Should this occur, customers could request to delay AIXTRON system shipments. These delays may include the time necessary to plan, design or complete a new or expanded semiconductor fabrication facility. In addition, the Company's customers could accelerate or delay expenditures, or they could cancel or reschedule their orders. As a result, AIXTRON must be able to react quickly to these changes in supply and demand. AIXTRON therefore may increase production in anticipation of customer orders that may not materialize. Failure to quickly align the Company's cost structure and manufacturing capabilities with industry fluctuations could lead to significant losses or a failure to capitalize on increased demand opportunities.

To partly protect AIXTRON from negative effects of the cyclicity of the semiconductor markets, AIXTRON outsources a large part of its production to third party suppliers in order to manufacture and obtain many critical components. Many of these components are only available from a limited number of suppliers or, in some cases, even a single supplier. To minimize risks in this area, the company generally dual sources the supply of procured key items. Because of the cost of AIXTRON's systems, the Company generally aims to keep its inventories at minimum levels. AIXTRON generally does not have long-term supply agreements with many of its suppliers. Consequently, the Company could experience significant price increases and/or may not be able to obtain replacement components in a timely manner or at all. In addition, AIXTRON is dependent on a limited number of suppliers. Because AIXTRON often does not account for a significant part of its suppliers' business, the Company may not have access to sufficient capacity from these suppliers in periods of high demand. In addition, AIXTRON risks having important suppliers terminate product lines, change business focus or even go out of business. If AIXTRON were required to change any of its suppliers, it would be required to re-qualify each new supplier. AIXTRON estimates that it could take approximately six to eighteen months to replace suppliers of certain critical components used in its systems. In addition, in connection with third-party manufacturing activities, it is possible that AIXTRON may encounter unforeseen technical complexities that it may be unable to resolve, or that the resolution of such complexities may lead to delays in the implementation of these third-party manufacturing activities.

AIXTRON invests significantly into R&D and AIXTRON's future success depends highly on its ability to translate the knowledge gained from R&D into commercial success. Should this fail or be delayed, then this could result in unplanned, higher costs or the necessity to write down assets.

AIXTRON's competitors may have greater resources than AIXTRON, or may otherwise be better suited to compete in the Company's markets, and AIXTRON's failure to compete successfully with these companies would seriously affect its business.

As a result of doing business internationally, AIXTRON must comply with different laws and regulations. New or changed domestic or foreign laws and regulations may be imposed on AIXTRON. AIXTRON is also subject to export control and economic sanctions laws, which prohibit the shipment of certain products to embargoed or sanctioned countries, governments and persons. Any change in export or import regulations, economic sanctions or related legislation, shift in the enforcement or scope of existing regulations, or change in the countries, governments, persons or technologies targeted by such regulations, could result in decreased use of AIXTRON products by, or in decreased ability to export or sell products to, existing or potential customers with international operations. Any actual or alleged failure to comply with such laws and regulations or any decreased use of AIXTRON products or limitation on the ability to export or sell products may have a material adverse effect on AIXTRON's business, financial condition, results of operations and reputation.

AIXTRON's operating results may fluctuate significantly, which may cause the market price of its ordinary shares to increase or decrease significantly. The timing of an order often depends on the capital expenditure budget cycle of customers. In addition, the time it takes the Company to build a product to customer specifications, which the Company refers to as the build cycle, typically ranges from three to nine months, followed in certain cases by a period of customer acceptance during which the customer evaluates the performance of AIXTRON's system and may potentially reject such system. As a result of the build cycle and evaluation periods, the period between a customer's initial purchase decision and revenue recognition on an order often varies widely, and variations in length of this period can cause further fluctuations in operating results.

AIXTRON's leases may be terminated or the company may be unable to renew our leases on acceptable terms; if AIXTRON decides to relocate, AIXTRON may incur additional costs if AIXTRON terminates a lease.

AIXTRON's businesses use potentially harmful chemicals and other hazardous materials. AIXTRON is subject to environmental risks and regulations which could negatively affect the Company's results of operations and financial condition.

AIXTRON is exposed to risks associated with acquisitions as it may undertake acquisitions of, or significant investments in, other businesses with complementary products, services or technologies. Acquisitions, or other significant investments, may bear risks such as difficulties in integration of the acquired company, lack of synergies, loss of key employees or customers, diversion of management's attention from daily operations, impairment of acquired assets, worse-than-expected performance of acquired companies, increased project related and administrative expenses or declining share price.

AIXTRON may also be subject of being acquired with or without the consent of management. AIXTRON may divest the business as a whole or parts of its business. In addition to some of the acquisition related risks, divestitures could bear the risk of losses on disposal.

Information security risks, data protection breaches, cyber-attacks and other related cyber security issues could disrupt AIXTRON's internal operations, damage the Company's brand and reputation or otherwise harm its business and may incur significant costs to minimize, mitigate or protect against those risks. Cyber security breaches could compromise the security of AIXTRON's data and infrastructure, thereby exposing such information to unauthorized access by third parties.

AIXTRON currently is, was or may become involved in claims, pending or threatened litigation or other legal proceedings. AIXTRON cannot exclude the possibility of infringing upon intellectual property rights of third parties or of itself being held liable for allegedly infringing upon third party intellectual property rights or to breach applicable securities or other laws. The outcome of current, pending and threatened litigation proceedings cannot be predicted with any certainty. Decisions of courts or other authorities as well as settlements may cause significant expenses. AIXTRON may also have to allocate significant Management time and attention while in all cases the company may not be able to prevail in its legal actions.

For more details to the previously mentioned litigation risk, please refer to "3. Report on Post-Balance Sheet Date Events" included in this report.

AIXTRON voluntarily delisted its ADSs from NASDAQ, effective January 9, 2017, and terminated its ADR program, effective February 16, 2017. On January 9, 2017, the Company filed a certification on Form 15F with the SEC to deregister. Under the SEC rules, AIXTRON's SEC reporting obligations under the Exchange Act were immediately suspended upon the filing of the Form 15F and the deregistration is expected to become effective 90 days after the filing of the Form 15F which would be on or about April 9, 2017. Delisting, deregistration and suspending its SEC reporting obligations in the US could negatively affect the liquidity and trading prices of its outstanding ADSs and ordinary shares.

## **5.5. Overall Statement to the Risk Situation**

Neither within fiscal year 2016 nor at the time of writing has the Executive Board identified any risks that could jeopardize the Company's continued existence.

## 6. Report on Expected Developments

### 6.1. Future Market Environment and Opportunities

In their World Economic Outlook Update as of January 2016, the IMF forecasts global growth to increase to 3.4% in 2017 and 3.6% in 2018. Global growth is expected to be supported by economic activity to pick up in pace especially in emerging market and developing economies. At this point in time, AIXTRON does not expect any significant influence on its business development from the global economic environment. However, the possibility of further setbacks to the global economy cannot be ruled out.

Gartner Dataquest estimated (Forecast: Semiconductor Manufacturing Equipment, Worldwide, 4Q16 Update, December 2016) that semiconductor capital spending in 2016 increased to USD 68 billion. In the same report, Gartner forecasts further growth in semiconductor capital spending to USD 70 billion in 2017 and then growing further to USD 73 billion in 2018 (Forecast: Semiconductor Manufacturing Equipment, Worldwide, 4Q16 Update).

In Wafer Fab equipment, the segment where AIXTRON competes, Gartner expects an increase in market size from USD 34 billion in 2016 to USD 36 billion in 2017, growing further to 36.2 billion in 2018.

The demand will primarily depend on the execution of strategic investments and capacity expansion plans. The market will need to increase manufacturing capacity driven by higher demand for optoelectronic applications and wide band gap devices for power management.

According to Gartner, the total silicon power transistor market is expected to grow from USD 8.9 billion to 10.2 billion between 2013 and 2018 (Gartner, April 2014). According to a study from IHS, the market for SiC and GaN Power Electronics devices, which can be produced using AIXTRON equipment, is estimated to generate a volume of USD 1.7 billion by 2021. Estimates of an accessible market size for the respective production equipment are based on internal assessments and are therefore not meaningful at this point in time.

AIXTRON Management believes that the markets AIXTRON addresses with its organic large area OVPD and PVPD deposition technologies as well as with its PECVD thin film encapsulation technology bear growth potential in the mid- to long-term driven by increasing demand for OLED displays. The market volume for OLED devices including OLED TVs are expected by IHS in its OLED Shipment and Forecast Report to grow from approximately USD 14 billion in 2015 to approximately USD 27 billion in 2019. OLED TV panel shipments are expected to increase from 0.9 million shipped units in 2016 to 6.8 million shipped units in 2021 (Display Supply Chain Consultants, January 2017). However, as with all emerging technologies, there is an element of risk associated with the timing of AIXTRON's technology being adopted by the market.

AIXTRON's PECVD technology for the production of carbon nanostructures continues to contribute positively to total revenues but due to its R&D focus, the revenue volumes are comparably low and are expected to remain on low levels in the short term.

Estimates of an accessible OLED or Carbon Nanostructure equipment market size are based on internal assessments and are therefore not disclosed.

The total ALD market of which AIXTRON addresses only a specific niche with its system technologies, was estimated by Gartner Dataquest in its latest forecast of December 2016 (Forecast: Semiconductor Manufacturing Equipment, Worldwide, 4Q16 Update) to be valued at USD 1,028 million for 2016 (2017e: USD 1,129 million; 2018e: USD 1,208 million). Influenced by the production qualification of AIXTRON's QXP tool by two major Asian memory chip manufacturers and by solid demand for NAND-flash memory devices, AIXTRON sees further growth potential with this technology.

In all of its addressed markets, AIXTRON expects future growth as AIXTRON technologies to manufacture Semiconductor devices are the enabling technologies for emerging Megatrends such as Big Data, Cloud Computing, 5G Mobile Networks, Electric Vehicles, Autonomous Driving or highly efficient Energy Storage.

### 6.2. Expected Results of Operations and Financial Position

Following the termination of the planned takeover transaction by a Chinese investor in December 2016, AIXTRON now is focusing on the optimal structure of its technology portfolio as part of its corporate strategy. Against this background, AIXTRON is currently pursuing different options in order to successfully reduce required upfront expenses for the development of future technologies. These options include looking for partners, joint ventures or other alternatives. All these measures are targeted to enable a sustainable return to profitability and to report a positive EBIT for full year 2018.

For Memory and Logic applications, Management expects a significant contribution again in 2017 due to solid growth of NAND-flash memory applications. However, demand development for production equipment for DRAM memory applications is uncertain due to a cautious investment behavior in the DRAM end markets. Investments for TFOS will be aligned with customers' requirements.

Management sees near- to mid-term potential for MOCVD equipment from a continuing penetration of wide band gap GaN- and SiC-based power devices.

In terms of MOCVD equipment for the manufacturing of optoelectronic devices such as red/orange/yellow and specialty LEDs as well as photonics for lasers and sensor applications, Management expects an improving demand.

Based on the existing business structure and the assessment on AIXTRON's current order situation with the internal budget rate of USD/EUR 1.10, Management expects for fiscal year 2017 to achieve revenues and an order intake between EUR 180 million and 210 million.

Due to planned additional upfront expenses for development of future technologies and based on the existing structure, AIXTRON expects to achieve lower EBITDA, EBIT and net result for fiscal year 2017. As previously discussed, AIXTRON is pursuing the options mentioned above in order to return to sustainable profitability. Depending on the execution of above mentioned strategy with its various options and due to the uncertainty of its impact on profit, Management is currently not in the position to offer guidance on EBITDA, EBIT and net result for fiscal year 2017. Management will provide an update on the 2017 earnings outlook as the above mentioned plans materialize.

Influenced by the significant reimbursement of an advance payment in Q1/2016 which will not repeat, AIXTRON expects a further improvement of the free cash flow in 2017.

In addition to above mentioned activities, Management will continue to focus on costs, margin contributions and the allocation of funds and will continuously review the performance and prospects of the Companies' product portfolio.

As in previous years, Management expects that the Company does not require any external bank debt financing in 2017. Furthermore, the Company will retain its strong equity base also in the foreseeable future.

### 6.3. Overall Statement on the Future Development

Due to the Companies' proven ability to develop and market best-in-class enabling deposition equipment for a variety of markets, Management continues to believe in the positive short- mid- and long-term outlook for AIXTRON and its targeted markets.

As at December 31, 2016, AIXTRON had no binding agreements for participation financing, company acquisition or transfers of parts of the Company.

### 7. Information concerning section 315 (4) of the German Commercial Code (HGB) on takeovers

The Company's stated share capital as of December 31, 2016 amounted to EUR 112,804,105 (December 31, 2015: EUR 112,720,355; December 31, 2014: EUR 112,694,555) divided into 112,804,105 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.

The Company 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	2016	Approved	Expiry	2015	2014	2016-2015
(EUR or number of shares)	31-Dec	since	Date	31-Dec	31-Dec	
Issued shares	112,804,105	--	--	112,720,355	112,694,555	83,750
Authorized Capital 2014 - Capital increase for cash or contribution in kind with or without existing shareholders' preemptive rights	45,883,905	14.05.2014	13.05.2019	45,883,905	45,883,905	0
Authorized Capital 2012 - Capital increase for cash with existing shareholders' preemptive rights	10,422,817	16.05.2012	15.05.2017	10,422,817	10,422,817	0
Authorized Capital 2011 - Capital increase for cash or contribution in kind with or without existing shareholders' preemptive rights		--	--	cancelled	cancelled	
Conditional Capital I 2012 - Authorization to potentially issue bonds with warrants and/or convertible bonds in future	40,715,810	16.05.2012	15.05.2017	40,715,810	40,715,810	0
Conditional Capital II 2012 - Stock Options Program 2012	4,208,726	16.05.2012	15.05.2017	4,208,726	4,208,726	0
Conditional Capital II 2007 - Stock Options Program 2007	2,809,738	22.05.2007	31.12.2018	2,872,638	2,890,613	-62,900
Conditional Capital 4 - Stock Options Program 2002	expired	22.05.2002	31.12.2016	463,888	471,713	-
Conditional Capital 2 - Stock Options Program 1999	1,926,005	26.05.1999	31.12.2017	1,926,005	1,926,005	0

In accordance with section 71 (1) no. 8 German Corporations Act, AktG, the Company is authorized until May 13, 2019, with the approval of the Supervisory Board, to purchase its own shares representing an amount of up to EUR 11,262,429 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. 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; §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, 2016, about 17% of AIXTRON shares were held by private individuals, with around 83% held by institutional investors. The largest AIXTRON institutional shareholder was Argonaut Capital Partners LLP (Edinburgh, UK) with around 8% holdings in AIXTRON stock. 100 % of the shares were considered as free float according to Deutsche Börse's definition.

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.

If a change of control situation exists, the individual members of the Executive Board are entitled to terminate their service relationship with AIXTRON with a notice period of three months to the end of the month and to resign from their post on the termination date. Upon termination of the services as a result of a change of control, such member of the Executive Board will receive a severance pay in an amount equal to the fixed and variable compensation expected to be owed by the Company for the remaining term of the service contract, however, not exceeding an amount equal to twice the annual compensation. A change of control situation exists if a third party or a group of third parties who contractually combine their shares in order to act subsequently as a third party, directly or indirectly hold more than 50% of the Company's authorized capital. Apart from the above mentioned, there are no further changes of control provisions.

## 8. Declaration on Corporate Governance according to § 315 para 5 of the German Commercial Code (HGB)

The Declaration on Corporate Governance including the Corporate Governance Report are available on the Company's homepage under [www.aixtron.com/de/investoren/corporate-governance/](http://www.aixtron.com/de/investoren/corporate-governance/).

## 9. Responsibility Statement

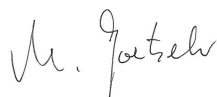
Responsibility Statement required by section 37y no. 1 of the Wertpapierhandelsgesetz (WpHG – German Securities Trading Act) in conjunction with sections 297(2) sentence 4 and 315(1) sentence 6 of the Handelsgesetzbuch (HGB – German Commercial Code) for the Consolidated Financial Statements:

"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 22, 2017

AIXTRON SE

Executive Board



**Martin Goetzeler**  
Chief Executive Officer



**Dr. Bernd Schulte**  
Chief Operating Officer