

As filed with the Securities and Exchange Commission on March 28, 2019

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549  
FORM 20-F**

- (Mark One)
- REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934  
OR  
 ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934  
For the fiscal year ended December 31, 2018  
OR  
 TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934  
OR  
 SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

**Commission file number 001-36130**

**voxeljet AG**

(Exact name of Registrant as specified in its charter)

**Not Applicable**

(Translation of Registrant's name into English)

**Federal Republic of Germany**

(Jurisdiction of incorporation or organization)

**Paul-Lenz Straße 1a**

**86316 Friedberg, Germany**

(Address of principal executive offices)

**Rudolf Franz, Telephone: (49) 821 7843 100, Facsimile: (49) 821 7843 111,**

**Address: Paul-Lenz Straße 1a, 86316 Friedberg, Germany**

(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act.

Title of each class	Name of each exchange on which registered
American Depositary Shares each representing one-fifth of an ordinary share Ordinary shares, €1.00 nominal value per share*	New York Stock Exchange LLC New York Stock Exchange LLC*

\* Not for trading purposes, but only in connection with the registration of American Depositary Shares pursuant to the requirements of the Securities and Exchange Commission.  
Securities registered or to be registered pursuant to Section 12(g) of the Act.

**None**  
(Title of Class)

Securities registered for which there is a reporting obligation pursuant to Section 15(d) of the Act.

**None**  
(Title of Class)

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report.

**Ordinary shares: 4,836,000**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes  No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

Yes  No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes  No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes  No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or an emerging growth company. See definition of "accelerated filer," "large accelerated filer" and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer  Accelerated filer  Non-accelerated filer  Emerging growth company

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards† provided pursuant to Section 13(a) of the Exchange Act.

†The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP  International Financial Reporting Standards as issued by the International Accounting Standards Board  Other

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow.

Item 17  Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes  No

(APPLICABLE ONLY TO ISSUERS INVOLVED IN BANKRUPTCY PROCEEDINGS DURING THE PAST FIVE YEARS)

Indicate by check mark whether the registrant has filed all documents and reports required to be filed by Sections 12, 13 or 15(d) of the Securities Exchange Act of 1934 subsequent to the distribution of securities under a plan confirmed by a court.

Yes  No

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## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This annual report on Form 20-F contains forward-looking statements concerning our business, operations and financial performance and condition as well as our plans, objectives and expectations for our business operations and financial performance and condition. Any statements that are not of historical facts may be deemed to be forward-looking statements. You can identify these forward-looking statements by words such as “believes,” “estimates,” “anticipates,” “expects,” “plans,” “intends,” “may,” “could,” “might,” “will,” “should,” “aims,” or other similar expressions that convey uncertainty of future events or outcomes. Forward-looking statements appear in a number of places throughout this annual report and include statements regarding our intentions, beliefs, assumptions, projections, outlook, analyses or current expectations concerning, among other things, our intellectual property position, results of operations, cash needs, spending of the proceeds from this offering, financial condition, liquidity, prospects, growth and strategies, the industry in which we operate and the trends that may affect the industry or us.

By their nature, forward-looking statements involve risks and uncertainties because they relate to events, competitive dynamics and industry change, and depend on economic circumstances that may or may not occur in the future or may occur on longer or shorter timelines than anticipated. Although we believe that we have a reasonable basis for each forward-looking statement contained in this annual report, we caution you that forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties and other factors that are in some cases beyond our control. All of our forward-looking statements are subject to risks and uncertainties that may cause our actual results to differ materially from our expectations.

Actual results could differ materially from our forward-looking statements due to a number of factors, including, without limitation, risks related to:

- our ability to introduce new 3D printers and related print materials acceptable to the market and to improve the technology and print materials used in our current 3D printers;
- fluctuations in our revenues and operating results;
- the long sales cycle for our products, which makes the timing of our production planning and our revenues difficult to predict;
- our ability to adequately increase demand for our products;
- our ability to significantly increase the number of materials for use in our 3D printers fast enough to meet our business plan;
- our dependence upon sales to certain industries;
- our relationships with suppliers, especially with limited source suppliers of components of and consumables for our products;
- our ability to manage the expansion of our operations effectively in order to achieve our projected levels of growth;
- our ability to manage the expansion of our operations effectively in difficult market environments like UK, India and China;
- our ability to attract and retain key management or other key employees;
- our ability to raise additional capital on attractive terms, or at all, if needed to meet our growth strategy as well as to support the continuation of our operation;
- our ability to maintain sufficient internal controls over financial reporting to comply with Section 404 of the Sarbanes-Oxley Act;

- our ability to mitigate and remediate effectively the material weaknesses in our internal control over financial reporting;
- our ability to obtain patent protection for our products or otherwise protect our intellectual property rights;
- our ability to protect our trade secrets and intellectual property; and
- the other factors listed in “Item 3. Key Information—D. Risk Factors” and elsewhere in this annual report.

Any forward-looking statements that we make in this annual report speak only as of the date of such statement, and we undertake no obligation to update such statements to reflect events or circumstances after the date of this annual report or to reflect the occurrence of unanticipated events. Comparisons of results for current and any prior periods are not intended to express any future trends or indications of future performance, unless expressed as such, and should only be viewed as historical data. You should, however, review the factors and risks we describe in the reports we will file from time to time with the Securities and Exchange Commission, or SEC after the date of this annual report. See “Item 10. Additional Information—H. Documents on Display.”

You should also read carefully the factors described in the “Item 3. Key Information—D. Risk Factors” section of this annual report and elsewhere to better understand the risks and uncertainties inherent in our business and underlying any forward-looking statements. As a result of these factors, we cannot assure you that the forward-looking statements in this annual report will prove to be accurate. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified timeframe, or at all.

### **SERVICE OF PROCESS AND ENFORCEMENT OF CIVIL LIABILITIES**

voxeljet AG is a German stock corporation ( *Aktiengesellschaft* or *AG* ), and its registered offices and substantially all of its assets are located outside of the United States. In addition, most of the members of our Management Board, our Supervisory Board, and our senior management are residents of Germany and jurisdictions other than the United States. As a result, it may not be possible for you to effect service of process within the United States upon these individuals or upon voxeljet AG or to enforce judgments obtained in U.S. courts based on the civil liability provisions of the U.S. securities laws against voxeljet AG in the United States. Awards of punitive damages in actions brought in the United States or elsewhere are generally not enforceable in Germany. In addition, actions brought in a German court against voxeljet AG or the members of its Management Board and Supervisory Board, and its senior management to enforce liabilities based on U.S. federal securities laws may be subject to certain restrictions; in particular, German courts generally do not award punitive damages. Litigation in Germany is also subject to rules of procedure that differ from the U.S. rules, including with respect to the taking and admissibility of evidence, the conduct of the proceedings and the allocation of costs. Proceedings in Germany would have to be conducted in the German language, and all documents submitted to the court would, in principle, have to be translated into German. For these reasons, it may be difficult for a U.S. investor to bring an original action in a German court predicated upon the civil liability provisions of the U.S. federal securities laws against us, the members of our Management Board, Supervisory Board and senior management. In addition, even if a judgment against our company, the non-U.S. members of our Management Board, Supervisory Board or senior management based on the civil liability provisions of the U.S. federal securities laws is obtained, a U.S. investor may not be able to enforce it in U.S. or German courts.

**PART I**

**ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS**

Not applicable.

**ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE**

Not applicable.

**ITEM 3. KEY INFORMATION**

**A. SELECTED FINANCIAL DATA**

We present below our selected historical financial and operating data as of and for each of the years in the five-year period ended December 31, 2018. The financial data have been derived from our financial statements which have been prepared in accordance with IFRS as issued by the IASB and audited in accordance with the standards of the Public Company Accounting Oversight Board (United States). The financial statements as of December 31, 2018 and 2017 and for each of the years in the three-year period ended December 31, 2018 are included elsewhere in this annual report. Our historical results are not necessarily indicative of the financial results to be expected in any future periods. You should read this information in conjunction with “Item 5. Operating and Financial Review and Prospects,” and our financial statements and related notes, each included elsewhere in this annual report.

**Statement of Comprehensive Loss Data:**

	<b>Year Ended December 31,</b>					
	<b>2018</b>	<b>2018</b>	<b>2017<sup>(i)</sup></b>	<b>2016</b>	<b>2015</b>	<b>2014</b>
	<b>(\$ in thousands, except share and per share data)<sup>(i)</sup></b>	<b>(€ in thousands, except share and per share data)</b>				
Revenues	\$ 30,717	€ 26,009	€ 23,178	€ 22,338	€ 24,064	€ 16,163
Cost of sales	19,916	16,864	13,853	15,435	17,147	9,838
Gross profit	10,800	9,145	9,325	6,903	6,917	6,325
Selling expenses	8,659	7,332	6,474	5,312	6,922	3,746
Administrative expenses	6,598	5,587	5,129	4,563	5,178	4,026
Research and development expenses	7,480	6,334	5,528	5,683	5,470	4,027
Other operating expenses	887	751	1,844	3,881	888	101
Other operating income	(1,532)	(1,297)	(1,001)	(1,417)	(2,130)	(1,384)
Operating loss	(11,293)	(9,562)	(8,649)	(11,119)	(9,411)	(4,191)
Finance expense	1,350	1,143	190	230	277	472
Finance income	(2,305)	(1,952)	(365)	(38)	(158)	(299)
Financial result	(955)	(809)	(175)	192	119	173
Loss before income taxes	(10,337)	(8,753)	(8,474)	(11,311)	(9,530)	(4,364)
Income tax expenses (benefit)	13	11	80	2	64	(32)
Loss	\$ (10,350)	€ (8,764)	€ (8,554)	€ (11,313)	€ (9,594)	€ (4,332)
Other comprehensive (income) loss	\$ 211	€ 179	€ (505)	€ (1,111)	€ 237	€ 1
Total comprehensive Loss	\$ (10,562)	€ (8,943)	€ (8,049)	€ (10,202)	€ (9,831)	€ (4,333)
Loss attributable to:						
Owner of the Company	\$ (10,308)	€ (8,728)	€ (8,538)	€ (11,287)	€ (9,594)	€ (4,332)
Non-controlling interests	\$ (43)	(36)	(16)	(26)	--	--
	\$ (10,350)	€ (8,764)	€ (8,554)	€ (11,313)	€ (9,594)	€ (4,332)
Total comprehensive loss attributable to:						
Owner of the Company	\$ (10,519)	€ (8,907)	€ (8,033)	€ (10,176)	€ (9,831)	€ (4,333)
Non-controlling interests	\$ (43)	(36)	(16)	(26)	--	--
	\$ (10,562)	€ (8,943)	€ (8,049)	€ (10,202)	€ (9,831)	€ (4,333)
Loss per share	\$ (2.62)	€ (2.21)	€ (2.29)	€ (3.04)	€ (2.58)	€ (1.22)
Weighted average number of ordinary shares outstanding	3,940,636	3,940,636	3,720,000	3,720,000	3,720,000	3,555,616

<sup>(i)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Part III, Item 18. Financial Statements, Note 6.

**Statement of Financial Position Data:**

	<b>Year Ended December 31,</b>					
	<b>2018</b>	<b>2018</b>	<b>2017<sup>(i)</sup></b>	<b>2016</b>	<b>2015</b>	<b>2014</b>
	<b>(\$ in thousands)<sup>(i)</sup></b>	<b>(€ in thousands)</b>				
Cash and cash equivalents	\$ 8,475	€ 7,402	€ 7,569	€ 7,849	€ 2,086	€ 8,031
Inventories	11,523	10,064	9,259	11,213	7,841	5,247
Fixed assets	31,688	27,675	27,949	23,521	21,383	19,466
Current financial assets	14,776	12,905	14,044	12,579	31,746	41,142
Total assets	79,408	69,352	67,002	62,139	70,120	81,095
Total liabilities	26,194	22,877	23,113	10,603	8,651	9,795
Equity	53,214	46,475	43,889	51,536	61,469	71,300

<sup>(i)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Part III, Item 18. Financial Statements, Note 6.

**Other Data (unaudited):**

	<u>2018</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
	(\$ in thousands, except 3D printers sold and per share data) <sup>(1)</sup>	(€ in thousands, except 3D printers sold and per share data)				
EBITDA <sup>(2)</sup>	\$ (7,152)	€ (6,056)	€ (5,486)	€ (8,577)	€ (6,429)	€ (2,048)
Net loss per ADS <sup>(3)</sup>	\$ (0.52)	€ (0.44)	€ (0.46)	€ (0.61)	€ (0.52)	€ (0.24)
3D printers sold <sup>(4)</sup>	19	19	15	18	18	14

- (1) Amounts in this column are not audited and have been converted from euros to U.S. dollars solely for the convenience of the reader. Balance sheet positions and income statement positions are converted at the exchange rate on December 31, 2018 of \$ 1.1450 and the average exchange rate from January 1 until December 31, 2018 of \$ 1.1810 per euro, respectively.
- (2) We define EBITDA (earnings before interest and other financial result, taxes, depreciation and amortization) as profit (loss) plus income tax expenses (benefit), financial result and depreciation and amortization. Disclosure in this annual report of EBITDA, which is a non-IFRS financial measure, is intended as a supplemental measure of our performance that is not required by, or presented in accordance with, IFRS. EBITDA should not be considered as an alternative to profit (loss) or any other performance measure derived in accordance with IFRS. Our presentation of EBITDA should not be construed to imply that our future results will be unaffected by unusual or non-recurring items. However, senior management believes EBITDA is useful to investors and other users of our financial statements in evaluating operating performance because it provides them with an additional tool to compare business performance across companies and across periods.

The following table reconciles net loss to EBITDA for the periods presented:

	<u>Year Ended December 31,</u>					
	<u>2018</u>	<u>2018</u>	<u>2017 <sup>(i)</sup></u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
	(\$ in thousand) <sup>(A)</sup>	(€ in thousands)				
Net loss	\$ (10,350)	€ (8,764)	€ (8,554)	€ (11,313)	€ (9,594)	€ (4,332)
Income tax expenses (benefit)	13	11	80	2	64	(32)
Financial result	(955)	(809)	(175)	192	119	173
EBIT	(11,293)	(9,562)	(8,649)	(11,119)	(9,411)	(4,191)
Depreciation and amortization	4,141	3,506	3,163	2,542	2,982	2,143
EBITDA	<u>\$ (7,152)</u>	<u>€ (6,056)</u>	<u>€ (5,486)</u>	<u>€ (8,577)</u>	<u>€ (6,429)</u>	<u>€ (2,048)</u>

<sup>(i)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Part III, Item 18. Financial Statements, Note 6.

- (A) Amounts in this column are not audited and have been converted from euros to U.S. dollars solely for the convenience of the reader at an exchange rate of \$ 1.1810 per euro, the average exchange rate from January 1 until December 31, 2018.
- (3) Each ADS represents one-fifth of an ordinary share.
- (4) Includes refurbished 3D printers but does not include test machines or 3D printers involved in sale and leaseback transactions.

**B. CAPITALIZATION AND INDEBTEDNESS**

Not applicable.

**C. REASONS FOR THE OFFER AND USE OF PROCEEDS**

Not applicable.

**D. RISK FACTORS**

**Risks Related to Our Business and Industry**

*We may not be able to introduce new 3D printers and related print materials acceptable to the market or to improve the technology and print materials used in our current 3D printers to meet customer demands.*

Our revenues are derived from the sale new or used and refurbished of 3D printers for, and products manufactured using, additive manufacturing. Our market is subject to innovation and technological change. A variety of technologies compete against one another in our market, which is, in part, driven by technological advances and end-user requirements and preferences, as well as the emergence of new standards and practices. Our ability to compete in the industrial additive manufacturing market depends, in large part, on our success in enhancing and developing new 3D printers, enhancing and adding to our technology and developing and qualifying new materials in which we can print. We believe that to remain competitive we must continuously enhance and expand the functionality and features of our products and technologies. However, we may not be able to:

- enhance our existing products and technologies;
- continue to leverage advances in industrial printhead technology;
- develop new products and technologies that address the increasingly sophisticated and varied needs of prospective end-users, particularly with respect to the physical properties of print materials and other consumables;
- respond to technological advances and emerging industry standards and practices on a cost-effective and timely basis;
- develop products that are cost effective or that otherwise gain market acceptance; or
- adequately protect our intellectual property as we develop new products and technologies.

Even if we successfully enhance our existing 3D printers or create new 3D printers, it is likely that new 3D printers and technologies that we develop will eventually supplant our existing 3D printers or that our competitors will create 3D printers that will replace our 3D printers. As a result, any of our products may be rendered obsolete or uneconomical by our or others' technological advances.

*Our revenues and operating results may fluctuate.*

Our revenues and operating results may fluctuate from quarter-to-quarter and year-to-year and are likely to continue to vary due to a number of factors, many of which are not within our control. A significant portion of our 3D printer orders are typically received during the second and fourth quarters of the fiscal year as a result of the timing of capital expenditures of our customers. Our 3D printers typically are shipped between three and nine months after an order is received. Thus, revenues and operating results for any future period are not predictable with any significant degree of certainty. We also typically experience weaker demand for our 3D printers in the first and third quarters. For these reasons, comparing our operating results on a period-to-period basis may not be meaningful. Until our business grows more significantly, the timing of individual printer sales, because of the cost of our largest printers, can have meaningful effects on and result in fluctuations in our quarterly results. You should not rely on our past results as an indication of our future performance.



Fluctuations in our operating results and financial condition may occur due to a number of factors, including, but not limited to, those listed below and those identified throughout this annual report:

- the degree of market acceptance of our products;
- the mix of machines and products that we sell during any period;
- our long sales cycle including our ability to adapt production to demand;
- the entry of new competitors into our market;
- generally weaker demand for 3D printers in the first and third quarters;
- development of new competitive systems or processes by others;
- changes in our pricing policies or those of our competitors, including our responses to price competition, impacting our ability to realize work in progress at expected gross margins;
- delays between our expenditures to develop and market new or enhanced 3D printers and products and the generation of sales from those products;
- changes in the amount we spend in our marketing and other efforts;
- delays between our expenditures to develop, acquire or license new technologies and processes, and the generation of sales related thereto;
- changes in the cost of satisfying our warranty obligations and servicing our installed base of products;
- our level of research and development activities and their associated costs and rates of success;
- changes in the size and complexity of our organization, including our operations outside of Europe;
- increased expenses in connection with improving our internal control over financial reporting;
- interruptions to or other problems with our website and interactive user interface, information technology systems, manufacturing processes or other operations;
- general economic and industry conditions that affect end-user demand and end-user levels of product design and manufacturing;
- changes in accounting rules and tax laws; and
- changes in interest rates that affect returns on our cash balances and short-term investments.

***Our margins and EBIT may fluctuate.***

Margins in both our Systems and Services segments and our EBIT may fluctuate from quarter-to-quarter and year-to-year and are likely to continue to vary due to a number of factors, many of which are beyond our control, including fluctuations in foreign exchange rates, increased competition and increased expenses. To pursue our growth strategy, we have expanded by establishing operations in different countries. While the subsidiaries in India and China are in the start-up phase, we may not be able to achieve our desired gross margin and EBIT targets for those subsidiaries. This may lead to a weaker margin and EBIT contribution from these subsidiaries to us.

***The long sales cycle for our products makes the timing of our revenues difficult to predict.***

Generally, our 3D printers have a long sales cycle. Because our 3D printers are complex and typically involve significant capital investments by prospective purchasers, we and our sales agents generally need to invest a significant amount of time educating prospective purchasers about the benefits of our products. As a result, before purchasing our products, potential purchasers may spend a substantial amount of time performing internal assessments before making a purchase. This may cause us to devote significant effort in advance of a potential sale without any guarantee of receiving any related revenues. Delays in sales could cause significant variability in our revenues and operating results for any particular period. In addition to that, delays in sales could lead to an increase in work in progress resulting in an allowance for slow-moving inventories.

***Demand for our products may not increase adequately.***

The marketplace for industrial manufacturing is dominated by conventional manufacturing methods that do not involve additive manufacturing technology. We may not be able to develop effective strategies to raise awareness among potential customers of the benefits of our additive manufacturing technology. If additive manufacturing technology does not gain market acceptance as an alternative for industrial manufacturing, or if the marketplace adopts additive manufacturing based on a technology other than our technology, we may not be able to increase or sustain the level of sales of our products and machines and our results of operations would be adversely affected as a result. If we are not able to manage the conversion from work in progress to sales, it could lead to an undesirable increase of inventory resulting in allowance for slow-moving inventory.

We may not be able to significantly increase the number of materials for use in our 3D printers fast enough to meet our business plan, and, if we are successful, we may attract more competitors into our markets, some of which may be much larger than we are. Furthermore, we may not be able to develop our 3D printers to serve in a mass production environment.

Our business plan is dependent in part upon our ability to steadily increase the number of qualified materials in which our 3D printers can print, since this will increase our addressable market. However, qualifying new materials is a complicated engineering task, and there is no way to predict whether, or when, any given material will be qualified. If we cannot hire a sufficient number of skilled people to work on qualifying new materials for printing or if we lack the resources necessary to create a steady flow of new materials, we will not be able to meet our business goals and a competitor may emerge that is better at qualifying new materials, either of which would have an adverse effect on our business results.

If, however, we succeed in qualifying a growing number of materials for use in our 3D printers as well as developing our 3D printers to serve in a mass production environment, that should increase our addressable market, both as to customers and products for customers. However, as we create a larger addressable market, our market may become more attractive to other 3D printing companies or large companies that are not 3D printing companies but which may see an economic opportunity in the markets we have created. Similarly, if our focus on selling large 3D printers and 3D printed products to industrial companies proves successful, an increase in the number of competitors in that particular market is likely to adversely affect our business and financial results.

***Customers may decide to order parts rather than to purchase new or used and refurbished 3D printers. This may result in a significant loss of revenues in the Systems segment.***

Our Systems segment revenues largely depend on our ability to sell new or used and refurbished 3D printers to customers. There may be various reasons why customers may choose to order parts from us rather than to purchase the full 3D printer equipment, such as increased convenience, lower maintenance costs, etc. If there is an increasing trend for our customers to place parts orders in lieu of equipment purchase orders and we are unable to reverse that trend, we may experience significant losses in revenues in the Systems segment, which in turn could adversely affect our business and financial results.

***We are highly dependent upon sales to certain industries.***

Our revenues of machines and products are relatively concentrated in companies in the automotive, foundry, film and entertainment, aerospace and art and architecture industries and those industries' respective suppliers. To the

extent any of these industries experiences a downturn and we are unable to penetrate and expand into other industries, our results of operations may be adversely affected. Additionally, if any of these industries or their respective suppliers or other providers of manufacturing services develop new technologies or alternatives to manufacture the products that are currently manufactured using our 3D printers, it may adversely affect our results of operations.

***If our relationships with suppliers, especially with limited source suppliers of components of and consumables for our products, were to terminate or our manufacturing arrangements were to be disrupted, our business could be adversely affected.***

We purchase components and certain sub-assemblies for our systems and consumables that are used in our print materials from third-party suppliers. While there are several potential suppliers of most of the components and sub-assemblies for our systems, and for most of the consumables for our print materials, we currently choose to use only a limited number of suppliers for several of these components and materials. Our reliance on a limited number of vendors involves a number of risks, including:

- potential shortages of some key components;
- product performance shortfalls, if traceable to particular product components, since the supplier of the faulty component cannot readily be replaced;
- discontinuation of a product on which we rely;
- potential insolvency of these vendors; and
- reduced control over delivery schedules, manufacturing capabilities, quality and costs.

In addition, we require any new supplier to become “qualified” pursuant to our internal procedures. The qualification process involves evaluations of varying durations, which may cause production delays if we were required to qualify a new supplier unexpectedly. We generally assemble our systems based on our internal forecasts and the availability of consumables, assemblies, components and finished goods that are supplied to us by third parties, which are subject to various lead times. If certain suppliers were to decide to discontinue production of an assembly, component or consumable that we use, the unanticipated change in the availability of supplies, or unanticipated supply limitations, could cause delays in, or loss of, sales, increased production or related costs and, consequently, reduced margins, and damage to our reputation. If we are unable to find a suitable supplier for a particular component, consumable or compound, we could be required to modify our existing products to accommodate substitute components, consumables or compounds. In addition, because we use a limited number of suppliers, increases in the prices charged by our suppliers may have an adverse effect on our results of operations, as we may be unable to find a supplier who can supply us at a lower price. As a result, the loss of a limited source supplier could adversely affect our relationships with our customers and our results of operations and financial condition.

***We may not be able to manage the expansion of our operations effectively in order to achieve our projected levels of growth.***

We have expanded our operations significantly in recent periods, including both our German and U.S. operations, and our business plan calls for further expansion over the next several years, including UK, Asia and North America. After the restructuring of our UK operation, we are more focused in addressing the automotive and aerospace industry. Our expansion in Asia is proceeding through our subsidiaries in India and China. The legal, market and cultural environment in both India and China represent challenges for our management. We anticipate that further development of our infrastructure and an increase in the number of our employees will be required to achieve our planned broadening of our product offerings and client base, improvements in our 3D printers and materials used in our 3D printers, and our ongoing international growth. In particular, we must increase our marketing and services staff to support new marketing and service activities and to meet the needs of both new and existing customers. Our ability to successfully increase our marketing efforts is not guaranteed, and if we are not able to successfully increase our marketing efforts, we may not be able to grow our business as intended. Our future success will depend in part upon the ability of our management to manage our growth effectively. If our management is unsuccessful in meeting these challenges, we may not be able to achieve our anticipated level of growth, which would adversely affect our results of operations.

***Our operations could suffer if we are unable to attract and retain key management or other skilled employees.***

Our success depends upon the continued service and performance of our senior management and other key personnel. Our senior management team is critical to the management of our business and operations, as well as to the development of our strategy. The loss of the services of any members of our senior management team could delay or prevent the successful implementation of our growth strategy, or the commercialization of new applications for our 3D printers or other products, or could otherwise adversely affect our ability to manage our company effectively and carry out our business plan. Members of our senior management team may resign at any time. High demand exists for senior management and other key personnel in the additive manufacturing industry, and there can be no assurance that we will be able to retain such personnel. We do not carry key-man insurance on any member of our senior management team.

Our growth and success will also depend on our ability to attract and retain additional highly-qualified scientific, technical, sales, managerial and finance personnel. We have experienced and expect to continue to experience intense competition for qualified personnel. While we intend to continue to provide competitive compensation packages to attract and retain key personnel, some of our competitors for these employees have greater resources and more experience, making it difficult for us to compete successfully for key personnel. If we cannot attract and retain sufficiently qualified technical employees for our research and development and manufacturing operations, we may be unable to develop and commercialize new products or new applications for existing products. Furthermore, possible shortages of skilled personnel, including engineers, in the regions surrounding our European facilities as well as our facilities in China and India could require us to pay more to hire and retain skilled personnel, thereby increasing our costs.

***We may need to raise additional capital from time to time in order to meet our growth strategy as well as to support the continuation of our operation and may be unable to do so on attractive terms, or at all.***

We intend to continue to make investments to support the growth of our business and may require additional funds to respond to business challenges, including the need to implement our growth strategy, increase market share in our current markets or expand into other markets, or broaden our technology, intellectual property or service capabilities. Accordingly, we may require additional investments of capital from time to time, and our existing sources of cash and any funds generated from operations may not provide us with sufficient capital. For various reasons, including any noncompliance with existing or future lending arrangements, additional financing, including raising capital by issuing equity and lease financing for sale and leaseback transactions, may not be available when needed, or may not be available on terms favorable to us. If we fail to obtain adequate capital on a timely basis or if capital cannot be obtained on terms satisfactory to us, we may not be able to achieve our planned rate of growth, which will adversely affect our results of operations.

***We need certain commercial success of the financed research and development project.***

We entered into an investment loan commitment of a total of € 25.0 million with the European Investment Bank. This loan commitment is guaranteed by European Union under the European Fund for Strategic Investments and is limited to 50% of the total cost of a research and development project. The first loan tranche A of € 10.0 million was already disbursed, further € 15.0 million disbursement of tranches B and C depend on sales and EBITDA performance targets. The scheduled repayment of any disbursed loan tranches including interest will depend on the success of the financed research and development project.

***We face significant competition in many aspects of our business, which could cause our revenues and gross profit margins to decline. Competition could also cause us to reduce sales prices or to incur additional marketing or production costs, which could result in decreased revenue, increased costs and reduced margins.***

We compete for customers with a wide variety of producers of equipment for models, prototypes, other 3D objects and end-use parts as well as producers of print materials and services for this equipment. Some of our existing and potential competitors are researching, designing, developing and marketing other types of competitive equipment, print materials and services. Many of these competitors have financial, marketing, manufacturing, distribution and other resources that are substantially greater than ours.

We also expect that future competition may arise from the development of allied or related techniques for equipment and print materials that are not encompassed by our patents, from the issuance of patents to other companies

that may inhibit our ability to develop certain products, from our entry into new geographic markets and industries and from improvements to existing print materials and equipment technologies. In addition, a number of companies have announced beginning production of 3D printers, which will further enhance the competition we face.

We intend to continue to follow a strategy of continuing product development to enhance our position to the extent practicable. We cannot assure you that we will be able to maintain our current position in the field or continue to compete successfully against current and future sources of competition. If we do not keep pace with technological change and introduce new products, our revenues and demand for our products may decrease.

If we are not able to convert our work in progress into sales, it could lead to an undesirable increase of inventory and consequently to an allowance for slow-moving inventory.

***Our operations outside of Germany subject us to various risks, and our failure to manage these risks could adversely affect our results of operations.***

Our business is subject to certain risks associated with doing business globally. Our sales outside of Germany represented 75%, 75%, and 73% of our total sales in 2018, 2017, and 2016, respectively. We currently have subsidiaries in China, India, the UK and the United States. One of our growth strategies is to further pursue opportunities for our business in several areas around the world, both inside and outside of Germany and Europe, any or all of which could be adversely affected by the risks set forth below. Accordingly, we face significant operational risks as a result of doing business internationally, such as:

- fluctuations in foreign currency exchange rates;
- potentially longer sales and payment cycles;
- potentially greater difficulties in collecting accounts receivable;
- potentially adverse tax consequences;
- challenges in providing solutions across a significant distance, in different languages and among different cultures;
- different, complex and changing laws governing intellectual property rights, sometimes affording reduced protection of intellectual property rights in certain countries;
- difficulties in staffing and managing foreign operations, particularly in new geographic locations;
- restrictions imposed by local labor practices and laws on our business and operations;
- rapid changes in government, economic and political policies and conditions, political or civil unrest or instability, terrorism or epidemics and other similar outbreaks or events;
- operating in countries with a higher incidence of corruption and fraudulent business practices;
- seasonal reductions in business activity in certain parts of the world, particularly during the summer months in Europe;
- costs and difficulties of customizing products for foreign countries;
- compliance with a wide variety of complex foreign laws, treaties and regulations;
- transportation delays;
- tariffs, trade barriers and other regulatory or contractual limitations on our ability to sell or develop our products in certain foreign markets; and

- becoming subject to the laws, regulations and court systems of multiple jurisdictions.

Our failure to manage the market and operational risks associated with our international operations effectively could limit the future growth of our business and adversely affect our results of operations.

***Our international operations pose currency risks, which may adversely affect our operating results and net income.***

Our operating results may be affected by volatility in currency exchange rates and our ability to effectively manage our currency transaction risks. Currency exchange rate fluctuations have had an impact on our results because voxeljet AG provided intercompany loans to its subsidiaries in foreign currency. As we realize upon our strategy to expand internationally, our exposure to currency risks will increase. We do not manage our foreign currency exposure in a manner that would eliminate the effects of changes in foreign exchange rates. Therefore, changes in exchange rates between these foreign currencies and the euro will affect our revenues, cost of goods sold, and operating margins, and could result in exchange losses in any given reporting period.

We incur currency transaction risks whenever we enter into either a purchase or a sale transaction using a different currency from the currency in which we report revenues. In such cases we may suffer an exchange loss because we do not currently engage in currency swaps or other currency hedging strategies to address this risk.

Given the volatility of exchange rates, we can give no assurance that we will be able to effectively manage our currency transaction risks or that any volatility in currency exchange rates will not have an adverse effect on our results of operations.

***We may engage in future acquisitions that could disrupt our business, cause dilution to our shareholders and harm our financial condition and operating results.***

While we currently have no specific plans to acquire any other businesses, we may, in the future, engage in joint ventures with or make acquisitions of, or investments in, companies that we believe have products or capabilities that are a strategic or commercial fit with our current business or otherwise offer opportunities for our company. In connection with these acquisitions or investments, we may:

- issue ADSs or other forms of equity that would dilute our existing shareholders' percentage of ownership;
- incur debt and assume liabilities; and
- incur amortization expenses related to intangible assets or incur large and immediate write-offs.

We may not be able to complete future acquisitions on favorable terms, if at all. If we do complete an additional acquisition, we cannot assure you that it will ultimately strengthen our competitive position or that it will be viewed positively by customers, financial markets or investors. Furthermore, future acquisitions could pose numerous additional risks to our operations, including:

- problems integrating the purchased business, products or technologies;
- challenges in achieving strategic objectives, cost savings and other anticipated benefits;
- increases to our expenses;
- the assumption of significant liabilities that exceed the limitations of any applicable indemnification provisions or the financial resources of any indemnifying party;
- inability to maintain relationships with key customers, vendors and other business partners of the acquired businesses;
- diversion of management's attention from their day-to-day responsibilities;

- difficulty in maintaining controls, procedures and policies during the transition and integration;
- entrance into marketplaces where we have no or limited prior experience and where competitors have stronger marketplace positions;
- potential loss of key employees, particularly those of the acquired entity

***Global economic, political and social conditions have adversely impacted our sales and may continue to do so.***

The uncertain direction and relative strength of the global economy, difficulties in the financial services sector and credit markets, continuing geopolitical uncertainties and other macroeconomic factors all affect spending behavior of potential end users of our products. The prospects for economic growth in Europe, the United States, India, China and other countries remain uncertain and may cause end users to further delay or reduce technology purchases. In particular, a substantial portion of our sales are made to customers in countries in Europe, which has experienced a significant economic crisis beginning in 2007.

For example, in June 2016, the UK held a non-binding advisory referendum in which voters voted for the UK to exit the EU ("Brexit"). The referendum has created significant uncertainty about the future relationship between the UK and the EU. Political or geographical events, such as Brexit, or diplomatic tensions could result in changes in trade policy, taxes, market volatility or currency exchange rate fluctuations, and resulting uncertainty in the economy and markets that could have a long-term adverse impact on our results and financial condition, particularly as a result of increased trade barriers in the form of customs duties in relation to the European single market. In extreme cases, we could experience interruptions in production due to the processing of customs formalities or reduced customer spending in the wake of weaker economic performance. If global economic conditions remain volatile for a prolonged period or if European economies experience further disruptions, our results of operations could be adversely affected.

***Failure to comply with the U.S. Foreign Corrupt Practices Act or other applicable anti-corruption legislation could result in fines, criminal penalties and an adverse effect on our business.***

We operate in a number of countries throughout the world, including countries known to have a reputation for corruption. We are committed to doing business in accordance with applicable anti-corruption laws. We are subject, however, to the risk that our officers, directors, employees, agents and collaborators may take action determined to be in violation of such anti-corruption laws, including the U.S. Foreign Corrupt Practices Act of 1977, the U.K. Bribery Act 2010 and the European Union Anti-Corruption Act, as well as trade sanctions administered by the Office of Foreign Assets Control and the U.S. Department of Commerce. Any such violation could result in substantial fines, sanctions, civil and/or criminal penalties or curtailment of operations in certain jurisdictions, and might adversely affect our results of operations. In addition, actual or alleged violations could damage our reputation and ability to do business.

***Our indebtedness could adversely affect our financial condition.***

We have a total debt of € 17.2 million outstanding as of December 31, 2018 out of which €10 million is borrowed from the European Investment Bank (EIB). We are obliged to pay a Performance Participation Interest (PPI) on an increase of the market price of our shares. Payment of this PPI to EIB may adversely affect our financial condition and have a significant negative impact on our cash flows.

***We incur significant costs in our efforts to remediate material weaknesses.***

As of December 31, 2018, we did not maintain an effective control environment. Material weaknesses and control deficiencies were identified in our internal controls over financial reporting. We have developed and are in the process of implementing various measures in connection with our remediation of the material weaknesses identified in our ongoing efforts to improve our internal control over financial reporting. We will continue to expend significant financial and information-technology resources to remediate these material weaknesses and deficiencies. The process of remediating these material weaknesses and deficiencies may divert the attention of management and other resources from our ongoing business, and this remediation process, if we are successful at all, may require several years to complete.



***We rely on our information technology systems to manage numerous aspects of our business and customer and supplier relationships, and a disruption of these systems could adversely affect our results of operations.***

We rely on our information technology, or IT, systems to manage numerous aspects of our business and provide analytical information to management. Our IT systems allow us to efficiently purchase products from our suppliers, provide procurement and logistic services, ship products to our customers on a timely basis, maintain cost-effective operations and provide service to our customers. Our IT systems are an essential component of our business and growth strategies, and a disruption to our IT systems could significantly limit our ability to manage and operate our business efficiently. In 2018, we did not have effective general information technology general controls (GITCs) over our information technology system that supports the Company's financial reporting processes to ensure that information used in financial reporting is timely, current, accurate, complete, accessible, protected and verifiable and retained, specifically inappropriate user creation and authorization assignment and ineffective program change management due to lack of proper documentation and approval. Accordingly, automated process-level controls and manual controls that are dependent upon the completeness and accuracy of information derived from IT systems are also determined to be ineffective. Additionally, the Company did not have effective end-user computing controls over manual spreadsheets used in the financial reporting process. Further, our systems may be vulnerable to, among other things, damage and interruption from power loss, including as a result of natural disasters, computer system and network failures, loss of telecommunication services, operator negligence, loss of data, security breaches, computer viruses and other disruptive events. Any such disruption could adversely affect our reputation, brand and financial condition.

***Defects in new products or in enhancements to our existing products that give rise to product returns or warranty or other claims could result in material expenses, diversion of management time and attention, and damage to our reputation.***

Our 3D printing systems may contain undetected defects or errors when first introduced or as enhancements are released that, despite testing, are not discovered until after a system has been used. This could result in delayed market acceptance of those systems or claims from sales agents, end-users or others, which may result in litigation, increased end-user service and support costs and warranty claims, damage to our reputation and business, or significant costs to correct the defect or error. We may from time to time become subject to warranty or product liability claims related to product quality issues that could lead us to incur significant expenses.

***We could face liability if our 3D printers are used by our customers to print dangerous objects.***

Customers may use our 3D printers to print parts that could be used in a harmful way or could otherwise be dangerous. For example, there have been news reports that 3D printers were used to print guns or other weapons. We have little, if any, control over what objects our customers print using our 3D printers, and it may be difficult, if not impossible, for us to monitor and prevent customers from printing weapons with our 3D printers. While we have never printed weapons in any of our service centers, there can be no assurance that we will not be held liable if someone were injured or killed by a weapon printed by a customer using one of our 3D printers.

***A loss of a significant number of our sales agents would impair our ability to sell our products and services and could reduce our revenues and adversely impact our operating results.***

We expect a significant portion of our sales of our products to be made with the assistance of our network of sales agents. We rely heavily on these sales agents to facilitate sales of our products to end-users in their respective geographic regions. Furthermore, we rely on sales agents to service our products. These sales agents are generally not precluded from selling our competitors' products in addition to ours. In addition, they may not be effective in selling our products or servicing our end-users. Further, if a significant number of these sales agents were to terminate their relationships with us or otherwise fail or refuse to facilitate sales of our products, we may not be able to find replacements that are as qualified or as successful. If these sales agents do not perform as anticipated or if we are unable to find qualified and successful replacements, our sales will suffer, which would have a material adverse effect on our revenues and operating results.



***Workplace accidents or environmental damage could result in substantial remedial obligations and damage to our reputation.***

Accidents or other incidents that occur at our facilities or involve our personnel or operations could result in claims for damages against us. In addition, in the event we are found to be financially responsible, as a result of environmental or other laws or by court order, for environmental damages alleged to have been caused by us or occurring on our premises, we could be required to pay substantial monetary damages or undertake expensive remedial obligations. The amount of any costs, including fines or damages payments that we might incur under such circumstances could substantially exceed any insurance we have to cover such losses. Any of these events, alone or in combination, could have a material adverse effect on our business, financial condition and results of operations and could adversely affect our reputation.

***Our operations are subject to environmental laws and other government regulations which could result in liabilities in the future.***

We are subject to domestic and foreign environmental laws and regulations governing our operations, including, but not limited to, emissions into the air and water and the use, handling, disposal and remediation of hazardous substances. A certain risk of environmental liability is inherent in our production activities. Under certain environmental laws, we could be held solely or jointly and severally responsible, regardless of fault, for the remediation of any hazardous substance contamination at our facilities and at facilities where our products are used and the respective consequences arising out of human exposure to such substances or other environmental damage. We may not have been and may not be at all times in complete compliance with environmental laws, regulations and permits, and the nature of our operations exposes us to the risk of liabilities or claims with respect to environmental and worker health and safety matters. If we violate or fail to comply with environmental laws, regulations and permits, we could be subject to penalties, fines, restrictions on operations or other sanctions, and our operations could be interrupted.

The cost of complying with current and future environmental, health and safety laws applicable to our operations, or the liabilities arising from past releases of, or exposure to, hazardous substances, may result in future expenditures. Any of these developments, alone or in combination, could have a material adverse effect on our business, financial condition and results of operations.

***We may not have adequate insurance for potential liabilities, including liabilities arising from litigation.***

In the ordinary course of business, we have been, and in the future may be, subject to various product and non-product related claims, lawsuits and administrative proceedings seeking damages or other remedies arising out of our commercial operations, including litigation related to defects in our products. We maintain insurance to cover our potential exposure for most claims and losses. However, our insurance coverage is subject to various exclusions, self-retentions and deductibles, may be inadequate or unavailable to protect us fully, and may be cancelled or otherwise terminated by the insurer. Furthermore, we face the following additional risks related to our insurance coverage:

- we may not be able to continue to obtain insurance coverage on commercially reasonable terms, or at all;
- we may be faced with types of liabilities that are not covered under our insurance policies, such as environmental contamination or terrorist attacks, and that exceed any amounts that we may have reserved for such liabilities;
- the amount of any liabilities that we may face may exceed our policy limits; and
- we may incur losses resulting from the interruption of our business that may not be fully covered under our insurance policies.

Even a partially uninsured claim of significant size, if successful, could have a material adverse effect on our business, financial condition, results of operations and liquidity. However, even if we successfully defend ourselves against any such claim, we could be forced to spend a substantial amount of money in litigation expenses, our management could be required to spend valuable time defending these claims and our reputation could suffer, any of which could adversely affect our results of operations.

***If our manufacturing facility or any of our on-demand parts service centers are disrupted, sales of our products may be affected, which could result in loss of revenues and unforeseen costs.***

We manufacture our machines at our facility in Germany. We currently operate on-demand parts service centers located in Germany, the United Kingdom, the United States, China and plan to operate in other locations in the future. If the operations of these facilities are materially disrupted, whether by natural disasters, demonstrations, acts of terror, or otherwise, we would be unable to fulfill customer orders for the period of the disruption, we would not be able to recognize revenues on orders, we could suffer damage to our reputation, and we might need to modify our standard sales terms to secure the commitment of new customers during the period of the disruption and perhaps longer. Depending on the cause of the disruption, we could incur significant costs to remedy the disruption and resume product shipments. Such a disruption could have an adverse effect on our results of operations.

***We may have exposure to greater than anticipated tax liabilities which could adversely affect our operating results.***

Our future income taxes could be adversely affected by changes in tax laws, regulations, accounting principles or interpretations thereof, in jurisdictions around the world. In addition, there is a risk that amounts paid or received in transactions between us and one of our international subsidiaries could be deemed for transfer pricing purposes to be lower or higher than we previously recognized or expected to recognize, or that distributions to us from one of our international subsidiaries could be subject to withholding tax. Our determination of our tax liability is always subject to review by applicable tax authorities. Any negative outcome of such a review could have an adverse effect on our operating results and financial condition. In addition, the determination of our worldwide provision for income taxes and other tax liabilities requires significant judgment, and there are many transactions and calculations where the ultimate tax determination is uncertain. Although we believe our estimates are reasonable, the ultimate tax outcome may differ from the amounts recorded in our financial statements and could adversely affect our operating results.

### **Risks Related to Our Intellectual Property**

***If we are unable to obtain patent protection for our products or otherwise protect our intellectual property rights, our business could suffer.***

We rely on a combination of patents, trademarks, trade secrets and confidentiality agreements and other contractual arrangements with our employees, end-users and others to maintain our competitive position. Our success depends, in part, on our ability to obtain patent protection for or maintain as trade secrets our proprietary products, technologies and inventions and to maintain the confidentiality of our trade secrets and know-how, operate without infringing upon the proprietary rights of others and prevent others from infringing upon our business proprietary rights.

Despite our efforts to protect our proprietary rights, it is possible that competitors or other unauthorized third parties may obtain, copy, use or disclose our technologies, inventions, processes or improvements. We cannot assure you that any of our existing or future patents or other intellectual property rights will be enforceable, will not be challenged, invalidated or circumvented, or will otherwise provide us with meaningful protection or any competitive advantage. In addition, our pending patent applications may not be granted, and we may not be able to obtain foreign patents or elect to file applications corresponding to our U.S. and E.U. patents. The laws of certain countries outside the United States and European Union may not provide the same level of patent protection as in the United States and the European Union, so even if we assert our patents or obtain additional patents in countries outside of the United States and the European Union, effective enforcement of such patents may not be available. If our patents do not adequately protect our technology, our competitors may be able to offer additive manufacturing systems or other products similar to ours. Our competitors may also be able to develop similar technology independently or design around our patents, and we may not be able to detect the unauthorized use of our proprietary technology or take appropriate steps to prevent such use. Any of the foregoing events would lead to increased competition and lower revenues or gross margins, which could adversely affect our operating results.

***We may not be able to protect our trade secrets and intellectual property.***

While some of our technology is licensed under patents belonging to others or is covered by process patents which are owned or applied for by us, much of our key technology is not protected by patents. Furthermore, patents are jurisdictional in nature and therefore only protect us in certain markets, rather than globally. In particular, in fast-growing markets such as China and India, our technology is not protected by patents. We have devoted substantial

resources to the development of our technology, trade secrets, know-how and other unregistered proprietary rights. While we enter into confidentiality and invention assignment agreements intended to protect such rights, such agreements can be difficult and costly to enforce or may not provide adequate remedies if violated. Such agreements may be breached and confidential information may be willfully or unintentionally disclosed, or our competitors or other parties may learn of the information in some other way. Since we cannot legally prevent one or more other companies from developing similar or identical technology to our unpatented technology, it is likely that, over time, one or more other companies may be able to replicate our technology, thereby reducing our technological advantages. If we do not protect our technology or are unable to develop new technology that can be protected by patents or as trade secrets, we may face increased competition from other companies, which may adversely affect our results of operations.

***We enjoy license rights and exclusivity of certain patents and intellectual property and cannot adequately estimate the effects of their expiration upon the entrance or advancement of competitors into the additive manufacturing industrial market.***

We have exclusive and non-exclusive license rights to certain patents that we utilize in the industrial market. Some of these patents have already expired, and others will expire within the next one to three years. We cannot adequately estimate the effect that the expiration of these patents will have upon the entrance or advancement of other additive manufacturing manufacturers into the industrial market. See “Item 4. Information on the Company—B. Business Overview—Intellectual Property.”

***We may be subject to claims alleging patent infringement.***

Our products and technology, including the technology that we license from others, may infringe the intellectual property rights of third parties. Patent applications in the United States and most other countries are confidential for a period of time until they are published, and the publication of discoveries in scientific or patent literature typically lags actual discoveries by several months or more. As a result, the nature of claims contained in unpublished patent filings around the world is unknown to us, and we cannot be certain that we were the first to conceive inventions covered by our patents or patent applications or that we were the first to file patent applications covering such inventions. Furthermore, it is not possible to know in which countries patent holders may choose to extend their filings under the Patent Cooperation Treaty or other mechanisms. In addition, we may be subject to intellectual property infringement claims from individuals, vendors and other companies, including those that are in the business of asserting patents, but are not commercializing products in the field of 3D printing. Any claims that our products or processes infringe the intellectual property rights of others, regardless of the merit or resolution of such claims, could cause us to incur significant costs in responding to, defending and resolving such claims, and may prohibit or otherwise impair our ability to commercialize new or existing products. Any infringement by us or our licensors of the intellectual property rights of third parties may have a material adverse effect on our business, financial condition and results of operations.

Third-party claims of intellectual property infringement successfully asserted against us may require us to redesign infringing technology or enter into costly settlement or license agreements on terms that are unfavorable to us, prevent us from manufacturing or licensing certain of our products, subject us to injunctions restricting our sale of products and use of infringing technology, cause severe disruptions to our operations or the markets in which we compete, impose costly damage awards or require indemnification of our sales agents and end-users. In addition, as a consequence of such claims, we may incur significant costs in acquiring the necessary third-party intellectual property rights for use in our products or developing non-infringing substitute technology. Any of the foregoing developments could seriously harm our business.

***We may incur substantial costs enforcing or acquiring intellectual property rights and defending against third-party claims as a result of litigation or other proceedings.***

In connection with the enforcement of our intellectual property rights, opposing third parties from obtaining patent rights or disputes related to the validity or alleged infringement of our or third-party intellectual property rights, including patent rights, we have been and may in the future be subject or party to claims, negotiations or complex, protracted litigation. Intellectual property disputes and litigation, regardless of merit, can be costly and disruptive to our business operations by diverting attention and energies of management and key technical personnel, and by increasing our costs of doing business. We may not prevail in any such dispute or litigation, and an adverse decision in any legal action involving intellectual property rights, including any such action commenced by us, could limit the scope of our

intellectual property rights and the value of the related technology. While we strive to avoid infringing the intellectual property rights of third parties, we cannot provide any assurances that we will be able to avoid any infringement claims.

***Obtaining and maintaining our patent protection depends on compliance with various procedural, documentary, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.***

Periodic maintenance fees on any issued patent are due to be paid to the U.S. Patent and Trademark Office, or USPTO, and foreign patent agencies in several stages over the lifetime of the patent. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Non-compliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. If we or our exclusive licensors fail to maintain the patents and patent applications covering our products and processes, our competitive position would be adversely affected.

***We may be subject to claims that our employees have wrongfully used or disclosed alleged trade secrets of their former employers.***

Certain of our past and present employees were previously employed at other additive manufacturing companies, including our competitors or potential competitors. Some of these employees executed proprietary rights, non-disclosure and non-competition agreements in connection with such previous employment. Although we try to ensure that our employees do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or these employees have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such employee's former employer. We are not aware of any threatened or pending claims related to these matters, but in the future litigation may be necessary to defend against such claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable personnel or intellectual property rights. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management. As we expand our operations into the United States and elsewhere, we may face similar claims with regard to our future employees in these countries.

***Certain of our employees and patents are subject to German law.***

The majority of our employees work in Germany and are subject to German employment law. Ideas, developments, discoveries and inventions made by such employees and consultants are subject to the provisions of the German Act on Employees' Inventions ( *Gesetz über Arbeitnehmererfindungen* ), which regulates the ownership of, and compensation for, inventions made by employees. We face the risk that disputes can occur between us and our employees or ex-employees pertaining to alleged non-adherence to the provisions of this act that may be costly to defend and take up our management's time and efforts whether we prevail or fail in such dispute. In addition, under the German Act on Employees' Inventions, certain employees retained rights to patents they invented or co-invented prior to 2009. Although most of these employees have subsequently assigned their interest in these patents to us, there is a risk that the compensation we provided to them may be deemed to be insufficient and we may be required under German law to increase the compensation due to such employees for the use of the patents. In those cases where employees have not assigned their interests to us, we may need to pay compensation for the use of those patents. If we are required to pay additional compensation or face other disputes under the German Act on Employees' Inventions, our results of operations could be adversely affected.

***If we fail to comply with our obligations under our intellectual property-related agreements or if we receive an adverse court decision in a lawsuit regarding these agreements, we could lose rights that are important to our business or be subject to restrictions on the conduct of our business.***

We have license and co-ownership agreements with respect to certain intellectual property that is important to our business with both Z Corp and The ExOne Company, or ExOne, respectively, that impose restrictions on our use of certain intellectual property. We are party to other intellectual property-related agreements that also are important to our

business. Disputes may arise between the counterparties to these agreements and us that could result in termination of these agreements, costly litigation or arbitration that diverts management's attention and company resources, regulatory review or restrictions on the conduct of our business. If we fail to comply with our obligations under our intellectual property-related agreements, or receive an adverse court decision in a lawsuit regarding these agreements, the counterparties may have the right to terminate these agreements or sue us for damages or equitable remedies, including injunctive relief. Termination of these agreements, the reduction or elimination of our rights under these agreements, or the imposition of restrictions under these agreements may result in our having to negotiate new or reinstated licenses with less favorable terms, or to cease commercialization of licensed technology and products. This could materially adversely affect our business. In March 2018, ExOne GmbH, a subsidiary of ExOne, notified us of their intent not to pay their annual license fees under an existing intellectual property-related agreement and asserted their rights to claim damages pursuant to an alleged material breach of the agreement. While we dispute these claims, the matter could result in one or more of the risks discussed herein.

***Certain technologies and patents have been developed with partners and we may face restrictions on this jointly-developed intellectual property.***

We have entered into cooperation agreements with a number of industrial and commercial partners, as well as university partners. We have, in some cases individually and in other cases along with our partners, filed for patent protection for a number of technologies developed under these agreements and may in the future file for further intellectual property protection and/or seek to commercialize such technologies. Under some of these agreements, certain intellectual property developed by us and the relevant partner may be subject to joint ownership by us and the partner and our commercial use of such intellectual property may be restricted, or may require written consent from, or a separate agreement with, the partner. In other cases, we may not have any rights to use intellectual property solely developed and owned by the partner. If we cannot obtain commercial use rights for such jointly-owned intellectual property or partner-owned intellectual property, our future product development and commercialization plans may be adversely affected.

**Risks related to our ADSs**

***The price of our ADSs may fluctuate significantly.***

The stock market generally, including our ADSs, has experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of listed companies. Broad market and industry factors may negatively affect the market price of our ADSs, regardless of our actual operating performance. The market price and liquidity of the market for our ADSs may fluctuate and may be significantly affected by numerous factors, some of which are beyond our control. These factors include:

- significant volatility in the market price and trading volume of securities of companies in our sector, which is not necessarily related to the operating performance of these companies;
- our material weakness in our internal controls;
- the mix of products that we sell, and related services that we provide, during any period; delays between our expenditures to develop and market new products and the generation of sales from those products and the related risk of obsolete inventory;
- changes in the amount that we spend to develop, acquire or license new products, technologies or businesses;
- changes in our expenditures to promote our products and services;
- changes in the cost of satisfying our warranty obligations and servicing our installed base of 3D printers;
- success or failure of research and development projects of us or our competitors;
- announcements of acquisitions by us or one of our competitors;

- the general tendency towards volatility in the market prices of shares of companies that rely on technology and innovation;
- changes in regulatory policies or tax guidelines;
- changes or perceived changes in earnings or variations in operating results;
- any shortfall in revenues or net income from levels expected by investors or securities analysts; and
- general economic trends and other external factors.

***Substantial future sales of our ordinary shares or ADSs in the public market, or the perception that these sales could occur, could cause the price of the ADSs to decline.***

Future sales of a substantial number of our shares or ADSs, or the perception that such sales will occur, could cause a decline in the market price of the ADSs. We have filed a registration statement on Form F-3 with the SEC utilizing a "shelf" registration process, and such shelf registration statement was declared effective on August 28, 2017. Under this shelf registration process, subject to any applicable US securities law rules and regulations, we may offer from time to time up to an aggregate of \$75,000,000 of our ordinary shares, debt securities, warrants and rights to subscribe for ordinary shares, in one or more offerings. Pursuant to such shelf registration statement, in October 2018, we issued 972,000 ordinary shares, equivalent to 4,860,000 ADSs, in an underwritten public offering (the "October 2018 Issuance"). In November 2018, we issued additional 144,000 ordinary shares, equivalent to 720,000 ADSs, upon the exercise of the over-allotment option exercised by the underwriter (the "November 2018 Issuance" and together with the October 2018 Issuance, the "Issuance").

To the extent that we raise additional funds through the issuance and sale of equity or other securities that are convertible into or exchangeable for, or that represent the right to receive, ordinary shares or substantially similar securities, the terms may include liquidation or other preferences that adversely affect shareholder rights and the existing shareholders' ownership interests will be diluted if the statutory shareholders' subscription right is not exercised by the shareholders or is excluded by the general shareholders' meeting or the management board.

To the extent that we raise additional funds through the issuance and sale of equity or other securities that are convertible into or exchangeable for, or that represent the right to receive, ordinary shares or substantially similar securities, the terms may include liquidation or other preferences that adversely affect shareholder rights and the existing shareholders' ownership interests will be diluted if the statutory shareholders' subscription right is not exercised by the shareholders or is excluded by the general shareholders' meeting or the management board.

Under the German Stock Corporation Act, every shareholder is entitled to subscription rights for new ordinary shares to be issued or for other new securities that are convertible into or exchangeable for, or that represent the right to receive, ordinary shares or substantially similar securities.

However, our shareholders at the general shareholders' meeting can resolve to exclude such statutory subscription rights with an affirmative vote of a majority of at least three-quarters of the share capital represented at the meeting. An exclusion of subscription rights also requires a report from the management board to the effect that the interests of our company in excluding the subscription rights outweigh the interests of the shareholders to be entitled to a subscription. An exclusion of subscription rights may be permissible without such justification if our company is increasing the capital in return for cash contributions, the amount of the capital increase does not exceed 10 per cent of the existing share capital of our company, and the issue price of the new shares is not significantly lower than the trading price for shares in our company of the same class and having the same features already listed at the time of the final determination of the issue price. The trading price may also be determined by the market price of an ADS listed on the New York Stock Exchange, multiplied by the number of ADSs which represent a share.

Shareholders at the general shareholders' meeting may also authorize the management board to exclude the statutory shareholders' subscription right for new ordinary shares to be issued or for other new securities that are convertible into or exchangeable for, or that represent the right to receive, ordinary shares or substantially similar securities.



After the Issuance, the management board is utilizing the authorized share capital pursuant to Section 5 of the articles of association of our company – which authorizes the management board, with the consent of the supervisory board, to increase our company's registered share capital in one or more tranches by up to an additional EUR 744,000 by issuing up to 744,000 new shares (equivalent to 3,720,000 ADSs) against contributions in cash or in kind. The management board is authorized to exclude the statutory shareholders' subscription rights with the consent of the supervisory board (i) to exclude fractional amounts resulting from the subscription ratio from the statutory shareholders' subscription right, (ii) in case of capital increases in kind, in particular, but without limitation, to acquire companies, divisions of companies or interests in companies or (iii) in case of capital increases in cash provided that the issue price of the new shares is not substantially lower than the trading price for shares in our company of the same class and having the same conditions already listed at the time of the final determination of the issue price (the trading price shall also be understood to mean the price of an ADS listed at the New York Stock Exchange multiplied by the number of ADSs representing one share) and further provided that the amount of the share capital represented by the shares issued in this context under the exclusion of the statutory shareholders' subscription right does not exceed 10 per cent of the share capital both at the time when such authorization came into effect and when it is utilized.

In addition, shareholders at the general shareholders' meeting may from time to time cancel, amend or grant new authorizations to the management board to exclude the statutory shareholders' subscription rights, also for capital increases in cash for the purpose of issuing shares that are to be placed on the US capital market or with institutional investors from any jurisdiction by means of ADSs, and in the same context also to cover an over-allotment option granted to the issuing banks.

***Our principal shareholders and management own a significant percentage of our ordinary shares and will be able to exert significant influence over matters subject to shareholder approval.***

Members of our Management Board currently beneficially own 18.2% of our ordinary shares (including ordinary shares represented by ADSs). These shareholders have significant influence over the outcome of all matters requiring shareholder approval. For example, these shareholders may be able to influence the outcome of elections of members of our Supervisory Board, amendments of our organizational documents, or approval of any merger, sale of assets, or other major corporate transactions. This may prevent or discourage unsolicited acquisition proposals or offers for our ordinary shares or ADSs that you may feel are in your best interest as one of our shareholders. The interests of this group of shareholders may not always coincide with your interests or the interests of other shareholders, and they may act in a manner that advances their best interests and not necessarily those of other shareholders, including seeking a premium value for their ordinary shares, which might affect the prevailing market price for our ADSs.

***Holders of our ADSs may not have the same voting rights as the holders of our ordinary shares and may not receive voting materials in time to be able to exercise your right to vote.***

Except as described in this annual report and the deposit agreement relating to our ADSs, holders of the ADSs will not be able to exercise voting rights attaching to the ordinary shares evidenced by the ADSs on an individual basis. Under the terms of the deposit agreement, holders of the ADSs appoint the depository or its nominee as their representative to exercise the voting rights attaching to the ordinary shares represented by the ADSs. You may not receive voting materials in time to instruct the depository to vote, and it is possible that you, or persons who hold their ADSs through brokers, dealers or other third parties, will not have the opportunity to exercise a right to vote.

***You may not receive distributions on our ordinary shares represented by the ADSs or any value for them.***

Under the terms of the deposit agreement relating to our ADSs, the depository for the ADSs has agreed to pay to you the cash dividends, if any, or other distributions it or the custodian receives on our ordinary shares or other deposited securities after deducting its fees and expenses. You will receive these distributions in proportion to the number of our ordinary shares your ADSs represent. However, in accordance with the limitations set forth in the deposit agreement, it may be unlawful or impractical to make a distribution available to holders of ADSs. In addition, with respect to distributions of rights to subscribe for additional ordinary shares or ADSs, such distributions will only be made if we request such rights be made available to holders of the ADSs. We have no obligation to take any other action to permit the distribution of the ADSs, ordinary shares, rights or anything else to holders of the ADSs. This means that you may not receive the distributions we make on our ordinary shares or any value from them. These restrictions may have a material adverse effect on the value of your ADSs.

***We have no present intention to pay dividends on our ordinary shares in the foreseeable future and, consequently, your only opportunity to achieve a return on your investment during that time is if the price of our ADSs appreciates.***

We have no present intention to pay dividends on our ordinary shares in the foreseeable future. Any recommendation by our Management and Supervisory Boards to pay dividends will depend on many factors, including our financial condition, results of operations, legal requirements and other factors. Accordingly, if the price of our ADSs declines in the foreseeable future, you will incur a loss on your investment, without the likelihood that this loss will be offset in part or at all by potential future cash dividends.

***As a foreign private issuer, we are exempt from a number of rules under the U.S. securities laws and are permitted to file less information with the SEC than U.S. companies. This may limit the information available to holders of ADSs.***

We are a “foreign private issuer,” as defined in the SEC rules and regulations, and, consequently, we are not subject to all of the disclosure requirements applicable to companies organized within the United States. For example, we are exempt from certain rules under the Securities Exchange Act of 1934, as amended, or the Exchange Act, that regulate disclosure obligations and procedural requirements related to the solicitation of proxies, consents or authorizations applicable to a security registered under the Exchange Act. In addition, members of our Management Board and Supervisory Board and our principal shareholders are exempt from the reporting and “short-swing” profit recovery provisions of Section 16 of the Exchange Act and related rules with respect to their purchases and sales of our securities. Moreover, we are not required to file periodic reports and financial statements with the SEC as frequently or as promptly as U.S. public companies. Accordingly, there may be less publicly-available information concerning our company than there is for U.S. public companies.

As a foreign private issuer, we file an annual report on Form 20-F within four months of the close of each year ended December 31 and furnish reports on Form 6-K relating to certain material events promptly after we publicly announce these events. In addition, under the New York Stock Exchange Listed Company Manual, we must submit to the SEC a Form 6-K that includes interim earnings reports on a semi-annual basis. Although we intend to issue quarterly financial information, because of the above exemptions for foreign private issuers, we are not required to do so, and, therefore, holders of our ADSs may not be afforded the same protections or information generally available to investors holding shares in public companies organized in the United States.

***As a foreign private issuer, we are not subject to certain New York Stock Exchange corporate governance rules applicable to U.S. listed companies.***

We rely on provisions in the New York Stock Exchange Listed Company Manual that permit us to follow our home country corporate governance practices with regard to certain aspects of corporate governance. This allows us to follow German corporate law and the German Corporate Governance Code, which differ in significant respects from the corporate governance requirements applicable to U.S. companies listed on the New York Stock Exchange.

In accordance with our New York Stock Exchange listing, our Audit Committee is required to comply with or satisfy an exemption from the provisions of Section 301 of the Sarbanes-Oxley Act and Rule 10A-3 of the Exchange Act, both of which are also applicable to listed U.S. companies. Because we are a foreign private issuer, however, we generally are permitted to follow home country practice in lieu of the corporate governance standards provided in the New York Stock Exchange Listed Company Manual. In particular, we are not required to comply with the requirements that the members of our Audit Committee satisfy financial literacy standards, that a majority of the members of our Supervisory Board must be independent, that our Audit Committee and Compensation and Nominating Committee adopt written charters and that we adopt and disclose corporate governance guidelines. If some investors find the ADSs less attractive as a result of these differences, there may be a less active trading market for the ADSs and the price of the ADSs may be more volatile. See “Item 16G. Corporate Governance.”

***We may lose our foreign private issuer status in the future, which could result in significant additional costs and expenses.***

As a foreign private issuer, we are not required to comply with all the periodic disclosure and current reporting requirements of the Exchange Act and related rules and regulations. The determination of foreign private issuer status is made annually on the last business day of an issuer’s most recently completed second fiscal quarter. Accordingly, we



will next make a determination with respect to our foreign private issuer status on June 30, 2019. There is a risk that we will lose our foreign private issuer status in the future.

We would lose our foreign private issuer status if, for example, more than 50% of our assets are located in the United States and we continue to fail to meet additional requirements necessary to maintain our foreign private issuer status. As of December 31, 2018, approximately 11% of our assets were located in the United States, although this may increase as we expand our operations in the United States. The regulatory and compliance costs to us under U.S. securities laws as a U.S. domestic issuer may be significantly greater than the costs we incur as a foreign private issuer. If we are not a foreign private issuer, we will be required to file periodic reports and registration statements on U.S. domestic issuer forms with the SEC, which are more detailed and extensive in certain respects than the forms available to a foreign private issuer. We would be required under current SEC rules to prepare our financial statements in accordance with U.S. GAAP and modify certain of our policies to comply with corporate governance practices associated with U.S. domestic issuers. Such conversion and modifications would involve additional costs. In addition, we may lose our ability to rely upon exemptions from certain corporate governance requirements on the New York Stock Exchange that are available to foreign private issuers such as the ones described above and exemptions from procedural requirements related to the solicitation of proxies.

***Because we are no longer an “emerging growth company,” as defined in the JOBS Act, we must incur additional expenses and devote increased management time to compliance with additional disclosures that are applicable to companies that are not emerging growth companies .***

For as long as we qualified as an emerging growth company, we were permitted to take advantage of reduced regulatory and reporting requirements that are otherwise generally applicable to public companies . These included, without limitation, not being required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes Oxley Act and reduced disclosure obligations regarding executive compensation in our periodic reports and other public filings. However, because we ceased to be an emerging growth company effective as of December 31, 2018, we have incurred and expect in the future to incur additional expenses and to devote increased management time toward ensuring compliance with those requirements applicable to companies that are not emerging growth companies.

In particular, beginning with this Annual Report on Form 20-F, our independent registered public accounting firm is required to provide an annual attestation report regarding the effectiveness of our internal control over financial reporting. Testing and maintaining internal control over financial reporting can divert our management’s attention from other matters that are important to the operation of our business. If our independent registered public accounting firm is unable to express an unqualified opinion as to the effectiveness of our internal control over financial reporting, investors may lose confidence in the accuracy and completeness of our financial reports and the market price of our ADSs could be negatively affected, and we could become subject to investigations by the SEC or other regulatory authorities or to stockholder litigation, which could have an adverse impact on the market price or our common stock and cause us to incur additional expenses.

***Changes in accounting standards could impact our reported results.***

The IASB, or other regulatory bodies, periodically introduce modifications to financial accounting and reporting standards or issue new financial accounting and reporting standards under which we prepare our consolidated financial statements. These changes can materially impact the means by which we report financial information, affecting our reported results of operations. Also, we could be required to apply new or revised standards retroactively.

More specifically, several new or amended standards and interpretations to IFRS are expected over the coming years. In particular, IFRS 16 “Leases” went into effect on January 1, 2019. With respect to IFRS 16, we have evaluated our assessment of the impact thereof.

***Our management has concluded that our disclosure controls and procedures are ineffective due to material weaknesses in our internal control over financial reporting. If we are unable to establish and maintain effective internal control over financial reporting or if we are unable to remediate these material weaknesses, our ability to produce accurate and reliable financial statements could be impaired, and the market price of our ADSs may be negatively affected.***

The Sarbanes-Oxley Act requires, among other things, that we maintain effective internal control over financial reporting and disclosure controls and procedures. In connection with the preparation of our financial statements as of December 31, 2018, we concluded there were a material weaknesses in our control environment. A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of annual or interim financial statements will not be prevented or detected and corrected on a timely basis. See “Item 15. Controls and Procedures.”

In addition, as of December 31, 2017 and December 31, 2016, we identified a material weakness in non-standard transactions, including revenue recognition for non-standard service transactions, which are not reviewed in sufficient detail by personnel with appropriate technical expertise to ensure that the accounting treatment in accordance with IFRS is appropriate, and in the design and operations of controls over financial reporting that resulted from the lack of controls over the valuation of work-in-process inventories, respectively.

While we have remediated prior material weaknesses, we cannot assure you that there will not be material weaknesses or significant deficiencies in our internal control over financial reporting in the future. Our failure to maintain internal control over financial reporting could severely inhibit our ability to accurately report our financial condition, results of operations or cash flows. In addition, we may not be able to prevent or detect a material misstatement in our financial statements on a timely basis or at all. Such misstatements could result in a future restatement of our financial statements, could cause us to fail to meet our reporting obligations, or could cause investors to lose confidence in our reported financial information, leading to a decline in the price of our ADSs or litigation. Furthermore, our reputation could be harmed and our customers’ and partners’ confidence in us may be impaired, all of which could damage our business. See “Item 15. Controls and Procedures.”

***We incur significant increased costs as a result of operating as a company whose ADSs are publicly traded in the United States, and our management is required to devote substantial time to new compliance initiatives.***

As a company whose ADSs commenced trading in the United States in October 2013, we incur significant legal, accounting, insurance and other expenses that we did not incur before going public. In addition, the Sarbanes Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act and related rules implemented by the SEC and the New York Stock Exchange have imposed various requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls. Our management and other personnel must devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations increase our legal and financial compliance costs and make some activities more time-consuming and costly. For example, these rules and regulations have made it more difficult and more expensive for us to obtain director and officer liability insurance, and we may be required to incur substantial costs to maintain the same or similar coverage. These laws and regulations could also make it more difficult and expensive for us to attract and retain qualified persons to serve on our Supervisory Board or its committees or on our Management Board. Furthermore, if we are unable to satisfy our obligations as a public company, we could be subject to delisting of the ADSs, fines, sanctions and other regulatory action and potentially civil litigation.

***U.S. investors may have difficulty enforcing civil liabilities against our Company or members of our Management and Supervisory boards.***

The members of our Management and Supervisory Boards are non-residents of the United States, and all or a substantial portion of the assets of such persons are located outside the United States. As a result, it may not be possible, or may be very difficult, to serve process on such persons or us in the United States or to enforce judgments obtained in U.S. courts against them or us based on civil liability provisions of the securities laws of the United States. In addition, awards of punitive damages in actions brought in the United States or elsewhere may be unenforceable in Germany. An award for monetary damages under the U.S. securities laws would be considered punitive if it does not seek to compensate the claimant for loss or damage suffered and is intended to punish the defendant. The enforceability of any judgment in Germany will depend on the particular facts of the case as well as the laws and treaties in effect at the time.

Litigation in Germany is also subject to rules of procedure that differ from the U.S. rules, including with respect to the taking and admissibility of evidence, the conduct of the proceedings and the allocation of costs. Proceedings in Germany would have to be conducted in the German language, and all documents submitted to the court would, in principle, have to be translated into German. For these reasons, it may be difficult for a U.S. investor to bring an original action in a German court predicated upon the civil liability provisions of the U.S. federal securities laws against us and the members of our Management and Supervisory Boards. The United States and Germany do not currently have a treaty providing for recognition and enforcement of judgments (other than arbitration awards) in civil and commercial matters, though recognition and enforcement of foreign judgments in Germany is possible in accordance with applicable German laws.

***You may be subject to limitations on the transfer of your ADSs.***

Your ADSs are transferable on the books of the depository. However, the depository may close its books at any time or from time to time when it deems doing so expedient in connection with the performance of its duties. The depository may close its books from time to time for a number of reasons, including in connection with corporate events such as a rights offering, during which time the depository needs to maintain an exact number of ADS holders on its books for a specified period. The depository may also close its books in emergencies, and on weekends and public holidays. The depository may refuse to deliver, transfer or register transfers of our ADSs generally when our share register or the books of the depository are closed, or at any time if we or the depository thinks that it is advisable to do so because of any requirement of law or of any government or governmental body, or under any provision of the deposit agreement, or for any other reason in accordance with the terms of the deposit agreement. As a result, you may be unable to transfer your ADSs when you wish to.

***If securities or industry analysts do not publish research or reports about our business, or if they or anyone else gives negative recommendations regarding our ADSs, the market price for our ADSs and trading volume could decline.***

The trading market for our ADSs will be influenced by research or reports that industry or securities analysts publish about our business. If one or more analysts who cover us downgrade our ADSs, the market price for our ADSs would likely decline. If other individuals, including short sellers, disseminate negative information regarding our business or our ADSs, the market price for our ADSs may also decline. If one or more of these analysts cease to cover us or fail to regularly publish reports on us, we could lose visibility in the financial markets, which, in turn, could cause the market price or trading volume for our ADSs to decline.

***Your rights as a shareholder in a German corporation may differ from your rights as a shareholder in a U.S. corporation.***

We are organized as a stock corporation ( *Aktiengesellschaft* ) under the laws of Germany. You should be aware that the rights of shareholders under German law differ in important respects from those of shareholders in a U.S. corporation. These differences include, in particular:

- Under German law, certain important resolutions, including, for example, capital decreases, measures under the German Transformation Act ( *Umwandlungsgesetz* ), such as mergers, conversions and spin-offs, the issuance of convertible bonds or bonds with warrants attached and the dissolution of the German stock corporation apart from insolvency and certain other proceedings, require the vote of a 75% majority of the capital present or represented at the relevant shareholders' meeting. Therefore, the holder or holders of a blocking minority of 25% or, depending on the attendance level at the shareholders' meeting, the holder or holders of a smaller percentage of the shares in a German stock corporation may be able to block any such votes, possibly to our detriment or the detriment of our other shareholders.
- As a general rule under German law, a shareholder has no direct recourse against the members of the management board or supervisory board of a German stock corporation in the event that it is alleged that they have breached their duty of loyalty or duty of care to the German stock corporation. Apart from insolvency or other special circumstances, only the German stock corporation itself has the right to claim damages from members of either board. A German stock corporation may waive or settle these damages claims only if at least three years have passed and the shareholders approve the waiver or settlement at the shareholders' meeting with a simple majority of the votes cast, provided that a minority holding, in the aggregate, 10% or more of the German stock corporation's share capital does not have its opposition formally noted in the minutes maintained by a German civil law notary.

For more information, we have provided summaries of relevant German corporation law and of our articles of association under “Item 6. Directors, Senior Management and Employees—C. Board Practices” and “Item 10. Additional Information—B. Memorandum and Articles of Association.”

***Exchange rate fluctuations may reduce the amount of U.S. dollars you receive in respect of any dividends or other distributions we may pay in the future in connection with your ADSs.***

Under German law, the determination of whether we have been sufficiently profitable to pay dividends is made on the basis of our unconsolidated annual financial statements prepared under the German Commercial Code (*Handelsgesetzbuch*) in accordance with accounting principles generally accepted in Germany. Exchange rate fluctuations may affect the amount in U.S. dollars that our shareholders receive upon the payment of cash dividends or other distributions we declare and pay in euro, if any. Such fluctuations could adversely affect the value of our ADSs and, in turn, the U.S. dollar proceeds that holders receive from the sale of our ADSs.

***In the event we are or become treated as a passive foreign investment company, or PFIC, for U.S. federal income tax purposes, U.S. holders of our ADSs could be subject to adverse U.S. federal income tax consequences.***

In the event we were treated as a PFIC, U.S. holders (as defined in “Item 10. Additional Information—E. Taxation—U.S. Taxation of ADSs”) of our ADSs could be subject to adverse U.S. federal income tax consequences. These consequences include the following: (i) if our ADSs are “marketable stock” for purposes of the PFIC rules and a U.S. holder makes a mark-to-market election with respect to its ADSs, the U.S. holder will be required to include annually in its U.S. federal taxable income an amount reflecting any year-end increase in the value of its ADSs, (ii) if a U.S. holder does not make a mark-to-market election, it may incur significant additional U.S. federal income taxes on income resulting from distributions on, or any gain from the disposition of, our ADSs, as such income generally would be allocated over the U.S. holder’s holding period for its ADSs and subject to tax at the highest rates of U.S. federal income taxation in effect for such years, with an interest charge then imposed on the resulting taxes in respect of such income, and (iii) dividends paid by us would not be eligible for reduced individual rates of U.S. federal income tax. We do not intend to furnish holders with the information necessary to make a “qualified electing fund” election in lieu of a mark-to-market election. In addition, U.S. holders that own an interest in a PFIC are required to file additional U.S. federal tax information returns.

A U.S. holder may in certain circumstances mitigate adverse tax consequences of the PFIC rules by filing an election to treat the PFIC as a qualified electing fund, or a QEF. However, in the event that we are or become a PFIC, we do not intend to comply with the reporting requirements necessary to permit U.S. holders to elect to treat us as a QEF. See “Item 10. Additional Information—E. Taxation—Additional United States Federal Income Tax Consequences—PFIC Rules.”

#### **ITEM 4. INFORMATION ON THE COMPANY**

##### **A. HISTORY AND DEVELOPMENT OF THE COMPANY**

voxeljet AG is a stock corporation organized under the laws of Germany. The legal predecessor of our company was founded as Generis GmbH on May 5, 1999. On January 7, 2004, Generis GmbH changed its name to Voxeljet Technology GmbH.

On July 2, 2013, the shareholders of Voxeljet Technology GmbH incorporated VXLT 2013 AG, which was registered in the commercial register of the local court (*Amtsgericht*) of Augsburg, Germany on July 11, 2013 under number HRB 27999.

Voxeljet Technology GmbH was subsequently merged by way of merger through assumption into VXLT 2013 AG on July 29, 2013 effective as of September 12, 2013 upon registration of the merger in the commercial register of the surviving entity, VXLT 2013 AG. The merger had retroactive effect as of January 1, 2013. As part of the merger, VXLT 2013 AG changed its name to voxeljet AG effective upon the registration of the merger in the commercial register. By way of merger through assumption, upon effectiveness, voxeljet AG, as the surviving entity, took over all assets and liabilities of Voxeljet Technology GmbH by universal assumption and accession under German mandatory law, and Voxeljet Technology GmbH ceased to exist.

On October 23, 2013, we sold 5,600,000 ADSs in our initial public offering at a price of \$13.00 per ADS, thereby raising \$72.8 million (before underwriting discounts and costs). The ADSs we sold in the initial public offering represented new shares issued in a capital increase resolved by our shareholders for the purposes of the initial public offering on October 11, 2013.

On April 16, 2014, we completed a follow-on offering of 3,000,000 ADSs at a public offering price of \$15.00 per ADS. Net proceeds from the follow-on offering to the Company were approximately \$41.4 million. On April 24, 2014, the underwriters in the follow-on offering purchased 450,000 ADSs from certain of the Company's shareholders (the "Selling Shareholders") pursuant to the overallotment option they were granted in the follow-on offering. The Company did not receive any proceeds from the sale of ADSs by the Selling Shareholders.

On October 17, 2018, we issued 972,000 ordinary shares, equivalent to 4,860,000 American Depository Shares ("ADS"), at an offering price of \$2.57 per ADS (the "Public Offering Price"). The Company received net proceeds of approximately \$10.6 million. Members of our management board, who are also significant shareholders, purchased an aggregate number of 233,462 ADSs in this offering at the Public Offering Price. On November 8, 2018, we closed the over-allotment option in which we issued additional 144,000 ordinary shares, equivalent to 720,000 ADSs. The Company received net proceeds of approximately \$1.6 million.

Our website is [www.voxeljet.de](http://www.voxeljet.de). This website address is included in this annual report as an inactive textual reference only. The information and other content appearing on our website are not part of this annual report. Our principal executive offices are located at Paul-Lenz-Straße 1a, 86316 Friedberg, Germany, and our telephone number is +49 821 7483 100. Our agent for service of process in the United States is Corporation Service Company, located at 1090 Vermont Avenue N.W., Washington, DC 20005, telephone number (800) 927-9800.

### **Capital Expenditures**

Our capital expenditures amounted to €3.9 million, €3.6 million and €3.7 million, for the years ended December 31, 2018, 2017, and 2016, respectively. In 2018 the capital expenditures mainly comprised 3D printers to be used in our Services segment. In 2017 and 2016, our principal capital expenditures were for the construction of a new office building and production facility located in Friedberg, Germany for approximately € 1.9 million and € 3.1 million, respectively. At the end of 2016, the amount of € 3.1 million was recognized as an asset under construction since the construction of the building on the property was not completed until October 2017. For further information about the property we purchased in Friedberg, Germany, see "—D. Property, Plants and Equipment."

## **B. BUSINESS OVERVIEW**

### **Our Company**

We are a leading provider of high-speed, large-format 3D printers and on-demand parts services to industrial and commercial customers. Our 3D printers employ a powder binding, additive manufacturing technology to produce parts using various material sets, which consist of particulate materials and proprietary chemical binding agents. We offer our customers the highest volumetric output rate in the industry due to the combination of our large build boxes and print speeds. We provide our 3D printers and on-demand parts services to industrial and commercial customers serving the automotive, aerospace, film and entertainment, art and architecture, engineering and consumer product end markets.

We currently offer seven different 3D printer platforms, with build boxes that range from 300 × 200 × 150 millimeters to 4,000 × 2,000 × 1,000 millimeters and various print speeds, which produce volumetric output rates ranging from 0.4 liters per hour to 123.0 liters per hour. All of our platforms support our commercialized material sets, sand and plastics, along with their respective proprietary chemical binding agents. We develop our material sets according to the needs of our industrial and commercial customers, and we are currently in varying stages of developing new material sets, including shell molding and chromite sands, PMMA-based plastics, ceramics, silicon carbide, tungsten carbide and cement.

Our business is divided into two principal segments: Systems and Services.

In our Systems segment, we focus on the sale, production and development of 3D printers. In addition, we sell refurbished 3D printers which were produced for and used in our Services segment and provide printers to customers under operating lease agreements. We also provide consumables, including particulate materials and proprietary chemical binding agents, maintenance contracts and spare parts to our customers.

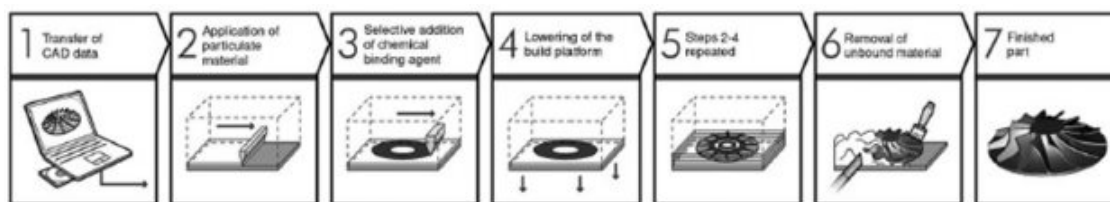
In our Services segment, we print on-demand parts for our customers. We operate service centers in Germany, the United Kingdom, the United States and China. At our service centers, we create parts, molds, cores and models based on designs produced using 3D computer-aided design, or CAD, software. Furthermore, there are customers who order casted parts directly from us. In those cases, we provide molds or models to external suppliers who then cast the parts for our customers. We believe our service center in Germany is one of the largest additive manufacturing service centers in Europe.

We sold our first 3D printer in 2002 and commenced our on-demand parts services business in 2003. As of December 31, 2018, we had an installed base of 171 printers worldwide, and we operated service centers in Germany, the United States, the United Kingdom and China. Our service centers in Germany and the United States each have approximately 43,000 square feet of production space. Our service centers in the United Kingdom and China have approximately 10,000 square feet and approximately 7,400 square feet of production space, respectively. On March 1, 2019, our Chinese service center moved into a new facility with more than 78,000 square feet of production space, storage and office space.

**Our Additive Manufacturing Technology**

Our printers build or print parts from digital designs produced using 3D CAD software by successively depositing thin layers of particulate materials. A printhead passes over each layer and deposits our proprietary chemical binding agent in the selected areas where the finished product will be created.

The following is a graphical depiction illustrating our manufacturing process:



**Our 3D Printers**

We currently produce seven 3D printer platforms. Our 3D printers consist of a build box that includes a machine platform and a controller. Our 3D printers differ based on build box size and print speeds, but all utilize our technology and can support each of our existing material sets and each of our material sets that are currently in development. As of December 31, 2018, we had an installed base of 171 printers worldwide, which includes (i) printers in our service centers and (ii) printers which are no longer commercially available, but which we believe our customers continue to use.

The following table is a comparison of our 3D printer platforms:

Platform	VX4000	VX2000	VX1000	VXC800
Build Box (millimeters)	4,000 X 2,000 X 1,000	2,000 X 1,000 X 1,000	1,000 X 600 X 500	850 X 500 X 8
External Dimensions (millimeters)	20,000 X 7,800 X 4,000	5,000 X 3,000 X 2,300	3,000 X 2,800 X 2,150	5,000 X 2,800 X 2,500
Print Resolution (dots per inch)	200	200, 600	200, 600	200
Layer Thickness (micrometers)	120 - 300	100 - 400	100 - 300	120 - 300
Volumetric Output Rate (liters per hour)	123	47	23	18
Date of Introduction	2011	2013	2011	2012



<b>Platform</b>	<b>VX500</b>	<b>VX200</b>	<b>VX200 HSS</b>
Build Box (millimeters)	500 X 400 X 300	300 X 200 X 150	320 X 170 X 200
External Dimensions (millimeters)	1,800 X 1,800 X 1,700	2,100 X 1,500 X 1,400	1700 X 900 X 1500
Print Resolution (dots per inch)	200, 600	200, 600	360
Layer Thickness (micrometers)	80 - 150	150	80 - 100
Volumetric Output Rate (liters per hour)	3	0.7	0.39 - 0.49
Date of Introduction	2007	2012	2017

**Materials**

Our commercialized material sets are comprised of sand and plastic particulate materials and their respective proprietary chemical binding agents. We believe these material sets are well suited for our commercial and industrial customers because these materials either (i) are commonly used in their existing manufacturing processes or (ii) match or exceed desired performance characteristics of existing materials being utilized in their manufacturing processes. Our sand material set offerings include four types of sands: (i) silica, (ii) kerphalite, (iii) zirconium oxide and (iv) chromite, with furan, inorganic, shell molding and phenol resins as proprietary chemical binding agents. Our plastics material set offering is based on Poly(methyl methacrylate), or PMMA, and Polypor B and C as the proprietary chemical binding agents.

We are currently in varying stages of development of new material sets which include the following particulate materials:

- different types of sands;
- different types of ceramics;
- silicon carbide and other hard metals;
- cement;
- polyamide;
- thermoplastic polyurethane

**On-demand Parts Services**

At our service centers, we create parts, molds, cores and models for a variety of industrial and commercial customers based on designs produced using 3D CAD software. We receive orders directly from customers and indirectly through our sales agents.

Our service centers in Germany and the United States each have approximately 43,000 square feet of production space. Our service centers in the United Kingdom and China have approximately 10,000 square feet and approximately 7,400 square feet of production space, respectively. On March 1, 2019, our Chinese service center moved into a new facility with more than 78,000 square feet of production space, storage and office space.

We help our customers move from the design stage to the production stage by assisting them in evaluating the optimal design and material sets for their production needs. After printing parts, we employ a thorough cleaning, finishing, quality control review and packaging and shipping process to ensure the customer receives high-quality and immediately-usable parts. Based on our capacity utilization, the lead time required for us to print a part for a customer ranges from three to 21 days and is typically five business days. Due to the size of the printers’ build boxes utilized in our German service center, specifically the VX4000 printer, we are able to print more parts simultaneously on one printer than anyone else in the industry, resulting in cost-effective and quick turnaround times for our customers’ print jobs and increased revenue and profitability for us.

Our technicians also train customers on operating, maintaining and troubleshooting our 3D printers through hands-on experience at our German service center. Additionally, our technicians provide field support to our customers

as needed. After the warranty period, we offer maintenance contracts to our customers. Those contracts include scheduled service visits where we maintain and clean the 3D printers as well as on demand visits and troubleshooting, in case of sudden problems.

### **Our Customers**

We are in the market for industrial part production utilizing additive manufacturing and are one of the few providers of additive manufacturing solutions to industrial customers, including the foundry, automotive, heavy equipment, power fluid handling and aerospace industries. We believe we have a reputation for providing high-quality systems and services in the marketplace with strong relationships with a number of leading multinational customers, including Daimler AG, BMW AG, Ford Motor Company, Volkswagen AG and Porsche SE, as well as with other key users of additive manufacturing, and technical universities such as the University of Rostock, and the Vaal University of Technology. Purchasers of our printers also include original equipment manufacturers, government agencies and independent service bureaus that provide rapid prototyping and manufacturing services to their customers. Many of our customers have been customers for over a decade. We also collaborate on research and development projects with a number of our automotive and technical university customers, including Daimler AG, BMW AG, Ford Motor Company, Volkswagen AG and the Technical University of Munich. As our customers integrate additive manufacturing into their production processes, they typically continue to utilize our on-demand parts service center for a variety of reasons, including for incremental capacity and for parts printed from different material sets.

We conduct a significant portion of our business with a limited number of customers. Our top five customers represented 20%, 19% and 24% of total revenues for the years ended December 31, 2018, 2017, and 2016, respectively. These customers primarily purchased 3D printers, while one of the top five customers primarily ordered printed parts. In the year ended December 31, 2018, there were no customers who accounted for more than 10% of our revenues. Sales of on-demand parts and consumables tend to be from repeat customers that may utilize the capability of our on-demand parts service centers for one month or longer. Sales of 3D printers are low volume and generate significant revenues, but the same customers do not necessarily buy printers in each period. Timing of customer purchases is dependent on the customer's capital budgeting cycle, which may vary from period to period. The nature of the revenues from 3D printers does not leave us dependent upon a single or a limited number of customers. Rather, the timing of the sales can have a material effect on our period-to-period financial results.

### **Sales and Marketing**

We sell our 3D printers and related consumables both through our direct sales force and with the assistance of our network of more than 20 third-party sales agents globally. Our sales organization, including our dedicated sales, service and application engineers, is responsible for worldwide sales of our 3D printers and on-demand parts services, as well as for the management and coordination of our growing sales agent network. Our direct sales force focuses primarily on customers in Europe, North America and Asia Pacific, while our sales agents are responsible for facilitating sales in other areas of the world where we do not operate directly. We have entered into partnership agreements with each of our sales agents, which grant the sales agent the right to market our products in a specified territory on either an exclusive or non-exclusive basis, depending on the sales agent; however, all sales contracts for our products are entered into between us and our customers. Certain of these sales agents also provide maintenance services to customers in their specified territories. Our application engineers provide professional services through pre-sales support and assist existing customers so that they can take advantage of our latest consumables and techniques to improve part quality and machine productivity. This group also leverages our customer contacts to help identify new application opportunities that utilize our proprietary processes. As of December 31, 2018, our worldwide sales staff for systems and parts consisted of 53 employees. We also expect that our subsidiaries in Europe, North America and Asia Pacific will improve market access through local market development and allow the targeting of specific customers.

Educating our customers and raising awareness in our target markets about the many uses and benefits of our 3D printing technology is an important part of our sales process. We believe that customers who experience the efficiency gains, decreased lead times, increased design flexibility and reduced costs of 3D printing as compared to subtractive manufacturing are more likely to purchase our 3D printers and/or utilize our on-demand parts services. We encourage potential purchasers of our 3D printers to first utilize our on-demand parts services so that they can experience firsthand the benefits of our 3D printing technology. We currently market our brand and our services at industry conferences, trade shows, and across various forms of digital and traditional media and plan to increasingly expand our marketing efforts in North America in conjunction with our geographic expansion to that region.



## **Services and Warranty**

Our fully-trained service technicians perform installations of our 3D printers. For the first year following the purchase of one of our 3D printers, we provide complimentary service and support under the statutory warranty. We also offer service contracts under which our customers can purchase maintenance and services beyond the one-year term of the warranty. These service contracts contain varying degrees of support services and are priced accordingly. Finally, we sell spare parts which we maintain in stock to assist in providing service expeditiously to our customers. Historically, we have not experienced a high level of warranty claims.

## **Manufacturing and Suppliers**

### ***Manufacturing***

We assemble our 3D printers at our facility in Friedberg, Germany using components sourced from distributors of standard electrical or mechanical parts, as well as from manufacturers which design custom parts tailored to the proprietary designs of our machines. We periodically review the quality and performance of our distributors and manufacturers. Upon completion of the assembly of our 3D printers, we perform tests to ensure that the printer is functioning properly before the system is shipped and again after the system is installed at the customer's site.

To provide customers with assurance regarding the quality and consistency of our systems, we obtained ISO 9001:2008 certification for our facility in Germany in 2010. ISO 9001:2008 provides a structure for a quality management system that strives for customer satisfaction, consistent quality and efficiency. In addition, there are internal benefits such as improved customer satisfaction, interdepartmental communications, work processes and customer- and-supplier partnerships. The ISO 9000 family of standards relates to quality management systems and is designed to help organizations ensure that they meet the needs of customers and other stakeholders.

### ***Inventory and Suppliers***

We maintain an inventory of certain parts to facilitate the timely assembly of products required by our production plan. While most components used in our 3D printers are available from multiple suppliers, certain of these components are only available from limited sources. We consider our limited-source suppliers, including the suppliers of our printheads, to be reliable; however, the loss of one of these suppliers could result in a delay in our operations. This type of delay could require us to find and re-qualify components supplied by one or more new vendors. Although we consider our relationships with our suppliers to be good, we continue to develop risk management plans for these critical suppliers. Regarding inventory we defined targets for raw materials as well as for work in progress. The strategy includes meeting customer expectation and demand for spare parts, wear parts as well as 3D printers with an attractive lead time.

## **Research and Development**

We have an ongoing research and development program to develop new 3D printers and material sets and to improve and expand the capabilities of our existing 3D printers and related material sets. As of December 31, 2018, we had various active research and development projects in different stages of completion. All research and development costs are charged to expense as incurred, as the criteria set forth in IAS 38 for capitalizing such costs have not yet been met. Our development efforts are augmented by development arrangements with research institutions, customers and suppliers of material and hardware, among others.

In addition to our internally-developed technology platforms and the related software, we have licensed the rights to intellectual property developed by third parties through licensing agreements that may obligate us to pay a license fee or royalty, typically based upon a dollar amount per unit or a percentage of the revenues generated by such products.

Our research and development expenses were € 6.3 million, € 5.5 million, and € 5.7 million for the years ended December 31, 2018, 2017, and 2016, respectively.

A significant portion of our research and development expenditures has been focused upon developing proprietary systems, processes and materials, including:

- the qualification of new print materials, including phenolic resins and inorganic binders, PMMA-based and other plastics, ceramics, silicon carbide and cement;
- the development of new or enhanced proprietary chemical binding agents;
- the development of new or enhanced binding mechanisms;
- the mechanics of spreading powders in a build box;
- the transfer of digital data through a series of software links to drive a printhead; and
- synchronizing all of the above to print ever-increasing volumes of material per unit time.

We also regularly apply for research and development grants and subsidies under European and German grant rules for small and medium enterprises. The majority of these grants and subsidies are non-refundable. We have received grants and subsidies from different authorities, including the German Federal Ministry of Economics and Technology ( *Bundesministerium für Wirtschaft und Technologie* ), the Bavarian Research Foundation ( *Bayerische Forschungsstiftung* ) and the German Federal Foundation Environment ( *Deutsche Bundesstiftung Umwelt* ).

We expect to continue to invest significantly in research and development in the future.

### **Intellectual Property**

We consider our proprietary technology to be important to the development, manufacture, and sale of our products and seek to protect such technology through a combination of patents, trademarks, and trade secrets. We also have in place confidentiality agreements and other contractual arrangements with our employees, consultants, customers and others.

**Patents.** As of February 28, 2019, we owned or co-owned 60 issued U.S. patents and 37 pending U.S. patent applications. In addition, we own or co-own patent rights in Europe, Asia, Brazil and Canada. In total, as of February 28, 2019 our patent portfolio consisted of over 402 patents and patent applications. Our currently issued patents will expire at different times in the future, with the earliest expiring in 2019 and the latest expiring in 2035. Our currently pending applications will generally remain in effect for 20 years from the date of the initial applications.

These patent assets are complemented by our marketing, business development and applications know-how and our ongoing research and development efforts. Nevertheless, there can be no assurance that our patents, licenses or other intellectual property rights will afford us a meaningful competitive advantage in the fast-paced and innovative field in which we operate.

**Trade Secrets.** As is true in our industry generally, the development of our products, processes and materials has involved a considerable amount of experience, manufacturing and processing know-how and research and development techniques. We protect our proprietary processes and technologies with a blend of patent protection and trade secret protection. As part of our overall intellectual property strategy, we protect our non-patented proprietary knowledge as trade secrets through confidentiality controls and through the use of nondisclosure and confidentiality agreements.

**Licenses.** We are a party to various licenses and other arrangements that allow us to practice and improve our technology under a range of patents, patent applications and other intellectual property, including license agreements with ExOne, 3D Systems (Z Corp), Bego Medical GmbH, Bego, and Evonik IP GmbH each described in more detail below.

In 2003, we entered into an agreement with Extrude Hone GmbH (now doing business as ExOne) related to patents and technologies using certain binders, methods and equipment for 3-D printing processes, including sand-based 3-D printing. Under the terms of this agreement, ExOne purchased an ownership share in certain patents and related

technologies from us. Further, we granted ExOne certain rights to exploit these technologies and ExOne entered into an ongoing obligation to pay royalties to us. The parties also agreed to share revenues generated from any licenses granted by ExOne. The agreement states that we are permitted to use machines and provide services relating to these technologies, but not to make or sell machines utilizing these technologies without ExOne's consent, although ExOne has an obligation to consent if the machines do not compete with products engineered, manufactured or sold by ExOne or its affiliates. If we intend to sell any of the intellectual property that is the subject of this agreement, ExOne has the option to acquire it at fair market value. Similarly, ExOne has a right of first refusal regarding the purchase of any developments and improvements we make to such intellectual property and a set of six patents (including one U.S. patent) related to wax technologies, as well as the right to negotiate to receive a license to such developments and improvements. We later signed an amendment with ExOne specifically allowing us to use the subject patents for our 3D printers working with plastics in exchange for the payment of a license fee. The obligation of both parties to pay royalties under this agreement extends until the expiration of the last issued patent included in the list of transferred patent assets.

While the agreement states that our rights are limited regarding use of certain binders and sand-based casting methods in 3D printers with ExOne, we believe these limitations will not materially impact the growth of our business, as we are able to continue certain activities in compliance with the agreement and we have developed processes which do not rely upon the subject patent portfolio, associated agreements and related technologies. If needed, we will take steps to protect our ability to continue such activities including by challenging the validity or enforceability of certain provisions of the agreement. In March 2018, ExOne GmbH, a subsidiary of ExOne, notified us of their intent not to pay their annual license fees under this agreement and asserted their rights to claim damages pursuant to an alleged material breach of the agreement. We are vigorously disputing these claims, however, the outcome of this matter is uncertain.

In 2004, we entered into a non-exclusive license and sublicense agreement with Z Corp (acquired by 3D Systems in 2012), which allows us to make, use and sell 3D printing equipment for the fabrication of plastic parts utilizing organic powder binders under certain Z Corp and Massachusetts Institute of Technology patents. In return for these rights, we agreed to pay an initial license fee and ongoing tiered royalties. We later amended this agreement, expanding our permitted use of the licensed binder-jetting technology to include inorganic powder, ceramics, and concrete printing in a process that does not require post processing other than oven baking parts or liquid infiltration, but restricting us to monochromatic color configurations. The agreement extends until the expiration of the licensed patents; however, the parties may terminate the agreement under certain conditions.

In 2012, we entered into a cross licensing agreement with Bego pursuant to which each party granted to the other certain exclusive rights regarding each parties' patents and applications directed to continuous additive manufacturing. We granted to Bego an exclusive license to market patent covered products in the field of laser sintering and other related technologies, while Bego granted to us an exclusive license to market patent covered products in the field of binder-jetting technology (other than for dental applications). We also agreed to pay to Bego a royalty and to pay a participation fee to Bego in the event that we grant any sublicenses to the technology (which, to date, we have not done). This agreement automatically terminates upon the expiration of the last patent subject to the agreement.

In March 2015, we entered into a non-exclusive technology license agreement with Evonik IP GmbH, in which voxeljet acquired a license for a 3D printing process using polymeric materials that we believe offers distinct speed and cost benefits. This powder bed fusion process allows for production of parts with thermoplastic properties. In return for these rights, we agreed to pay an upfront payment and ongoing royalties for each royalty period, subject to the payment of a fixed minimum annual royalty if higher. The agreement shall remain in force until the expiration of the last to expire patent of the licensed patents; however, either party may terminate the agreement under certain conditions.

In addition to the foregoing licenses, we have also licensed additional patents that we believe can be used to expand our material set offerings.

**Trademarks.** We have secured word and figurative trademarks for voxeljet in Europe and have international (IR) applications covering the United States, Russia, Mexico and a number of countries in Asia.

## Competition

Our principal competitors consist of other developers of 3D printing systems and providers of 3D printing services. These companies use a variety of additive manufacturing technologies, including:

- fused deposition modeling;
- binder jetting;
- inkjet;
- selective laser sintering; and
- stereolithography.

Some of the companies that have developed and use one or more additive manufacturing technologies to compete with us include: ExOne, 3D Systems Corporation, Stratasys Ltd. and EOS GmbH.

These technologies, which compete for market share in the additive manufacturing industry, possess various competitive advantages and disadvantages relative to one another within key categories, including resolution, accuracy, surface quality, variety and properties of the materials they use and produce, capacity, speed, color, transparency and the ability to print multiple materials. Due to these multiple categories, we believe end users usually make technology purchasing decisions based on the characteristics that they value most for a particular application. The competitive environment that has developed is therefore intense and dynamic, as market players often position their technologies to capture multiple vertical markets.

Despite the challenging competitive landscape, we believe that we have several competitive advantages, including the size of our build platforms, our printing speeds, the volumetric output rate of our 3D printers and the variety of qualified material sets that we offer to commercial and industrial customers.

We also compete with established subtractive manufacturers in the industrial products market. However, we believe that we are well positioned to expand our share of the industrial products market as additive manufacturing gains recognition and increases its cost effectiveness. As our technologies improve and our unit cost of production decreases, we expect to be able to better compete with subtractive manufacturing on a wide range of products, thereby expanding our addressable market.

## Seasonality

Historically, our results of operations have been subject to seasonal factors. Purchases of our 3D printers often follow a seasonal pattern owing to the capital budgeting cycles of our customers. Generally, 3D printer sales are higher in our second and fourth fiscal quarters than in our first and third fiscal quarters. Sales in our Services segment generally are not affected by seasonality. See “Item 3. Key Information—D. Risk Factors—Risks Related to Our Business and Industry—Our revenues and operating results may fluctuate.”

## Regulatory/Environmental Matters

We are subject to environmental, health and safety regulations in Germany, as well as in the countries where our products and materials are used or sold.

### *Germany*

#### *Legal Requirements for Manufacturing Sites*

*Emissions Control Law.* We do require a permit granted under the Federal Emissions Control Act ( *Bundes-Immissionsschutzgesetz* , or BImSchG), as we use resins ( *Harze* ) to create models for customers. Therefore, the permit was granted for the buildings “Halle 1” “and Halle 2” to us in December 2013 by the District Administration (Landratsamt) of Aichach- Friedberg. The building permit was granted under the condition ( *Auflage* ), that the amount of

resins processed by us does not exceed 25 kilograms per hour. For the building “Halle 3”, the permit was granted in July 2016 by the District Administration (Landratsamt) of Aichach- Friedberg. The building permit was granted under the condition ( *Auflage* ), that the amount of resins processed by us does not exceed 10 kilograms per hour. Facilities that are subject to BImSchG are required to comply with the current state of the art ( *Stand der Technik* ) in emissions reduction and safety technology. We are therefore supervised by the Landesamt für Umweltschutz (LfU) and as well by the District Administration of Aichach Friedberg and have regularly give full reports about the emissions in our facilities.

*Production, Possession and Handling of Waste and Dangerous Goods.* Our business activities result in the generation, possession and handling of waste, including hazardous waste. Under the German Act on Recycling ( *Kreislaufwirtschaftsgesetz* , or KrWG), the generation, possession and handling of waste is subject to several obligations, depending, among other things, on the waste concerned. As the producer ( *Erzeuger* ) and possessor ( *Besitzer* ) of waste, we are generally responsible for the proper handling of this waste.

Section 50 of the KrWG requires producers, possessors, collectors and transporters of waste and disposal firms to verify to the competent authority proper disposal of hazardous waste ( *gefährliche Abfälle* ). Whether a certain substance qualifies as hazardous waste is determined according to the German Ordinance on the European Waste List ( *Verordnung über das Europäische Abfallverzeichnis* ).

We further comply with the International Maritime Dangerous Goods Code, which is accepted as an international guideline for the safe transportation or shipment of dangerous goods or hazardous materials by water.

We also comply with the Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of December 18, 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

We have trained and educated an employee to serve as our risk prevention officer ( *Gefahrgutbeauftragter* ). The risk prevention officer ensures that we comply with specific regulations and provisions when dangerous goods are shipped. In addition, we have two “Authorized Persons” (Beauftragte Personen), who are equally responsible for the risk prevention, and who are advised by the risk prevention officer. All of these persons (risk prevention officer and the authorized persons) do regularly take part in external trainings.

#### *Legal Requirements Related to Products*

*Product Safety.* Our products are used in a wide range of industries. As some of our products may be used directly by customers, we are subject to the Product Safety Act ( *Produktsicherheitsgesetz* , or ProdSG), which relates to general product safety. With the ProdSG of November 8, 2011 and the ninth regulation to the ProdSG as amended ( *Neunte Verordnung zum Produktsicherheitsgesetz ( Maschinenverordnung )* ), the German legislature transformed, among other European Directives, the Directive 2006/42/EC of the European Parliament and of the Council of May 17, 2006 on machinery into German law. The ProdSG applies whenever products are made available on the market, exhibited or used for the first time in the context of a commercial activity, but only in the absence of other legal provisions that provide for corresponding or more far-reaching provisions.

Under the ProdSG, a product may be made available on the market only if it complies with specific regulations for such product, or, in the absence of such specific regulations, if its intended or foreseeable use does not put the health and safety of persons at risk.

In addition to compliance with this safety requirement, if products are made available to consumers, manufacturers must provide consumers with the necessary information to enable them to assess the risks inherent in such product where such risks are not immediately obvious without adequate warnings and to take precautions against those risks. If manufacturers or distributors of consumer products discover that a product is dangerous, they must notify the competent authorities and, if necessary, cooperate with them. Under certain circumstances, a product may have to be recalled.

*Occupational Health and Safety Requirements.* Where the working environment may pose threats to employees, occupational health and safety laws are applicable. German law on occupational safety is heavily influenced by the requirements of EU law. The central rules on occupational safety in Germany are contained in the Act on Occupational Safety ( *Arbeitsschutzgesetz* , or ArbSchG), which requires employers to provide for their employees’ safety. This general obligation is put into effect through several ordinances ( *Rechtsverordnungen* ) under the ArbSchG,

which are defined in technical guidelines. One central element is the Workplaces Ordinance ( *Arbeitsstättenverordnung* ), which contains various regulations on workplace conditions relating to, for example, ventilation, temperature and illumination.

In addition, we are under surveillance of the employers' liability insurance association (Berufsgenossenschaft). All companies in Germany are obliged to be member of the Berufsgenossenschaft, who is monitoring the companies regarding compliance with the Health and Safety Requirements.

#### *Potential Liability for Products and Environmental Losses*

Our business activities are such that product liability and liability for environmental damage are possible. Under general rules of the German Civil Code ( *Bürgerliches Gesetzbuch* , or BGB), fault-based compensation ( *Schadensersatz* ) is to be paid for breach of contract or unlawful infringements of legally protected rights. This obligation does not only apply to our own acts but may extend to behavior of individuals that work or undertake tasks for us under Sections 278, and 831 of BGB.

In addition, we may be strictly liable ( *i.e.* , liable regardless of our fault), as a Producer under the Product Liability Act ( *Produkthaftungsgesetz* , or ProdHaftG), for damages caused by a defective product. “Producer” means any participant in the production process, the importer of the defective product, any person putting a name, trademark or other distinguishing feature on the product, and any person supplying a product whose actual producer cannot be identified. “Defectiveness” means the lack of the safety which the general public is entitled to expect when taking into account, among other things, the presentation of the product and the uses to which it can reasonably be put.

Additionally, in case of damage to persons or property caused by our facility, we may additionally be strictly liable under the Act on Liability for Environmental Damage ( *Umwelthaftungsgesetz* ) and under the Environmental Damage Act ( *Umweltschadensgesetz* ).

#### **Worldwide**

Our operations and the activities of our employees, contractors and agents around the world are subject to the laws and regulations of numerous countries, including the United States. These laws and regulations include data privacy requirements, labor relations laws, tax laws, anti-competition regulations, prohibitions on payments to governmental officials, federal and state environmental regulations, import and trade restrictions and export requirements. Violations of these laws and regulations could result in fines, criminal sanctions against our officers, our employees, or us and may result in prohibitions on the conduct of our business. Any such violations could also result in prohibitions on our ability to offer our products and services in one or more countries and could materially damage our reputation, our ability to attract and retain employees, our business and our operating results.

Our operations (particularly in those countries with developing economies) are also subject to risks of violations of laws prohibiting improper payments and bribery, including the European Union Anti-Corruption Act, U.K. Bribery Act, U.S. Foreign Corrupt Practices Act and similar regulations in other jurisdictions. Although we have implemented policies and procedures designed to ensure compliance with these laws, our employees, contractors, and agents may take actions in violation of such policies. Any such violations, even if prohibited by our policies, could subject us to civil or criminal penalties or otherwise have an adverse effect on our business and reputation.

#### **Legal Proceedings**

From time to time, we may be subject to various claims or legal, arbitration or administrative proceedings that arise in the ordinary course of our business. We are currently not a party to any legal, arbitration or administrative proceedings which, in the opinion of our management, may have or have had in the recent past, significant effects on our business, financial condition or results of operations, including governmental proceedings pending or known to be contemplated.

#### **Insurance**

We maintain comprehensive business liability insurance coverage ( *Betriebshaftpflichtversicherung* “*Compact-Firmenversicherung*” ) for our business operations. In addition, we have obtained directors and officers liability insurance, which covers expenses, capped at a certain amount, that our Management and Supervisory Board

members and our executive managers may incur in connection with their conduct as members of our Management and Supervisory Boards or executive managers. We also maintain insurance policies on our 3D printers, a group insurance policy for our employees covering occupational accidents, car insurance policies and a legal expenses insurance policy. We consider the insurance coverage we have to be adequate in light of the risks we face.

### Geographic Information

Our revenues by geographic region for the year ended December 31, 2018 were EMEA 56%, Asia Pacific 21% and Americas 23%, as compared to EMEA 64%, Asia Pacific 11% and Americas 25% for the same period in 2017. In 2016, our revenues by geographic region were EMEA 60%, Asia Pacific 22% and Americas 19%. See Item 5. Operating and Financial Review and Prospects—A. Operating Results.”

### C. ORGANIZATIONAL STRUCTURE

Our corporate structure includes voxeljet AG (formerly Voxeljet Technology GmbH) and the three wholly-owned subsidiaries voxeljet America Inc. ( *voxeljet America* ), voxeljet UK Ltd. ( *voxeljet UK* ) and voxeljet India Pvt. Ltd ( *voxeljet India* ). Additionally it includes voxeljet China Co., Ltd. where we held a supermajority shareholding of 95.825% interest. Within the contribution of a lease contract on March 1, 2019 which includes 36 months free of rent, which has been negotiated by our joint venture partner Suzhou Meimai Fast Manufacturing Technology Co., Ltd, (“Meimai”), Meimai has increased there shareholding from 4.175% to 30.0% as it has been agreed within the joint venture contract. Therefore our shareholding in voxeljet China Co., Ltd. decreased to 70% on March 1, 2019. On February 5, 2014, our subsidiary, voxeljet America Inc. was incorporated in Delaware. *voxeljet America Inc.* is headquartered near Detroit, Michigan and conducts our North American operations. We began printing on-demand parts at the facility in the first quarter of 2015. On October 1, 2014, we completed the acquisition of all outstanding shares of Propshop (Model Makers) Limited (“Propshop”) which became voxeljet UK Ltd, headquartered in Milton Keynes. On November 30, 2015, we established our subsidiary voxeljet India Pvt. Ltd to pursue opportunities in the industrial 3D printing market in India. voxeljet India is headquartered in the city of Pune, a large automotive and manufacturing center near Mumbai. voxeljet China was established on April 11, 2016 and is located in the city of Suzhou, near Shanghai.

### D. PROPERTY, PLANTS AND EQUIPMENT

At December 31, 2018, we owned/leased the following five properties worldwide:

<u>Location</u>	<u>Primary Usage:</u>	<u>Area (Sq. Feet)</u>
<b>EMEA</b>		
Friedberg, Germany	Headquarters, production space, office space	135,380
Milton Keynes, UK	Production space, office space	10,021
<b>Asia Pacific</b>		
Pune, India	Office space	1,400
Suzhou, China	Production space, office space	7,400
<b>Americas</b>		
Canton, Michigan, USA	Production space, office space	50,000

We believe that our existing facilities are adequate for our current and foreseeable requirements. The facilities in Friedberg, Germany are owned by voxeljet, while the facilities in UK, India, China and the US are leased. On March 1, 2019, our Chinese subsidiary has moved into a new building which provides us with more than 78,000 square feet of production space, storage as well as office space.

### ITEM 4A. UNRESOLVED STAFF COMMENTS

None.



## ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

*You should read the following discussion and analysis of our financial condition and results of operations in conjunction with the section entitled “Item 3. Key Information—A. Selected Financial Data” and our audited financial statements and the related notes thereto included elsewhere in this annual report. In addition to historical financial information, the following discussion contains forward-looking statements that reflect our plans, estimates and opinions. Our actual results could differ materially from those discussed in these forward-looking statements. Factors that could cause or contribute to these differences or cause our actual results or the timing of selected events to differ materially from those anticipated in these forward-looking statements include those set forth under “Item 3. Key Information—D. Risk Factors,” “Special Note Regarding Forward Looking Statements” and elsewhere in this annual report.*

### A. OPERATING RESULTS

#### Overview

We are a leading provider of high-speed, large-format 3D printers and on-demand parts services to industrial and commercial customers. Our 3D printers employ a powder binding, additive manufacturing technology to produce parts using various material sets, which consist of particulate materials and proprietary chemical binding agents. We offer our customers the highest volumetric output rate in the industry due to the combination of our large build boxes and print speeds. We provide our 3D printers and on-demand parts services to industrial and commercial customers serving the automotive, aerospace, film and entertainment, art and architecture, engineering and consumer product end markets.

We currently offer seven different 3D printer platforms, with build boxes that range from 300 × 200 × 150 millimeters to 4,000 X 2,000 X 1,000 millimeters and various print speeds, which produce volumetric output rates ranging from 0.4 liters per hour to 123.0 liters per hour. All of our platforms support our commercialized material sets, sand and plastics, along with their respective proprietary chemical binding agents. We develop our material sets according to the needs of our industrial and commercial customers, and we are currently in varying stages of developing new material sets, including shell molding and chromite sands, PMMA-based plastics, ceramics, silicon carbide, tungsten carbide, wood powder and cement.

We believe that our innovations in 3D printers will continue to increase customer adoption of our additive manufacturing technology in industrial and commercial applications.

Our business is divided into two segments: Systems and Services.

In our Systems segment, we focus on the development, production and sale of 3D printers. In addition, we sell refurbished 3D printers which were produced for and used in our Services segment. Before these 3D printers are sold, they are fully refurbished and a new printhead is installed. We also provide consumables, including particulate materials and proprietary chemical binding agents, maintenance contracts, extended warranty contracts and spare parts to our customers.

In our Services segment, we print on-demand custom parts for our customers. At our service centers, we create parts, molds, cores and models based on designs produced using 3D computer-aided design, or CAD, software.

We sold our first 3D printer in 2002 and commenced our on-demand parts services business in 2003. As of December 31, 2018, we had an installed base of 171 printers worldwide, and we operated service centers in Germany, the United States, the United Kingdom and China.

Our revenues were € 26.0 million, € 23.2 million, and € 22.3 million for the years ended December 31, 2018, 2017, and 2016, respectively.

Our net loss increased by € 0.2 million to a net loss of € 8.8 million in 2018 compared to a loss of € 8.6 million in 2017. In 2016 our net loss increased by € 1.7 million to a net loss of € 11.3 million compared to a loss of € 9.6 million in 2015.



### **Seasonality**

Historically, our results of operations have been subject to seasonal factors. Purchases of our 3D printers often follow a seasonal pattern owing to the capital budgeting cycles of our customers. Generally, 3D printer sales are higher in our second and fourth fiscal quarters than in our first and third fiscal quarters. Sales in our Services segment generally are not affected by seasonality. See “Item 3. Key Information—D. Risk Factors—Risks Related to Our Business and Industry—Our revenues and operating results may fluctuate.”

### **Currency**

As of December 31, 2018, we had operations in Germany, the United Kingdom, the United States, China and India. As a result, our revenue and earnings have exposure to a number of currencies, primarily the Euro, the U.S. dollar, the British Pound Sterling and the Chinese renminbi. As our presentation currency is the Euro, and the functional currencies of the businesses located outside of the Europe are primarily the U.S. dollar, the results of the businesses located outside of Europe must be translated each period to Euros. The financial statements of foreign subsidiaries are translated using the concept of the functional currency in accordance with IAS 21. The assets and liabilities of foreign subsidiaries are translated at the spot rate at the end of the period, while their income statement items are translated at average exchange rates for the respective periods. All resulting exchange differences are recognized in other comprehensive income. Gains and losses on foreign currency transactions primarily due to intercompany loans given to our subsidiaries are shown within other operating income and other operating expenses, respectively, in the consolidated statement of comprehensive loss. This calculation may differ from similarly titled measures used by other companies and, accordingly, the changes excluding the effect of foreign currency translation are not meant to substitute for changes in recorded amounts presented in conformity with IFRS nor should such amounts be considered in isolation.

We do not manage our foreign currency exposure in a manner that would eliminate the effects of changes in foreign exchange rates. Therefore, changes in exchange rates between these foreign currencies and the Euro will affect our revenues, cost of goods sold, and operating margins, and could result in exchange losses in any given reporting period.

### **Growth Strategy**

Our business strategy focuses on (i) growing our Services segment in order to print more parts for our existing customers and gain new customers in Europe, Asia Pacific and Americas and (ii) using our knowledge and market position to increase sales of our 3D printers. Our growth strategy is also dependent in part on continuing our investment in research and development activities, which should enable us to meet the needs of our target customers through the development of new material sets and 3D printers with faster print speeds. Expanding our business to realize our growth strategy may require additional investments of capital from time to time, and our existing sources of cash and any funds generated from operations may not provide us with sufficient capital. For various reasons additional financing may not be available when required, or may not be available on terms favorable to us. If we fail to obtain adequate cash sources on a timely basis or if funds cannot be obtained at reasonable costs, we may not be able to achieve our planned rate of growth, which will adversely affect our results of operations.

We intend to develop our customer base internationally, so that our revenues are not dependent on sales to any one region. We also seek to grow both our Systems and Services segments so that we are not overly reliant on either segment. We believe that this strategy will help to offset some of the variability in the Systems segment, which can be more susceptible to macroeconomic trends.

### **Outlook**

We believe that interest in additive manufacturing is increasing as a result of increased commercialization of 3D printers and recent media attention worldwide. We occupy a defined space in the additive manufacturing market because of the size of our machines and their ability to print industrial products from qualified industrial materials. While our 3D printers may differ from those of many other additive manufacturing companies, we expect an increase in additive manufacturing to generally have a positive effect on the public’s awareness of our industry.

Furthermore, we believe that additive manufacturing provides several advantages over traditional design and manufacturing processes, including:

- Elimination of design constraints;
- Reduced cost of complexity;
- Mass customization;
- Reduced time to market; and
- Cost effective short run production.

There are a number of available additive manufacturing technologies, including powder binding, inkjet, fused deposition modeling, stereolithography and selective laser sintering. These technologies differ on the basis of accuracy, surface quality, variety and properties of consumables, capacity, speed, color variety, transparency and the ability to print multiple materials, among other factors. Our 3D printers employ a powder binding technology to produce parts using various material sets. Powder binding is a process in which layers of powder are bonded by a liquid agent that is deposited through a printhead. We believe this process has the fastest build speeds and the lowest materials cost relative to other additive manufacturing technologies.

We believe that our investments in additional capacity in continental Europe and service centers in the United States, the United Kingdom, and China should position us to generate growth in our Services segment in the future.

We also must expend significant time and resources remediating material weaknesses in our internal controls over financial reporting.

### **Key Measures of Our Business**

We use several financial and operating metrics to measure our business. We use these metrics to assess the progress of our business, make decisions on where to allocate capital, time and technology investments, and assess the longer- term performance of our marketplace. The key metrics are as follows:

#### ***Revenues***

Our revenues are generated primarily by sales of our new or used and refurbished 3D printers, consumables and custom 3D printed parts produced at our service centers. We operate in two segments: Systems and Services. The Systems segment derives its revenues from the sale of new or used and refurbished 3D printers and products and services related to our 3D printers, including consumables, which include particulate materials and proprietary chemical binding agents, maintenance contracts and spare parts. Systems revenue also includes revenues associated with the leasing of 3D printers to customers; however, revenues related to the leasing of 3D printers is not material. Within the Systems segment, we also report revenues from tailoring and development services. The Services segment derives its revenues from the on-demand printing of parts at our service centers.

Our revenues are influenced by:

- global macroeconomic conditions;
- the adoption rate of our 3D printers and material sets;
- our ability to develop new products and technologies that address the increasingly sophisticated and varied needs of prospective end-users, particularly with respect to the physical properties of print materials and other consumables;
- the capital expenditure budgets of our potential customers;
- the amount of design and manufacturing activity; and

- the adoption of additive manufacturing technology in various industries.

Sales of our 3D printers, particularly our higher-priced systems, typically involve long sales cycles, are subject to seasonality and can be difficult to forecast. Because each of our printers can represent a significant amount of revenues, a delay in a purchasing decision, our production schedule or the shipment of a printer can have a material impact on our periodic reporting of revenues.

From time to time, refurbished 3D printers which have been operating at the Company's service centers are routinely sold to customers. Before these 3D printers are sold, they are generally fully refurbished, a process which includes the installation of a new printhead. On average, these refurbished printers have been operating within the service center for 1.5 to 2.5 years prior to their sale. The proceeds from the sale of such refurbished 3D printers are recognized as Systems revenues.

### ***Gross Profit***

Our gross profit and gross profit margin for our Systems and Services segments are mainly influenced by materials, labor and energy costs. In particular, the gross profit margin in our Systems segment on sales of our 3D printers also depend on the type and status of the sold products. Sales of refurbished printers manufactured by us typically generates lower gross profits compared to sales of new 3D printers. Inventory reserves also impact our gross profit and related margin.

### ***EBITDA***

Our EBITDA (earnings before interest and other financial result, taxes, depreciation and amortization) is mainly influenced by the gross profit from our Systems segment and Services segment as well as from the operating expenses from the functions research and development, administration and sales and marketing. In addition, other operating expense and other operating income including gains and losses from foreign exchange transactions have an impact on EBITDA. The gross profit from our Systems segment is mainly driven by materials, labor and energy costs as well as movements in inventory reserves. The gross margin drivers for our Services segment relate to revenues, materials, labor and energy costs as well as facility costs. Costs for the non-productive functions is influenced primarily by labor. Research and development expenses are partially driven by materials. One of the main drivers of expenses for the administrative function is legal fees as well as accounting and auditing fees while sales and marketing expenses are also influenced by commissions for sales agents.

### ***Adjusted EBITDA***

The Company uses Adjusted EBITDA as a supplemental financial measure of its financial performance. Adjusted EBITDA is defined as net income (loss), as calculated under IFRS accounting principles, interest (income) expense, provision (benefit) for income taxes, depreciation and amortization, and excluding other (income) expense resulting from foreign exchange gains or losses on the intercompany loans granted to the subsidiaries. Management believes Adjusted EBITDA to be an important financial measure because it excludes the effects of fluctuating foreign exchange gains or losses on the intercompany loans granted to its subsidiaries which are difficult to forecast for future periods.

Management regularly uses both IFRS and non-IFRS results and expectations internally to assess its overall performance of the business, making operating decisions, and forecasting and planning for future periods. Management believes that Adjusted EBITDA is a useful financial measure to the Company's investors as it helps investors better understand and evaluate the projections our management board provides. The Company's calculation of Adjusted EBITDA may not be comparable to similarly titled financial measures reported by other peer companies. Adjusted EBITDA should not be considered as a substitute to financial measures prepared in accordance with IFRS.

While the Company provides guidance for Adjusted EBITDA on a forward-looking basis, a reconciliation of the differences between the non-IFRS expectation and the corresponding IFRS measure (expected net income (loss)) is not available without unreasonable effort due to potentially high variability, complexity and low visibility as to the items that would be excluded from the IFRS measure in the relevant future period, such as unusual gains and losses, fluctuations in foreign currency exchange rates, the impact and timing of potential acquisitions and divestitures, and

other structural changes or their probable significance. The variability of the excluded items may have a significant, and potentially unpredictable, impact on our future IFRS results.

### Critical Accounting Policies and Significant Estimates

Please refer to “Note 5. Critical accounting judgment and key sources of estimation and uncertainty in item 18.”

### Statements of Comprehensive Loss

#### Year Ended December 31, 2018 compared to Year Ended December 31, 2017

The following table sets forth certain statements of comprehensive loss data both on an actual basis and as a percentage of revenues for the periods indicated:

	Year Ended December 31,				Period-over-period change (€ in thousands)
	2018		2017 <sup>(i)</sup>		
	Amount (€ in thousands)	Percentage of revenues	Amount (€ in thousands)	Percentage of revenues	
Revenues	€ 26,009	100%	€ 23,178	100%	€ 2,831
Cost of sales	16,864	64.8	13,853	59.8	3,011
Gross profit	9,145	35.2	9,325	40.2	(180)
Selling expenses	7,332	28.2	6,474	27.9	858
Administrative expenses	5,587	21.5	5,129	22.1	458
Research and development expenses	6,334	24.4	5,528	23.9	806
Other operating expenses	751	2.9	1,844	8.0	(1,093)
Other operating (income)	(1,297)	5.0	(1,001)	4.3	(296)
Operating loss	(9,562)	36.8	(8,649)	37.3	(913)
Finance expense	1,143	4.4	190	0.8	953
Finance (income)	(1,952)	7.5	(365)	1.6	(1,587)
Financial result	(809)	(3.1)	(175)	(0.8)	(634)
Net loss before income taxes	(8,753)	33.7	(8,474)	36.6	(279)
Income taxes	(11)	0.0	(80)	0.3	69
Net Loss	€ (8,764)	33.7%	€ (8,554)	36.9%	€ (210)

<sup>(i)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Part III, Item 18. Financial Statements, Note 6.

### Summary

Our revenues increased by € 2.8 million, or 12%, to € 26.0 million in 2018 from € 23.2 million in 2017. This was mainly due to the increase in revenues from our Services segment amounting to € 2.1 million, mainly due to contributions from the German operation, voxeljet America as well as voxeljet UK. Systems revenues increased by € 0.7 million year-over-year, mainly related to an increase in the number of printer sales.

Despite the increase in revenues, we were not able to improve our gross profit, which shows a slight decrease from € 9.3 million in 2017 to € 9.1 million in 2018. This decrease of € 0.2 million was due to the decrease in gross margin of both segments Systems and Services. In our Services segment, we received higher gross profit contribution from our subsidiaries voxeljet America and voxeljet UK. Regarding the German operation and voxeljet China, gross profit contribution decreased. Gross profit at the German operation decreased due to the replacement of a higher number of printheads of our 3D printers running in our German service center. Gross profit from voxeljet America and voxeljet UK improved due to a higher utilization rate of our service centers. The higher utilization regarding our American subsidiary was mainly related to a volume contract which started in July 2018 with a revenue contribution of € 1.1 million. The decrease of gross profit within the System segment was related to weaker gross profit from 3D printer sales, while gross profit contribution from system-related goods and services almost remained the same. Our consolidated gross profit margin was 35% in 2018 compared to 40% in 2017. In the next years, we expect our gross profit margin to stabilize to approximately 40%.

Our operating loss increased by € 1.0 million to a loss of € 9.6 million in 2018 from a loss of € 8.6 million in 2017. This is mainly due to higher operating expenses related to sales and marketing, administration and research and development with an increase of € 0.9 million, € 0.5 million and € 0.8 million, respectively, in combination with the slight decrease in gross profit of € 0.2 million. This was partially offset by lower other operating expenses and higher other operating income resulting in a positive net impact of € 1.4 million.

### **Revenues by Segment**

The table below sets forth the change in revenues by segment from 2017 to 2018:

	<b>Year Ended December 31,</b>		<b>period-over- period change</b>
	<b>2018</b>	<b>2017</b>	
	<b>(€ in thousands)</b>		
Systems	€ 12,248	€ 11,534	€ 714
Services	13,761	11,644	2,117
<b>Total Revenues</b>	<b>€ 26,009</b>	<b>€ 23,178</b>	<b>€ 2,831</b>

Revenues from the Systems segment for 2018 were € 12.2 million, representing a 6.1% increase over revenues of € 11.5 million in 2017. The Company sold fourteen new and five used and refurbished 3D printers during the year ended December 31, 2018 compared to ten new and five used and refurbished 3D printers in the prior year period. In 2018 we sold a higher number of smaller printers which usually have a lower gross profit margin.

Revenues from the Services segment for 2018 were € 13.8 million, which represents an increase of € 2.2 million or 19.0% over revenues of € 11.6 million in 2017. This increase was mainly due to a higher revenue contribution from our subsidiary voxeljet America. The German operation and voxeljet UK also contributed higher revenues within this segment. This was partially offset by a lower revenue contribution by our service center of voxeljet China. The increase in revenue at our German service center is due to the robust economy in the European market. The growth in revenue at our American service center and UK service center resulted from an increasing market penetration in the respective sales regions which is accompanied by a larger customer base.

### **Revenues by Geographic Region**

The table below sets forth the change in revenues by geographic region from 2017 to 2018:

	<b>Year Ended December 31, 2018</b>		<b>Year Ended December 31, 2017</b>	
	<b>Revenues</b>	<b>Percentage</b>	<b>Revenues</b>	<b>Percentage</b>
	<b>(€ in thousands)</b>		<b>(€ in thousands)</b>	
EMEA	14,673	56.4%	14,832	64.0%
Asia Pacific	5,450	21.0	2,526	10.9
Americas	5,886	22.6	5,820	25.1
<b>Total</b>	<b>26,009</b>	<b>100.0%</b>	<b>23,178</b>	<b>100.0%</b>

We generated more than 55% of our revenues in the EMEA region with a declining relative proportion of our revenues. The portion of revenues in the Asia Pacific region increased due to higher printer sales, which was partially offset by decreased sales from our Services segment. The growing revenues related to system sales within the Asia Pacific region reflects the growing interest in the market in our products as well as the opportunities generated by our subsidiary voxeljet China.

### **Gross Profit and Gross Profit Margin**

Total gross profit for 2018 slightly decreased, which was related to both the Systems and Services segments, while total gross profit margin significantly decreased. The main drivers were the German operation as well as voxeljet China with decreases in both gross profit and gross profit margin. At the German operation, gross profit margin for Systems decreased due to a different product mix of systems sold in 2018 than in 2017. In 2018, we sold a higher number of smaller 3D printers, which usually have a lower gross profit margin. Gross profit margin for Services decreased at the German operation due to the replacement of a higher number of printheads of our 3D printers running in

our German service center, especially for our largest systems. This was partially offset by improved gross profit and gross profit margin contributions from our U.S. subsidiary, voxeljet UK slightly improved both values, as well. Overall, our gross profit margin decreased from 40% in 2017 to 35% in 2018.

The table below sets forth gross profit and gross profit margin for our Systems and Services segments for the presented periods:

	<b>Year Ended December 31, 2018</b>		<b>Year Ended December 31, 2017 <sup>(i)</sup></b>		<b>Period-over- period change</b>
	<b>Amount</b>	<b>Gross margin as percentage of relevant segment revenues</b>	<b>Amount</b>	<b>Gross margin as percentage of relevant segment revenues</b>	
	<b>(€ in thousands)</b>		<b>(€ in thousands)</b>		
Systems	€ 3,708	30.3%	€ 4,258	36.9%	€ (550)
Services	5,437	39.5	5,067	43.5	370
<b>Total</b>	<b>€ 9,145</b>	<b>35.2%</b>	<b>€ 9,325</b>	<b>40.2%</b>	<b>€ (180)</b>

<sup>(i)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Part III, Item 18. Financial Statements, Note 6.

Gross profit for our Systems segment slightly decreased to € 3.7 million in 2018 from € 4.3 million in 2017, while the gross profit margin moderately declined, with a 6.6% decrease to 30.3% in 2018 from 36.9% in 2017. This was mainly due to lower gross profit and gross profit margin from 3D printer sales, which was influenced by a less favorable product mix. Gross profit margin from system-related goods and services, including consumables, spare parts and maintenance, remained almost flat. In 2018 we reduced the reserve for slow-moving inventory with a positive impact of € 0.4 million, compared to a positive impact of € 0.5 million in 2017.

Gross profit for our Services segment in 2018 amounted to € 5.4 million, and therefore increased slightly by € 0.3 million compared to 2017. The gross profit margin decreased from 43.5% in 2017 to 39.5% in 2018. This was mainly related to weaker gross profit contributions from the German service center as well as the Chinese service center. Gross profit margin for Services decreased at the German service center due to several replacements of printheads of our 3D printers. This was partially offset by improved contributions from voxeljet America and voxeljet UK. The gross profit margin from these two service centers improved gross margin due to a higher utilization rate of their equipment related to an increased number of orders. The higher utilization at our U.S. subsidiary was mainly related to a volume contract which began in July 2018 with a revenue contribution of € 1.1 million.

### **Operating Expenses**

As shown in the table below, total operating expenses increased to € 18.7 million in 2018 compared to € 18.0 million in 2017, but decreased to 71.9% of revenues in 2018 compared to 77.5% in 2017. This increase was related to the increase in revenues. Administrative expenses increased by € 0.5 million from € 5.1 million in 2017 to € 5.6 million in 2018. This was mainly due to the significant increase in headcount resulting in higher personnel expenses. The increase in selling expenses from € 6.5 million in 2017 to € 7.3 million in 2018 was almost in line with the increase in revenues. The increase in research and development expenses from € 6.3 million in 2018 compared to € 5.5 million in 2017 was mainly due to higher labor costs related to salary increases and a higher headcount as well as a higher consumption of materials to support existing and future research and development projects.

In 2018, we continued to invest in research and development. Our research and development expenses amounted to 24.4% of our revenues in 2018. Therefore the ratio remained almost unchanged compared to 2017.

	Year Ended December 31,				
	2018		2017		Period-over-period change (€ in thousands)
	Amount	Percentage of revenues	Amount	Percentage of revenues	
(€ in thousands)		(€ in thousands)			
<b>Operating expenses</b>					
Selling expenses	€ 7,332	28.2%	€ 6,474	27.9%	€ 858
Administrative expenses	5,587	21.5	5,129	22.1	458
Research and development expenses	6,334	24.4	5,528	23.9	806
Other operating expenses	751	2.9	1,844	8.0	(1,093)
Other operating (income)	(1,297)	(5.0)	(1,001)	(4.3)	(296)
<b>Total</b>	<b>€ 18,707</b>	<b>71.9%</b>	<b>€ 17,974</b>	<b>77.5%</b>	<b>€ 733</b>

Administrative expenses mainly included personnel expenses as well as consulting fees. The majority of our selling expenses related to personnel expenses and distribution expenses including freight and commissions for sales agents.

#### *Other operating income and expenses*

Other operating expenses for the year ended December 31, 2018 were kEUR 751 compared to kEUR 1,844 in the prior year period. This is mainly due to lower losses from foreign currency translations. Foreign currency losses amounted to kEUR 511 for the year ended December 31, 2018, compared to kEUR 1,585 in the same period in 2017. The losses from foreign currency transactions were primarily driven by the valuation of the intercompany loans granted by the parent company to our US and UK subsidiaries.

Other operating income was kEUR 1,297 for the year ended December 31, 2018 compared to kEUR 1,001 in the prior year period. The increase was mainly due to higher gains from foreign currency transactions of kEUR 794 in 2018 compared to kEUR 135 in 2017.

#### *Operating Loss*

Operating loss and operating loss as a percentage of total revenues in 2018 and 2017 were as follows:

	Year Ended December 31,				
	2018		2017 <sup>(i)</sup>		Period-over-period change (€ in thousands)
	Amount	Percentage of revenues	Amount	Percentage of revenues	
(€ in thousands)		(€ in thousands)			
<b>Operating loss</b>	<b>€ (9,562)</b>	<b>-36.8%</b>	<b>€ (8,649)</b>	<b>-37.3%</b>	<b>€ (913)</b>

<sup>(i)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Part III, Item 18. Financial Statements, Note 6.

We had an operating loss of € 9.6 million in 2018, a decrease of € 1.0 million compared to an operating loss of € 8.6 million in 2017. This is mainly due to higher operating expenses related to sales and marketing, administration and research and development which increased € 0.9 million, € 0.5 million and € 0.8 million, respectively, in combination with the slight decrease in gross profit of € 0.2 million. This was partially offset by lower other operating expenses and higher other operating income, which resulted in a positive net impact of € 1.4 million.



**Financial Result**

	Year Ended December 31,	
	2018	2017
	(€ in thousands)	
Interest expense	1,143	190
Interest income	(1,952)	(365)
Financial result	(809)	(175)

We had a financial result of € 0.8 million in 2018, an increase of € 0.6 million compared to a financial result of € 0.2 million in 2017. This was due to higher interest income mainly from revaluation of the derivative financial instruments related to the EIB loan of € 1.1 million and higher interest expense mainly from long term debt.

**Year Ended December 31, 2017 compared to Year Ended December 31, 2016**

The following table sets forth certain statements of comprehensive loss data both on an actual basis and as a percentage of revenues for the periods indicated:

	Year Ended December 31,				
	2017 <sup>(i)</sup>		2016		Period-over-period change (€ in thousands)
	Amount	Percentage of revenues	Amount	Percentage of revenues	
(€ in thousands)		(€ in thousands)			
Revenues	€ 23,178	100%	€ 22,338	100%	€ 840
Cost of sales	13,853	59.8	15,435	69.1	(1,582)
Gross profit	9,325	40.2	6,903	30.9	2,422
Selling expenses	6,474	27.9	5,312	23.8	1,162
Administrative expenses	5,129	22.1	4,563	20.4	566
Research and development expenses	5,528	23.9	5,683	25.4	(155)
Other operating expenses	1,844	8.0	3,881	17.4	(2,037)
Other operating (income)	(1,001)	4.3	(1,417)	6.3	416
Operating profit (loss)	(8,649)	37.3	(11,119)	49.8	2,470
Finance expense	190	0.8	230	1.0	(40)
Finance (income)	(365)	1.6	(38)	0.2	(327)
Financial result	(175)	-0.8	192	0.9	(367)
Net profit (loss) before income taxes	(8,474)	36.6	(11,311)	50.6	2,837
Income taxes	(80)	0.3	(2)	0.0	(78)
Profit (loss)	€ (8,554)	36.9%	€ (11,313)	50.6%	€ 2,759

<sup>(i)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Part III, Item 18. Financial Statements, Note 6.

**Summary**

Our revenues increased by € 0.9 million, or 4%, to € 23.2 million in 2017 from € 22.3 million in 2016. This is due to the increase in revenues from our Services segment amounting to € 2.4 million, mainly due to contributions from the German operation as well as voxeljet America and voxeljet China. This increase was significantly offset by a decrease in revenues of € 1.5 million from our Systems segment, mainly related to a decline in the number of printer sales, partially offset by higher revenues from system-related goods and services, including consumables, spare parts and maintenance.

We were able to improve our gross profit from € 6.9 million in 2016 to € 9.3 million in 2017. This increase of € 2.4 million was mainly due to the increase in gross margin in the Services segment of € 1.3 million, as well as our Systems segment of € 1.1 million. In our Services segment, we received higher gross profit contribution from the German operation, our subsidiaries voxeljet America, as well as voxeljet China, which was established during the second

quarter of 2016. Gross profit from voxeljet America improved due to a higher utilization rate of our service center. The improvement regarding the German operation mainly relates to the increase in revenues due to a very strong economy in the central European market. The improvement within the System segment was mainly related to the reduction in the reserve for slow-moving inventory, with a positive impact of € 0.5 million in 2017, compared to a charge to cost of sales in 2016 of € 1.0 million. In the next years, we expect our gross profit margin to stabilize to approximately 40%. Our consolidated gross profit margin was 40% in 2017 compared to 31% in 2016.

Our operating loss decreased by € 2.5 million to a loss of € 8.6 million in 2017 from a loss of € 11.1 million in 2016. This is mainly due to the significant improvement of our gross profit amounting to € 2.4 million as well as the decline of other operating expenses amounting to € 2.0 million, partially offset by the increase of selling expenses amounting to € 1.2 million, due to higher personnel expenses mainly related to higher headcount. In addition, administrative expenses increased by € 0.6 million primarily due to higher consulting fees related to the preparation of several financing activities. Other operating income decreased by € 0.4 million related to lower gains from foreign exchange transactions. The decrease in other operating expenses related primarily to impairment charges of € 1.4 million recorded in the third quarter of 2016 related to voxeljet UK within other operating expenses and lower foreign exchange losses of approximately € 0.5 million in 2017 as compared to 2016.

### **Revenues by Segment**

The table below sets forth the change in revenues by segment from 2016 to 2017:

	<b>Year Ended December 31,</b>		<b>period-over-period change</b>
	<b>2017</b>	<b>2016</b>	
	<b>(€ in thousands)</b>		
Systems	€ 11,534	€ 13,081	€ (1,547)
Services	11,644	9,257	2,387
<b>Total Revenue</b>	<b>€ 23,178</b>	<b>€ 22,338</b>	<b>€ 840</b>

Revenues from the Systems segment for 2017 were € 11.5 million, a decrease of 12.2% over 2016. The Company sold ten new and five used and refurbished 3D printers during the year ended December 31, 2017 compared to fifteen new and three used and refurbished 3D printers in the prior year period.

Revenues from the Services segment for 2017 were € 11.7 million, which represents an increase of € 2.4 million or 24.7% over revenues of € 9.3 million in 2016. This increase was mainly due to a higher revenue contribution from the German operation and our subsidiaries voxeljet America and voxeljet China, which was established during the second quarter of 2016. The increase in revenue at our German service center is due to the robust economy on the European market. The growth in revenue at our American service center resulted from a growing market penetration in the respective sales regions which is accompanied by a bigger customer base. This was partially offset by a lower revenue contribution from voxeljet UK.

### **Revenues by Geographic Region**

The table below sets forth the change in revenues by geographic region from 2016 to 2017:

	<b>Year Ended December 31, 2017</b>		<b>Year Ended December 31, 2016</b>	
	<b>Revenues</b>	<b>Percentage</b>	<b>Revenues</b>	<b>Percentage</b>
	<b>(€ in thousands)</b>		<b>(€ in thousands)</b>	
EMEA	14,832	64.0%	13,364	59.8%
Asia Pacific	2,526	10.9	4,831	21.6
Americas	5,820	25.1	4,143	18.5
<b>Total</b>	<b>23,178</b>	<b>100.0%</b>	<b>22,338</b>	<b>100.0%</b>

We generated more than 60% of our revenues in the EMEA region with a growing relative proportion of our revenues. The portion of revenues in the Asia Pacific region declined due to lower printer sales, which was partially

offset by increased sales from our Services segment. The growing revenues within the Services segment in this region reflects the growing market awareness provided by our subsidiary in China. Regarding the Americas region, a portion of revenues increased due to both Systems and Services segments.

### **Gross Profit and Gross Profit Margin**

Total gross profit for 2017 significantly improved, which was mainly related to the stronger gross margin from our voxeljet America subsidiary in the Services segment. Our Systems segment also contributed to the improvement due to a timing effect on the release of inventory reserve in 2017. Overall, we were also able to improve our gross profit margin from 40% in 2017 compared to 31% in 2016.

The table below sets forth gross profit and gross profit margin for our Systems and Services segments for the presented periods:

	<b>Year Ended December 31, 2017 <sup>(i)</sup></b>		<b>Year Ended December 31, 2016</b>		<b>Period-over-period change</b>
	<b>Amount</b>	<b>Gross margin as percentage of relevant segment revenue</b>	<b>Amount</b>	<b>Gross margin as percentage of relevant segment revenue</b>	
Systems	€ 4,258	36.9%	€ 3,197	24.4%	€ 1,061
Services	5,067	43.5	3,706	40.0	1,361
<b>Total</b>	<b>€ 9,325</b>	<b>40.2%</b>	<b>€ 6,903</b>	<b>30.9%</b>	<b>€ 2,422</b>

<sup>(i)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Part III, Item 18. Financial Statements, Note 6.

Gross profit for our Systems segment increased to € 4.2 million in 2017 from € 3.2 million in 2016, and the gross profit margin was also higher, with an increase by 12.5% to 36.9% in 2017 from 24.4% in 2016. This was mainly due to a reduction in our reserve for slow-moving inventory amounting to € 0.5 million in 2017, in contrast to a charge of € 1.0 million to the reserve in 2016. In addition, the product mix from the Systems segment was less favorable compared to the prior year.

Gross profit for our Services segment in 2017 amounted to € 5.1 million, an increase of € 1.4 million compared to 2016. The gross profit margin increased from 40.0% in 2016 to 43.5% in 2017. This was mainly related to the increase in revenues, accompanied by a better utilization of the service centers regarding our subsidiaries voxeljet America and voxeljet China, which was established during the second quarter of 2016. As a consequence gross profit margins of voxeljet America as well as voxeljet China improved. The gross profit margin at our German operation remained constant, while the gross profit contribution from voxeljet UK decreased. The weaker gross profit margin from our service center in the UK was mainly due to a lower utilization.

### **Operating Expenses**

As shown in the table below, total operating expenses remained on the same level amounting to € 18.0 million in 2017 and € 18.0 million in 2016, and decreased to 77.5% of revenues in 2017 compared to 80.7% in 2016. This decrease was mainly due to a significant reduction regarding other operating expenses, showing a decline of € 2.0 million. In 2016, we recognized a € 1.4 million impairment related to voxeljet UK. In addition, net foreign losses of € 2.1 million in 2016 were lower in 2017 amounting to € 1.6 million. The improvement was significantly offset by higher selling expenses, showing an increase of € 1.2 million, mainly due to higher personnel expenses related to an increase in headcount of our sales force. The increase in administrative expenses was mainly related to higher costs related to new financing activities. Research and development expenses showed a slight decrease.

	Year Ended December 31,				Period-over-period change (€ in thousands)
	2017		2016		
	Amount (€ in thousands)	Percentage of revenues	Amount (€ in thousands)	Percentage of revenues	
<b>Operating expenses</b>					
Selling expenses	€ 6,474	27.9%	€ 5,312	23.8%	€ 1,162
Administrative expenses	5,129	22.1	4,563	20.4	566
Research and development expenses	5,528	23.9	5,683	25.4	(155)
Other operating expenses	1,844	8.0	3,881	17.4	(2,037)
Other operating (income)	(1,001)	(4.3)	(1,417)	(6.3)	416
<b>Total</b>	<b>€ 17,974</b>	<b>77.5%</b>	<b>€ 18,022</b>	<b>80.7%</b>	<b>€ (48)</b>

In 2017, we continued to invest in research and development. Our research and development expenses amounted to 23.9% of our revenues in 2017. Therefore the ratio remained almost unchanged compared to 2016.

Administrative expenses mainly included personnel expenses as well as consulting fees. The majority of our selling expenses were personnel expenses and distribution expenses such as freight and commissions for sales agents.

### **Operating Loss**

Operating loss and operating loss as a percentage of total revenues in 2017 and 2016 were as follows:

	Year Ended December 31,				Period-over-period change (€ in thousands)
	2017 <sup>(i)</sup>		2016		
	Amount (€ in thousands)	Percentage of revenues	Amount (€ in thousands)	Percentage of revenues	
<b>Operating loss</b>	€ (8,649)	-37.3%	€ (11,119)	-49.8%	€ 2,470

<sup>(i)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Part III, Item 18. Financial Statements, Note 6.

We had an operating loss of € 8.6 million in 2017, a decrease of € 2.5 million compared to an operating loss of € 11.1 million in 2016 as gross profit significantly improved.

### **Reconciliation of EBITDA to Net Loss**

	2018	2017 <sup>(i)</sup>	2016
	(€ in thousands)		
Net loss	€ (8,764)	€ (8,554)	€ (11,313)
Income taxes	11	80	2
Financial result	(809)	(175)	192
Depreciation and Amortization	3,506	3,163	2,542
<b>EBITDA</b>	<b>€ (6,056)</b>	<b>€ (5,486)</b>	<b>€ (8,577)</b>

<sup>(i)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Part III, Item 18. Financial Statements, Note 6.

## **B. LIQUIDITY AND CAPITAL RESOURCES**

As of December 31, 2018, we had cash and cash equivalents of € 7.4 million and held investments in seven bond funds of € 11.8 million and one note receivable of € 1.1 million. We believe these cash resources are sufficient to

finance our near-term growth strategy, which includes the development of our service centers in Germany, North America, the UK and China.

To meet the demand for our Services business and to increase capacity, we will require investment in additional printers to be used in our expanding Service operations. In 2019, we plan to invest in additional 3D printers at our service centers, especially *voxeljet China* and equipment in order to increase printing capacity as well as in our ERP-system.

Currently, we believe that our existing capital resources will be sufficient to support our business plan. If we anticipated that our actual results may differ from our business plan, we believe that we have sufficient capabilities to determine cost saving measures to preserve capital. Further, we are also contemplating other sources to raise additional capital to support our growth strategy through the issuance of additional debt, equity or other alternatives or a combination of those.

In 2016, we concluded new loan agreements with Kreissparkasse Augsburg, Germany, to finance the construction of new office and production facilities in Friedberg: (i) in May 2016, we entered into a € 1.0 million loan agreement due April 30, 2021. Interest is payable at a fixed rate of 2.35%; (ii) in September 2016, we entered into a € 2.0 million loan agreement due May 31, 2038. Interest is payable at a fixed rate of 2.47%; (iii) In October 2016, we entered into a € 0.7 million loan agreement due September 30, 2021. Interest is payable at a fixed rate of 2.29%; and (iv) in December 2016, we entered into a € 1.0 million loan agreement due January 31, 2038. Interest is payable at a fixed rate of 2.72%. Among other terms, the loan agreements contain (i) certain covenants, including that we deposit € 2.0 million with Kreissparkasse Augsburg until we have reached certain ratio (financial covenants) with respect to our ability to service the debt by the end of fiscal year 2019, and (ii) change of control provisions concerning the ownership of the Company by our executive officers, Dr. Ingo Ederer and Rudolf Franz. In case we fail to meet these financial covenants by the end of its fiscal year 2019, we are obliged to pledge € 2.0 million for the benefit of the lender. In addition, the land owned by us upon which the facilities have been built as well as three 3D printers serve as collateral under the loan agreements.

On November 9, 2017, the European Investment Bank (“EIB”) and the Company entered into a Finance Contract and Synthetic Warrant Agreement to support the Company’s undertaking of research and development projects for growth from 2017 to 2020. The contract provides a credit of up to € 25 million in three tranches of € 10 million, € 8 million, and € 7 million, respectively.

Under the Contract, the Company may borrow up to €25 million, subject to a limit of 50% of the total research and development expenditures and manufacturing capital expenditures from 2017 to 2020. The annual interest rates for the three tranches are 0%, 7% and 3%, respectively. The Company may draw down the second and third tranche only if certain revenue and EBITDA conditions are met. The Contract also includes a financial covenant that requires the Company to meet certain minimum financial ratios from 2019 to 2025. Under a First Demand Guarantee Agreement the Finance Contract is guaranteed by the voxeljet USA subsidiary.

The total research and development expenditures and manufacturing capital expenditures are expected to be €14.0 million and €16.2 million in the fiscal year 2019 and 2020, respectively.

Under the first tranche of €10 million received on December 22, 2017, the EIB under the Synthetic Warrant Agreement is entitled to receive cash consideration equal to the market value of 195,790 ordinary shares of the Company (or equivalent number of ADSs) at the maturity date (5 years after draw down), after the occurrence of a trigger event, or on the expiration date (10 years after draw down). Under the anti-dilution protection clause of the agreement, the number of ordinary shares under the Synthetic Warrant Agreement was increased to 254,527 as a result of the capital increase effective October 17, 2018 and November 1, 2018.

As of December 31, 2018 we had available lines of credit with two German banks totaling € 0.2 million. Interest rates across the credit lines varied from 5.15% to 6.80% as of December 31, 2018.

## Cash Flow

Our primary sources of cash in 2018 were our capital increase, revenues and cash reserves. Our primary uses of cash have traditionally been to finance our operations (to the extent our operating costs exceed revenues), assets and our working capital.

The table below sets forth cash flows from operating, investing and financing activities for 2016, 2017 and 2018:

	2018	2017	2016
	(€ in thousands)		
Cash provided by (used in) operating activities	€ (7,714)	€ (6,830)	€ (13,338)
Cash provided (used in) investing activities	(2,027)	(4,935)	15,466
Cash provided by (used in) financing activities	9,544	11,279	3,616
Increase (decrease) in cash and cash equivalents	€ (197)	€ (486)	€ 5,744

Our cash and cash equivalents slightly decreased from € 7.6 million at December 31, 2017 to € 7.4 million at December 31, 2018. In 2018 we invested a significant portion of the cash received from the capital increase in bond funds, offset by proceeds from sale of certain investments of € 11.3 million. The total amount of short-term financial assets decreased by € 1.1 million from € 14.0 million at December 31, 2017 to € 12.9 million at December 31, 2018.

Our cash and cash equivalents slightly decreased from € 7.8 million at December 31, 2016 to € 7.6 million at December 31, 2017. In 2017 we invested a significant portion of the cash received from EIB in bond funds, offset by proceeds from sale of certain investments of € 4.1 million. The total amount of short term financial assets increased by € 1.4 million from € 12.6 million at December 31, 2016 to € 14.0 million at December 31, 2017.

### *Operating Activities*

Net cash used in operating activities was € 7.7 million for the year ended December 31, 2018 compared to cash used in operating activities of € 6.8 million for the year ended December 31, 2017, an increase in cash used of € 0.9 million. This was primarily due to the effect of changes in operating assets and liabilities, including working capital.

Net cash used in operating activities was € 6.8 million for the year ended December 31, 2017 compared to cash used in operating activities of € 13.3 million for the year ended December 31, 2016, a decrease in cash used € 6.2 million. This was primarily due to the effect of changes in operating assets and liabilities, including working capital.

### *Investing Activities*

Investing activities consist primarily of capital expenditures to support our growth and investments in bond funds. In 2018, we spent the majority of our capital expenditure on our production facility in the United States of America. We invested € 10.1 million of the proceeds from the capital increase into bond funds in 2018 compared to € 5.5 million in 2017. In 2018, we sold € 11.3 million of our investments, as compared to € 4.1 million in 2017.

We invested approximately € 1.8 million in infrastructure, plant and machinery as well as equipment compared to € 3.6 million in 2017.

### *Financing Activities*

In 2018, financing cash flows consisted primarily of the proceeds from the capital increase amounting to € 11.1 million.

In 2017, financing cash flows consisted primarily of the proceeds from long-term debt amounting to € 12.6 million in relation to the EIB loan as well as further loans related to the construction of our new office and production facilities in Friedberg.

In 2016, financing cash flows consisted primarily of the proceeds from long-term debt amounting to € 4.3 million in relation to the construction of our new office and production facilities in Friedberg and the redemption from sale and lease back transactions amounting to € 0.5 million.

### C. RESEARCH AND DEVELOPMENT, PATENTS AND LICENSES

Research and development is a key part of our strategy to develop new material sets and enhancements to our 3D printers. Our research and development expenses totaled € 6.3 million, € 5.5 million, and € 5.7 million for the years ended December 31, 2018, 2017, and 2016, respectively. For further information on our policies and practices regarding research and development, see “Item 4. Information on the Company—B. Business Overview—Research and Development.”

### D. TREND INFORMATION

Other than as disclosed elsewhere in this annual report, we are not aware of any trends, uncertainties, demands, commitments or events for the year ended December 31, 2018 that are reasonably likely to have a material adverse effect on our revenues, profitability, liquidity or capital resources, or that would cause the disclosed financial information to be not necessarily indicative of future operating results or financial conditions. The target for the next years is to become cash neutral, and in addition to identify further funding sources.

### E. OFF BALANCE SHEET ARRANGEMENTS

We are not a party to any off balance sheet arrangements.

### F. TABULAR DISCLOSURE OF CONTRACTUAL OBLIGATIONS

#### *Contractual Obligations*

Future contractual payments as of December 31, 2018 consisted of long-term debt, operating leases and finance leases, which are discussed in greater detail below.

	December 31, 2018				
	(€ in thousands)				
	Total	Less than a year	1-3 years	3-5 years	More than 5 years
Bank overdrafts, lines of credit and long-term debt	22,529	959	1,518	15,251	4,801
Leases:					
Operating	2,457	503	1,590	364	--
Finance	109	36	56	17	--
Total	25,095	1,498	3,164	15,632	4,801

#### **Leases**

##### *Operating*

We have entered into various operating leases for certain manufacturing facilities, office and warehouse spaces, equipment and vehicles. We expect leases that expire to be renewed or replaced by leases on other properties. Rental expense amounted to € 0.3 million, € 0.1 million, and € 0.1 million in 2018, 2017, and 2016, respectively.

##### *Finance*

Our finance leases relate primarily to production machinery.

### G. SAFE HARBOR

See “Special Note Regarding Forward Looking Statements” on page 1 of this annual report.



## ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

### A. DIRECTORS AND SENIOR MANAGEMENT

#### Supervisory Board

The following table sets forth the names and functions of the current members of our Supervisory Board, their ages, their terms (which expire on the date of the relevant year's annual general shareholders' meeting) and their principal occupations outside of our company as of March 1, 2019:

<u>Name</u>	<u>Age</u>	<u>Term Expires</u>	<u>Principal occupation</u>
Peter G. Nietzer (Chairman)	58	2019	Managing director of asset management firm
Dr. Stefan Söhn (Vice Chairman)	64	2019	CFO, consultant and lawyer
Eberhard Weiblen (Member)	54	2019	Management Consultant

The business address of the members of our Supervisory Board is the same as our business address: voxeljet AG, Paul-Lenz-Straße 1a, 86316 Friedberg, Germany. Our Supervisory Board has determined that all members of our Supervisory Board are independent under German law and the New York Stock Exchange Listed Company Manual.

The following is a brief summary of the business experience of the members of our Supervisory Board:

**Peter Nietzer**, born in 1960 in Heilbronn, Germany, has been the chairman of our Supervisory Board since July 2, 2013. Mr. Nietzer has served as owner and managing director of KITES Industriebeteiligungen GmbH, a private investment holding company, and of M59 Advisory Services, since January 2013 and as Partner and Chief Financial Officer of GermanCapital GmbH, a private equity company he co-founded and that specializes in mid-market buy-outs, since July 2005. Mr. Nietzer has served as well as a Non-Executive Director of Cognis Credit Opportunities Fund Ltd., Cognis Credit Opportunities Master Fund Ltd. and Cognis Credit Opportunities Manager (Cayman) Ltd. since September 2013 until December 31, 2016. Since April 2000, Mr. Nietzer has been an executive board member and Managing Partner of Felicitas GmbH (which was previously known as GI Ventures AG), a fund management company he helped found. Mr. Nietzer served as a Managing Director in the private equity unit of Partners Group AG from January to October 2011. Mr. Nietzer holds a M.B.A. from Friedrich-Alexander University Erlangen-Nürnberg, Germany. We believe that Mr. Nietzer's over 18 years of experience in private equity and venture capital and his previous roles as a Supervisory Board member provide him with valuable insight into our business, particularly in the areas of financing and acquisition opportunities, while his focus on technology companies gives him insight into our operations and industry. In addition, Mr. Nietzer's work as a chief financial officer provides the Supervisory Board with expertise in financial matters.

**Dr. Stefan Söhn**, born in 1954 in Düsseldorf, Germany, has been the vice chairman of our supervisory board since July 2, 2013. Since January 2010, Dr. Söhn has served as a Partner and Managing Director of MultiTrust Capital Partners GmbH (formerly MBL China Consulting GmbH), as owner and manager of Söhn Industrial Consulting and Head of China Desk of Sonntag & Partner Wirtschaftsprüfer, Steuerberater, Rechtsanwälte in Augsburg and Munich, Germany (until 2014). Dr. Söhn held executive positions at KUKA Systems GmbH, an equipment supplier to the automotive industry, from July 2000 to December 2009, serving as its Chief Financial Officer from July 2000 to December 2006 and as its Chief Executive Officer from January 2007 to December 2009. Since April 2018 Dr. Söhn has been serving as CFO for Andreas Schmid Logistik AG. During his time at KUKA Systems GmbH, Dr. Söhn led the successful expansion of its business in Asia. Dr. Söhn holds a law degree from the University of Augsburg, Germany and a Master of Science in Management for the London Business School.

**Eberhard Weiblen**, born in 1964 in Metzingen, Germany, is a member of our Supervisory Board since May 2017. Since 1995, Mr. Weiblen is part of Porsche Consulting in Germany. He was the sole managing director between 1998 and 2007 and has been the chairman of the board of directors ever since. In addition Mr. Weiblen serves as Chairman of the Shareholders' Committee of Porsche Consulting S.r.l., Milan, Italy, Porsche Consulting, Inc., Atlanta, USA and Porsche Consulting Ltd., Shanghai, China. His great wealth of experience in business management and consultation, for international projects with focus in the automotive and mechanical engineering industry, makes him a seamless fit for the voxeljet AG. Before his career, he has gained extensive experience in consulting at the tax and accounting consulting agency Arthur Andersen. Mr. Weiblen studied technically oriented business administration at the University of Stuttgart, Germany, with a focus on controlling, marketing, and manufacturing engineering.

## Management Board

The following table sets forth the names and functions of the current members of our Management Board, their ages and their terms as of March 1, 2019:

Name	Age	Term Ends	Position
Dr. Ingo Ederer	51	June 30, 2021	Chief Executive Officer
Rudolf Franz	51	June 30, 2021	Chief Financial Officer, Chief Operating Officer

The business address of the members of our Management Board is the same as our business address: voxeljet AG, Paul-Lenz-Straße 1a, 86316 Friedberg, Germany.

The following is a brief summary of the business experience of the members of our Management Board:

**Dr. Ingo Ederer**, born in 1967 in Weilheim, Germany, is one of our founders and is the key inventor of our technology. He has served as our Chief Executive Officer since 2013. Dr. Ederer co-founded our company as Generis GmbH in 1999 and served as our Managing Director from our incorporation in 1999 to 2013, building up the company from the start-up phase to become a leading provider of 3D printers for industrial and commercial customers. After graduating with a degree in mechanical engineering from the Technical University of Munich in 1993, Dr. Ederer started his career as researcher at the department of precision engineering at the Technical University of Munich where he received his Ph.D. in 2000 with a thesis on piezo-based micro-jetting devices. He contributes more than 20 years of experience in the 3D printing equipment market and is a holder of more than 50 patents in the field of 3D printing.

**Rudolf Franz**, born in 1967 in Friedberg, Germany, has been one of our shareholders through his venture fund Franz Industriebeteiligungen AG since 2003. Since 2003 he is focusing as Chief Operation Officer on marketing and sales, finance and controlling and administration. In addition, he has held the position of Chief Financial Officer since 2013. Mr. Franz has been a member of the supervisory board of FORUM Media Group GmbH since 2015. Mr. Franz has been the chairman of the supervisory board of Rettenmeier Holding AG from 2011 until 2014. From 2007 to 2009, Mr. Franz served as the Chairman of the supervisory board of Hama Holding GmbH and from 2005 to 2009 as the chairman of the supervisory board of Wavelight AG. In 1995, Mr. Franz was appointed as investment manager of Technologieholding VC GmbH, an international venture capital fund that invested in European technologies, and became partner in 1997, where he was responsible for managing the Munich investment team. After he sold his shares in Technologieholding VC GmbH to 3i Group plc in 2000, Mr. Franz served as Managing Director of 3i Group plc and was responsible for technology investments in the German-speaking market from 2000 to 2002. Mr. Franz studied political economics and industrial engineering at the University of Augsburg and the University of Munich and earned a master's degree from the University of Applied Science Munich in 1991.

## B. COMPENSATION

### Compensation of Management Board Members

We have entered into service agreements with the current members of our Management Board. These agreements generally provide for an annual fixed compensation (base salary), an annual performance award (annual bonus) with a target of up to 30% of the yearly base salary, as well as a long-term performance award for a three-business-year period (long-term bonus) with a target of up to 100% of the yearly base salary. The performance targets of the annual and long-term bonuses are a mixture of certain financial and non-financial targets, such as revenue and profitability goals, as well as EBITDA goals. In addition to the fixed and variable remuneration components, under the terms of their service agreements, the members of our Management Board are entitled to additional benefits (including company car arrangements, mobile phone, accident and director and officer liability insurance) and reimbursement of necessary and reasonable expenses.

We believe that the service agreements between us and the members of our Management Board provide for payments and benefits (including upon termination of employment) that are in line with customary market practice for similar companies who are operating in our industry.

In 2019, the two members of our Management Board are collectively entitled to receive total compensation of up to € 1.6 million, which includes base salary, bonus payments, employee stock options and other compensation as a

result of other benefits as described above. In 2018, the two members of our Management Board collectively received total compensation of € 1.1 million, which included base salary, stock options and other compensation.

### **Compensation of Supervisory Board Members in the Business Year 2018**

In our annual general meeting on May 31, 2016 the following remuneration system was resolved:

- Ordinary members of the Supervisory Board receive a fixed remuneration in the amount of € 40,000 per annum. The chairman and vice chairman of the Supervisory Board shall receive a higher fixed remuneration in the amount of € 80,000 per annum and € 60,000 per annum, respectively.
- We do not pay fees for attendance at Supervisory Board meetings.
- The members of the Supervisory Board are entitled to reimbursement of their reasonable, documented expenses (including, but not limited to, travel, board and lodging and telecommunication expenses).

This remuneration system will remain in force until it has been amended or terminated by our general shareholders' meeting.

## **C. BOARD PRACTICES**

### **Overview**

We are a German stock corporation (*Aktiengesellschaft*, or *AG*) with our registered seat in Germany. We are subject to German legislation on stock corporations, most importantly the German Stock Corporation Act (*Aktengesetz*, or *AktG*). In accordance with the German Stock Corporation Act (*Aktengesetz*), our corporate bodies are the management board (*Vorstand*), the supervisory board (*Aufsichtsrat*) and the general shareholders' meeting (*Hauptversammlung*). Our Management Board and our Supervisory Board are entirely separate and, as a rule, no individual may simultaneously be a member of both boards.

Our Management Board is responsible for the day-to-day management of our business in accordance with applicable laws, our articles of association (*Satzung*) and the management board's internal rules of procedure (*Geschäftsordnung*). Our Management Board represents us in our dealings with third parties.

The principal function of our Supervisory Board is to supervise our Management Board. The Supervisory Board is also responsible for appointing and removing the members of our Management Board and representing us in connection with transactions between a current or former member of the Management Board and us.

Under German law, members of both boards owe a duty of loyalty and care to us. In carrying out their duties, they are required to exercise the standard of care of a prudent and diligent businessperson. If they fail to observe the appropriate standard of care, they may become liable to us.

In carrying out their duties, the members of both boards may take into account a broad range of considerations when making decisions, including our interests and the interests of our shareholders, employees, creditors and, to a limited extent, the general public, while respecting the rights of our shareholders to be treated on equal terms. Additionally, the Management Board is responsible for implementing an internal monitoring system for risk management purposes.

Our Supervisory Board has comprehensive monitoring responsibilities. To ensure that our supervisory board can carry out these functions properly, our Management Board must, among other things, regularly report to our Supervisory Board regarding our current business operations and future business planning (including financial, investment and personnel planning). In addition, our Supervisory Board is entitled to request special reports from the Management Board at any time.

Under German law, our shareholders have no direct recourse against the members of our Management Board or our Supervisory Board if they have breached their duty of loyalty and care to us. Apart from insolvency or other special circumstances, only the company has the ability to claim damages against the members of our two boards. We may

waive these claims to damages or settle these claims only if at least three years have passed since any violation of a duty occurred and only if our shareholders approve the waiver or settlement at a shareholders' meeting with a simple majority of the votes cast; provided that shareholders who in the aggregate hold one-tenth or more of our share capital do not oppose the waiver or settlement and have their opposition formally recorded in the meeting's minutes by a German civil law notary.

The following description, as far as it relates to our articles of association, is based on the articles of association, as last amended, effective with the registration in the commercial register on November 7, 2018.

### **Supervisory Board**

Our Supervisory Board currently consists of three members, which is the minimum number of members allowed under German law. As we grow, our Supervisory Board may be required to include employee representatives subject to the provisions of the German One-Third Employee Representation Act ( *Drittelbeteiligungsgesetz* ) or the German Codetermination Act ( *Mitbestimmungsgesetz* ).

Currently, all of the members of our Supervisory Board are elected by the general shareholders' meeting in accordance with the provisions of the German Stock Corporation Act ( *Aktiengesetz* ). German law does not require the majority of our Supervisory Board members to be independent. The rules of procedure for our Supervisory Board provide that the supervisory board should be composed of a majority of independent members, as determined by the Supervisory Board. Under the Supervisory Board's rules of procedure, a board member is deemed to be independent if such member has no business or personal relationships with us or the Management Board that could constitute a conflict of interest.

Under German law, the members of a supervisory board may be elected for a term of up to approximately five years, depending on the dates of the annual general meeting at which the members of the supervisory board are elected, which is the standard term of office. Reelection, including repeated reelection, is permissible. The shareholders' meeting may specify a term of office for individual members or all of the members of our Supervisory Board which is shorter than the standard term of office and, subject to statutory limits, may set different start and end dates for the terms of members of our Supervisory Board.

The shareholders' meeting may, at the same time as it elects the members of the Supervisory Board, elect one or more substitute members. The substitute members replace members who cease to be members of our Supervisory Board and take their place for the remainder of their respective terms of office. We have not elected any substitute members.

Members of our Supervisory Board may be dismissed at any time during their term of office by a resolution of the shareholders' meeting adopted by a simple majority of the votes cast. In addition, any member of our Supervisory Board may resign at any time by giving one month written notice of his or her resignation to the chairperson of our Supervisory Board (in case the chairperson resigns, such notice is to be given to the vice chairperson). Our Supervisory Board may agree upon a shorter notice period. None of the members of the Supervisory Board are eligible to receive any benefits upon termination of their service on the Supervisory Board.

Our Supervisory Board elects a chairperson and a vice chairperson from its members. The vice chairperson exercises the chairperson's rights and obligations whenever the chairperson is unable to do so. On May 27, 2014, Peter Nietzer, Dr. Stefan Söhn and Prof. Dr. Joachim Heinzl were elected as members of our Supervisory Board by the general shareholders' meeting for a term that ends on the day of the shareholders' meeting which resolves on the discharge of the Supervisory Board for the business year 2018. The members of our Supervisory Board have elected Peter Nietzer as chairperson and Dr. Stefan Söhn as vice chairperson, each for the term of their respective membership on our Supervisory Board. Prof. Dr. Dr. Joachim Heinzl resigned from his office as member of the Supervisory Board of the Company for health reasons with effect from the end of the General Meeting on May 31, 2017. Following the recommendation of the Compensation and Nomination Committee, the shareholders at general shareholders' meeting on May 31, 2017 elected Eberhard Weiblen as member of the Supervisory Board from the end of the Annual General Meeting in 2017 for a term that ends on the day of the shareholders' meeting which resolves on the discharge of the Supervisory Board for the business year 2018.

The Supervisory Board meets at least twice during the first half and twice during the second half of each calendar year. Our articles of association and the Supervisory Board's rules of procedure provide that a quorum of the Supervisory Board members is present if at least half of its members, but in any case no less than three members, participate in the vote. Members of our Supervisory Board are deemed present if they participate via telephone or video conference, subject to no other member of the Supervisory Board raising any objection to this type of participation. Any absent member may also participate in the voting by submitting his or her written vote through another member.

Resolutions of our Supervisory Board are passed by the vote of a simple majority unless otherwise required by law, our articles of association or the rules of procedure of our Supervisory Board. In the event of a tie, the chairperson casts the tie-breaking vote.

Our Supervisory Board is not permitted to make management decisions, but, in accordance with German law and in addition to its statutory responsibilities, it has determined that the following matters, among others, require its prior consent:

- any material changes to our business strategy;
- the purchase or sale of real estate or legal entities or the purchase, sale, creation, extension, reduction or termination of business activities, including tangible or intangible assets, if the relevant price or value, in each case, exceeds € 50,000;
- the purchase, sale or creation of joint ventures;
- the termination of, or amendment to, consulting, advisory or other service agreements, if our costs or obligations associated with such agreement exceed € 50,000 per year or € 250,000 in the aggregate;
- the termination of, or amendment to, operating leases, land leases or rental agreements in relation to real estate, buildings or similar objects, if our obligations associated with such agreement exceed € 50,000 per year or € 250,000 in the aggregate;
- expenditures or capital investments exceeding € 50,000 in each case;
- any hiring, dismissal or modification of an employment agreement of any executive manager, provided that their aggregate cash remuneration (including cash bonuses) exceeds € 75,000;
- any material change or amendment to our code of conduct; and
- the approval of our budget.

Our Supervisory Board may designate further types of actions requiring its approval.

Section 2(2) sentence 2 of the rules of procedure of our Supervisory Board provides that a Supervisory Board member may not continue to serve on our Supervisory Board past his or her 75th birthday.

### **Supervisory Board Practices**

Decisions are generally made by our Supervisory Board as a whole; however, decisions on certain matters may be delegated to committees of our Supervisory Board to the extent permitted by law. The chairperson, or if he or she is prevented from doing so, the vice chairperson, chairs the meetings of the Supervisory Board and determines the order in which the agenda items are discussed, the method and order of the voting, any adjournment of the discussion and passing of resolutions on individual agenda items after a due assessment of the circumstances.

Pursuant to Section 107(3) AktG, the supervisory board may form committees from among its members and charge them with the performance of specific tasks. The committees' tasks, authorizations and processes are determined by the supervisory board. Where permissible by law, important powers of the supervisory board may also be transferred to committees.

Under Article 7 no.1 of its internal rules of procedure, the supervisory board has set up and appointed a Compensation and Nomination Committee and an Audit Committee.

***Compensation and Nomination Committee***

Pursuant to Article 9 of the rules of procedure of our Supervisory Board, the Compensation and Nomination Committee prepares hiring and personnel decisions for approval by the Supervisory Board and performs the following functions:

- preparation of the resolutions of the Supervisory Board regarding the conclusion, alteration and termination of service contracts of members of the Management Board within the framework of the compensation system adopted by the Supervisory Board;
- preparation of the resolutions of the Supervisory Board to file an application to the court to reduce the compensation paid to the Management Board members under Section 87 (2) AktG;
- preparation of the resolutions of the Supervisory Board regarding the framework of the compensation scheme of the Management Board, including its essential contractual elements, and providing the Supervisory Board with information necessary for it to review this compensation scheme on a regular basis;
- representation of the company vis-à-vis former members of the Management Board under Section 112 AktG;
- granting consent for secondary occupations and for other activities of Management Board members under Section 88 AktG;
- approval of agreements with Supervisory Board members under Section 114 AktG; and
- proposing suitable candidates as Supervisory Board members to the general shareholders' meeting in case of elections of Supervisory Board members.

The Compensation and Nomination Committee monitors the Management Board's adherence to the rules of procedure of the Management Board. The rules of procedure of the Management Board contain, among other things, obligations for the Management Board to provide certain information to the Compensation and Nomination Committee.

All current members of the Supervisory Board are members of the Compensation and Nomination Committee. Our Supervisory Board has determined that each member of the Compensation and Nomination Committee satisfies the independence requirements of the New York Stock Exchange.

***Audit Committee***

According to Article 10 of the rules of procedure of our Supervisory Board, our Audit Committee assists the Supervisory Board in overseeing the accuracy and integrity of our accounting and financial reporting processes and audits of our financial statements, the effectiveness of the internal control system and our compliance with legal and regulatory requirements, the independent auditors' qualifications and independence and the performance of the independent auditors.

The Audit Committee's duties and responsibilities to carry out its purposes include, among others:

- the review of our accounting processes;
- the review of the effectiveness of our internal systems of control, risk management and compliance;
- the review and the handling of matters and processes related to auditor independence;

- the commissioning of the auditors to conduct the audit, agreeing on additional services to be provided by the auditors under the auditor's assignment, the establishment of the scope and the main review points of the audit and agreeing upon a fee with the auditors;
- the preparation of the Supervisory Board's resolution on our financial statements; and
- the establishment of procedures for (i) the receipt, retention and treatment of complaints we receive regarding accounting, internal accounting controls or auditing matters and (ii) the confidential, anonymous submission by our employees of concerns regarding questionable accounting or auditing matters.

Under German law, each member of the Supervisory Board is obliged to carry out his or her duties and responsibilities personally, and such duties and responsibilities cannot be generally and permanently delegated to third parties. However, the Supervisory Board and its committees, including the Audit Committee, have the right to appoint third party experts for the review and analysis of specific circumstances in accordance with its control and supervision duties under German law. For example, the Supervisory Board could retain an audit firm and/or legal counsel if it wants to investigate potentially illegal activities occurring in a foreign subsidiary. We will bear the costs for any such independent experts that are retained by the Supervisory Board or any of its committees, including the Audit Committee.

The Audit Committee consists of three members. The chairman of the Audit Committee shall not be a former member of our management board whose appointment ended less than two years prior to his or her appointment as chairman of the Audit Committee.

Furthermore, the chairman of the Audit Committee shall have special knowledge and experience in the application of accounting principles and internal control procedures and shall therefore qualify as an "audit committee financial expert" as defined under the Exchange Act.

## **Management Board**

### ***Overview***

Under German law and the company's articles of association, the Management Board must consist of one or more persons and the Supervisory Board determines the exact number of members of the Management Board. The Supervisory Board also appoints the chairman and the deputy chairman of the Management Board, if any. Currently, the Management Board consists of two members, with Dr. Ingo Ederer appointed as Chief Executive Officer and Rudolf Franz appointed as Chief Financial Officer and Chief Operating Officer.

Members of our Management Board conduct the daily business of our company in accordance with applicable laws, our articles of association and the rules of procedure for the Management Board. The Management Board is in general responsible for the management of our company and for handling our daily business relations with third parties, the internal organization of our business and communications with our shareholders. In addition, the Management Board has the responsibility for:

- the preparation of our annual financial statements;
- the making of a proposal to our shareholders' meeting on how our profits (if any) should be allocated (such proposal to be submitted simultaneously to the Supervisory Board); and
- regular reporting to the Supervisory Board on our current operating and financial performance, our budgeting and planning processes and our performance under them and on future business planning (including strategic, financial, investment and personnel planning).
- the implementation and oversight of internal controls, risk management and compliance program

The Supervisory Board appoints the members of the Management Board for a maximum term of five years. Reappointment or extension of the term for up to five years is permissible. The Supervisory Board may revoke the appointment of a Management Board member prior to the expiration of his or her term for good cause only, such as for gross breach of fiduciary duties or if the shareholders' meeting passes a vote of no-confidence with respect to such member,



unless the Supervisory Board deems the no-confidence vote to be clearly unreasonable. The supervisory board is also responsible for entering into, amending and terminating service agreements with the Management Board members and, in general, for representing us in disputes with the Management Board, both in and out of court. The Supervisory Board may assign these duties to a committee of the Supervisory Board, except in certain cases where the approval of the entire Supervisory Board is required, such as the approval of the compensation of members of our Management Board and the reduction of the compensation of members of our Management Board upon a deterioration of our situation, which includes, among other things, a bankruptcy or the layoff of a significant number of employees.

According to our articles of association, as long as there are two or more Management Board members, either (i) two Management Board members or (ii) one Management Board member acting jointly with an authorized representative ( *Prokurist* ) have the authority to act on our behalf. The Supervisory Board may grant any Management Board member the right to represent us alone and may release any member of the Management Board from the restrictions on multiple representations under Section 181, 2nd Alternative of the German Civil Code ( *Bürgerliches Gesetzbuch* ).

Under the Management Board member service agreements and by a special resolution of the Supervisory Board, all members of the Management Board have been granted authority to represent us alone and were released from the restrictions imposed by Section 181, 2nd Alternative of the German Civil Code.

The Management Board has the authority to determine our business areas and operating segments and resolve upon the internal allocation of responsibility for certain business areas and operating segments among the various members of the Management Board by setting up a business responsibility plan ( *Geschäftsverteilungsplan* ). Since we currently have only two members of the Management Board, we do not have a business responsibility plan in place at this time.

Section 3(7) sentence 3 of the rules of procedure of our Supervisory Board provides that a Management Board member shall not continue to serve on our management board past his or her 65th birthday.

### **Service Agreements**

#### *Dr. Ingo Ederer and Rudolf Franz*

By resolution of its Supervisory Board effective as of July 1, 2016, the current members of the voxeljet AG (“voxeljet”) Management Board, Dr. Ingo Ederer and Rudolf Franz, were reappointed as members of the Management Board for a new 5 year term from July 1, 2016 until June 30, 2021. Dr. Ingo Ederer and Rudolf Franz have each accepted such new appointment.

Following the reappointment of Dr. Ingo Ederer and Rudolf Franz as members of the Management Board, the existing service agreements with Dr. Ingo Ederer and Rudolf Franz originally scheduled to expire in 2017 were mutually terminated and new five year service agreements were concluded with each member of the Management Board effective as of July 1, 2016.

The main terms of the service agreements are summarized below. The terms of the service agreements of Dr. Ingo Ederer and Rudolf Franz are identical unless explicitly stated otherwise.

Each service agreement can be terminated prior to June 30, 2021 only (i) by the member of the Management Board exercising a special termination right ( *Sonderkündigungsrecht* ) in case of a change of control of voxeljet (as defined in the service agreement), if and to the extent such change of control leads to a material change of the position of the member of the Management Board, (ii) by us if we terminate the appointment of the member of the Management Board for cause or (iii) by the member of the Management Board for cause.

If a member of the Management Board terminates the service agreement exercising the special termination right ( *Sonderkündigungsrecht* ) in case of a change of control, the member of the Management Board is entitled to a compensation payment. 50% of such compensation payment consists of the sum of the total remuneration payable to the member of the Management Board over the outstanding full term of the service agreement (fixed plus variable remuneration assuming the full achievement of all bonus targets) and the other 50% consists of a lump sum payment amounting to two annual fixed salaries. The compensation payment is capped at the amount of € 2.0 million.

Under German law, a contract can be terminated for cause only in exceptional circumstances (i.e., if the continuation of the contractual relationship is unacceptable for the terminating party). Termination for cause generally requires that a party repeatedly and severely breaches its contractual duties. To the extent the employment terminates during a business year, the member of the Management Board is entitled to a pro rata portion of the bonus that reflects the percentage of the year that the member of the Management Board worked for us.

Furthermore, each service agreement contains a covenant pursuant to which each member of the Management Board has agreed not to compete with us for a period of two years after the termination of the service agreement. Under German law, a non-compete covenant is only valid if the employee is compensated during the term of the non-compete obligation. As compensation for the non-compete covenant, each member of the Management Board will receive 100% of his fixed salary (but in no event less than 50% of the total compensation received in the preceding year) for the entire two year term of the non-compete covenant. If the service agreement of a member of the Management Board is terminated for cause, we are not obligated to pay the compensation for the non-compete covenant, so long as we provide the member of the Management Board with a written statement disclaiming our obligation to pay this compensation within one month after the termination.

The new service agreements provide for an annual fixed compensation (base salary), an annual performance award (annual bonus) of up to 30% of the yearly base salary, as well as a long-term performance award for a three-business-year period (long-term bonus) of up to 100% of the yearly base salary. The performance targets of the annual and long-term bonuses are a mixture of certain financial and non-financial targets, such as revenue, profitability and liquidity targets as well as personal goals. In addition to the fixed and variable remuneration components, each member of the Management Board is entitled to additional benefits (including company car arrangements, mobile phone, accident and director and officer liability insurance) and reimbursement of necessary and reasonable expenses.

### **German Corporate Governance Code**

The German Corporate Governance Code, or Corporate Governance Code, was originally published by the German Ministry of Justice ( *Bundesministerium der Justiz* ) in 2002 and was most recently amended on February 7, 2017 and published in the German Federal Gazette ( *Bundesanzeiger* ) on April 24, 2017. The Corporate Governance Code contains recommendations ( *Empfehlungen* ) and suggestions ( *Anregungen* ) relating to the management and supervision of German companies that are listed on a stock exchange. It follows internationally and nationally recognized standards for good and responsible corporate governance. The purpose of the Corporate Governance Code is to make the German system of corporate governance transparent for investors. The Corporate Governance Code includes corporate governance recommendations and suggestions with respect to shareholders and general shareholders' meetings, the management and supervisory boards, transparency, accounting policies, and auditing.

There is no obligation to comply with the recommendations or suggestions of the Corporate Governance Code. The German Stock Corporation Act ( *Aktiengesetz* ) requires only that the management board and supervisory board of a German listed company issue an annual declaration that either (i) states that the company has complied with the recommendations of the Corporate Governance Code or (ii) lists the recommendations that the company has not complied with and explains its reasons for deviating from the recommendations of the Corporate Governance Code (so called *Entsprechenserklärung* ). In addition, a listed company is also required to state in this annual declaration whether it intends to comply with the recommendations or list the recommendations it does not plan to comply with in the future. The current declaration needs to be published permanently on the company's website. In addition, the Corporate Governance Code recommends that the old declarations remain on the website for five years. If the company changes its policy on certain recommendations between such annual declarations, it must disclose this fact and explain its reasons for deviating from the recommendations. Non-compliance with suggestions contained in the Corporate Governance Code need not be disclosed.

Following our listing on the New York Stock Exchange in October 2013, the Corporate Governance Code applies to us and we are required to issue the annual declarations described above. On December 31, 2013, we issued and published our first annual compliance declaration and on December 15, 2014 we published our second annual compliance declaration. Our third and fourth annual compliance declaration was published on December 16, 2015 and December 14, 2016, respectively. Our fifth and sixth annual compliance declaration was published on December 12, 2017 and December 14, 2018. You can find our annual compliance declarations on our website at *investor.voxeljet.com*. This website address is included in this annual report as an inactive textual reference only.

According to their respective rules of procedure, our Management Board and the Supervisory Board are obliged to comply with the Corporate Governance Code except for such provisions which they have explicitly listed in their annual declaration and for which they have stated that they do not comply with.

In particular, we adhere to the following significant recommendations of the Corporate Governance Code: (i) the Supervisory Board will establish a compensation and nomination committee ( *Vergütungs- und Nominierungsausschuss* ) as well as an audit committee ( *Prüfungsausschuss* ); (ii) the Management Board must keep the Supervisory Board closely informed, in particular with respect to measures which can fundamentally affect our financial situation; and (iii) significant management measures are subject to Supervisory Board approval.

However, we expect to deviate from the recommendations and suggestions of the Corporate Governance Code in various respects. All deviations from the Corporate Governance Code recommendations will be published in the official annual declarations, the current declaration was published on December 14, 2018.

#### D. EMPLOYEES

The majority of our current employees are located in Germany, paid in euros and subject to German labor law. A few of our employees are members of a labor union; however, voxeljet AG is not bound by any collective bargaining agreement. On June 23, 2016, our employees voted for the first workers council of voxeljet AG. According to the German Betriebsverfassungsgesetz (BetrVG), § 9, the workers' council has 9 members. In its inaugural meeting on July 7, 2016, the workers' council has officially started its work for the employees of the voxeljet AG. We consider our employee relations to be good and have never experienced a work stoppage.

The table below sets forth the number of employees we had as of December 31 of each of the years represented:

	December 31,		
	2018	2017	2016
Management board (Vorstand)	2	2	2
Managing director	4	4	4
Research and development	51	49	56
Systems	95	87	83
Services	56	52	47
Sales and marketing	53	51	41
Financial	66	51	49
Total	327	296	282

#### E. SHARE OWNERSHIP

##### Supervisory Board

As of December 31, 2018, none of the members of the Supervisory Board held any of our ordinary shares.

##### Management Board

Our CEO and founder, Dr. Ingo Ederer, holds 578,695 of our ordinary shares, which represented 12.0% of our ordinary shares as of December 31, 2018. In addition he holds 116,731 ADSs which have not been converted to ordinary shares. The aggregate number of ADSs beneficially owned by Dr. Ingo Ederer represents approximately 12.4% of the Company's outstanding ADSs, based on 24.18 million ADSs outstanding.

Our CFO and COO, Rudolf Franz, holds 259,415 of our ordinary shares through Franz Industriebeteiligungen AG, which is wholly owned by Mr. Franz and members of his family, which represented 5.4% of our ordinary shares as of December 31, 2018. In addition Franz Industriebeteiligungen holds 116,731 ADSs which have not been converted to ordinary shares. The aggregate number of ADSs beneficially owned by Franz Industriebeteiligungen represents approximately 5.8% of the Company's outstanding ADSs, based on 24.18 million ADSs outstanding.

On April 7, 2017 and on April 12, 2018, each member of the Management Board was granted with 69,750 and

23,250 shares of equity settled stock options, respectively.

## ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS

### A. MAJOR SHAREHOLDERS

The following table sets forth information, as of March 1, 2019, regarding the beneficial ownership of our ordinary shares.

<b>5% Shareholders and Members of our Supervisory and Management Boards</b>	<b>Number <sup>(1)</sup></b>	<b>Percent <sup>(1)</sup></b>
Dr. Ingo Ederer	602,042 (2)	12.4% (2)
AWM Investment Company, Inc. <sup>(3)</sup>	557,186	11.5%
Bank of America <sup>(4)</sup>	332,075	6.9%
Alyeska Investment Group, L.P. <sup>(5)</sup>	331,189	6.9%
Startkapital-Fonds Augsburg GmbH <sup>(6)</sup>	259,415	5.3%
Franz Industriebeteiligungen AG <sup>(7)</sup>	282,762 (2)	5.8%
Rudolf Franz <sup>(8)</sup>	282,762 (2)	5.8%
Peter Nietzer	--	--
Dr. Stefan Söhn	--	--
Eberhard Weiblen	--	--
All Members of our Supervisory and Management Boards as a Group (5 persons):	884,804 (2)	18.2% (2)

In computing the number of shares beneficially owned by a person and the percentage ownership of that person, we have included shares that the person has the right to acquire within 60 days of December 31, 2018, including through the vesting of deferred share awards, exercise of any option, warrant or other right or the conversion of any other security. These shares, however, are not included in the computation of the percentage ownership of any other person. Unless otherwise indicated, the business address of each such person is c/o voxeljet AG, Paul-Lenz Straße 1a, 86316 Friedberg, Germany.

- (1) Except as otherwise indicated, the persons named in this table have sole voting and investment power with respect to all ordinary shares shown as beneficially owned by them, subject to community property laws where applicable and to the information contained in the footnotes to this table.
- (2) This number includes the 116,731 ADSs acquired by each Dr. Ingo Ederer and Franz Industriebeteiligungen AG through the October 2018 offering which have not been converted to ordinary shares. The 116,731 ADSs are reported in this table on an as converted basis into 23,347 ordinary shares using the five-to-one conversion ratio.
- (3) Based on the Schedule 13G/A filed by AWM Investment Company, Inc. filed on February 13, 2019. The share ownership that was reported in ADSs has been reported on an as converted basis to the underlying ordinary shares using the five-to-one conversion ratio, converting the reported 2,785,927 ADSs to 557,186 ordinary shares.
- (4) Based on the Schedule 13G filed by Bank of America Corp filed on February 13, 2019.
- (5) Based on the Schedule 13G filed by Alyeska Fund GP, LLC filed on February 13, 2019. The share ownership that was reported reported on an as in ADSs has been converted basis to the underlying ordinary shares using the five-to-one conversion ratio, converting the reported 1,655,943 ADSs to 331,189 ordinary shares.
- (6) Marcus Wagner is the managing director of Startkapital Fonds Augsburg GmbH and has the sole power to vote, hold and dispose of shares held by it. The address for Startkapital Fonds Augsburg GmbH is Stettenstraße 1, 86150 Augsburg, Germany.
- (7) Rudolf Franz and Bärbel Franz are the Managing Directors of Franz Industriebeteiligungen AG and have shared power to vote, hold and dispose of the shares held by it. Bärbel Franz is the spouse of Rudolf Franz. The address for Franz Industriebeteiligungen AG is Am Silbermannpark 1b, 86161 Augsburg, Germany.
- (8) Consists entirely of ordinary shares held by Franz Industriebeteiligungen AG.

As of December 31, 2018, there were fourteen holders of record entered in our share register. Citibank, N.A., the depository, is a U.S. resident and the holder of record of the ordinary shares that underlie our ADSs. Each ADS represents one-fifth of an ordinary share. As of December 31, 2018, Citibank, N.A. held 3,374,805 ordinary shares representing 69.8% of the issued share capital held at that date. Other than Citibank, N.A., we do not believe that any of our other holders of record is a U.S. resident. The number of holders of record is based exclusively upon our share register and does not address whether a share or shares may be held by the holder of record on behalf of more than one person or institution who may be deemed to be the beneficial owner of a share or shares in our company.

None of our shareholders will have different voting rights from other shareholders. We are not aware of any arrangement that may, at a subsequent date, result in a change of control of our company.

## **B. RELATED PARTY TRANSACTIONS**

Since January 1, 2016, there has not been, nor is there currently proposed, any material transaction or series of similar material transactions to which we were or are a party in which any of the members of our Supervisory Board and Management Board, executive officers, holders of more than 10% of any class of our voting securities, or any member of the immediate family of any of the foregoing persons, had or will have a direct or indirect material interest, other than the compensation and shareholding arrangements we describe where required in “Item 6. Directors, Senior Management and Employees,” and the transactions we describe below.

Franz Industriebeteiligungen AG, Augsburg, Germany, is owned by Mrs. Bärbel Franz, Mr. Simon Franz, Mrs. Lisa Franz and Mr. Rudolf Franz who has been the Chief Financial Officer of *voxeljet AG* since 2013. Franz Industriebeteiligungen AG rents office space in Augsburg, Germany to *voxeljet AG*. Rental expenses amounted to kEUR 2, in 2018. In addition, Franz Industriebeteiligungen AG received payments related to the use of certain paintings which are placed in the administrative building in Friedberg. Associated rental expenses amounted to kEUR 2 in 2018. The agreement related to the rental of certain paintings was terminated during 2018. Mr. Simon Franz has been employed as an intern at *voxeljet AG* since April 2017. In 2018, he received a salary amounting to kEUR 12.

Further, *voxeljet* acquired goods amounting to kEUR 7 in 2018 from ‘Schlosserei und Metallbau Ederer’, which is owned by the brother of Dr. Ingo Ederer, the Chief Executive Officer of *voxeljet*.

In addition, *voxeljet* received logistics services amounting to kEUR 74 in 2018 from ‘Andreas Schmid Logistik’, where Dr. Stefan Söhn, member of our Supervisory Board serves as the CFO.

Moreover, *voxeljet* received orders amounting to kEUR 175 in 2018 from ‘ Suzhou Meimai Fast Manufacturing Technology Co., Ltd. , which is our joint venture partner for *voxeljet* China.

### **Service Agreements**

We have entered into service agreements with the members of our Management Board. See “Item 6. Directors, Senior Management and Employees—C. Board Practices.”

## **C. INTERESTS OF EXPERTS AND COUNSEL**

Not applicable.

## **ITEM 8. FINANCIAL INFORMATION**

### **A. CONSOLIDATED STATEMENTS AND OTHER FINANCIAL INFORMATION**

See “Item 18. Financial Statements.”

### **Legal Proceedings**

From time to time, we may be subject to various claims or legal, arbitration or administrative proceedings that arise in the ordinary course of our business. We are currently not a party to any legal, arbitration or administrative proceedings which, in the opinion of our management, may have or have had in the recent past, significant effects on our

business, financial condition or results of operations, including governmental proceedings pending or known to be contemplated.

#### **Dividend Policy**

Neither we nor our legal predecessor, Voxeljet Technology GmbH, have ever declared or paid any cash dividends on our ordinary shares, and we have no present intention of declaring or paying any dividends in the foreseeable future. Any recommendation by our Management and Supervisory Boards to pay dividends, subject to compliance with applicable law and any contractual provisions that restrict or limit our ability to pay dividends, including under agreements for indebtedness that we may incur, will depend on many factors, including our financial condition, results of operations, legal requirements, capital requirements, business prospects and other factors that our Management and Supervisory Boards deem relevant.

All of our shares represented by ADSs have the same dividend rights as all of our other outstanding shares. Any distribution of dividends proposed by our Management and Supervisory Boards requires the approval of our shareholders at a shareholders' meeting. See "Item 10. Additional Information—B. Memorandum and Articles of Association," which incorporates by reference certain sections of our registration statement on Form F-1 (Registration No. 333-191213) that explain in more detail the procedures we must follow and the German law provisions that determine whether we are entitled to declare a dividend.

For information regarding the German withholding tax applicable to dividends and related United States refund procedures, see "Item 10. Additional Information—E. Taxation—German Taxation of ADSs."

#### **B. SIGNIFICANT CHANGES**

Except as set forth elsewhere in this annual report, no significant changes have occurred since December 31, 2018.

### **ITEM 9. THE OFFER AND LISTING**

#### **A. OFFER AND LISTING DETAILS**

Our ADSs, each representing one-fifth of an ordinary share, have been listed on the New York Stock Exchange since October 18, 2013. Our ADSs are listed for trading on the New York Stock Exchange under the symbol "VJET."

#### **B. PLAN OF DISTRIBUTION**

Not applicable.

#### **C. MARKETS**

Our ADSs are listed on the New York Stock Exchange under the symbol "VJET."

#### **D. SELLING SHAREHOLDER**

Not applicable.

#### **E. DILUTION**

Not applicable.

#### **F. EXPENSES OF THE ISSUE**

Not applicable.

## ITEM 10. ADDITIONAL INFORMATION

### A. SHARE CAPITAL

Not applicable.

### B. MEMORANDUM AND ARTICLES OF ASSOCIATION

See the descriptions included in our registration statement on Form F-1 (Registration No. 333-191213) under the headings “Description of Share Capital” and “Description of American Depositary Shares,” which are incorporated herein by reference.

#### Registration of the Company with Commercial Register

We are a German stock corporation ( *Aktiengesellschaft* , or *AG* ) that is organized under the laws of Germany. On July 11, 2013, our company was registered in the commercial register of Augsburg, Germany under the number HRB 27999.

### C. MATERIAL CONTRACTS

We have not entered into any material contracts other than in the ordinary course of business and other than those described elsewhere in “Item 4. Information on the Company—Business Overview,” “Item 7. Major Shareholders and Related Party Transactions—Related Party Transactions,” or elsewhere in this annual report.

### D. EXCHANGE CONTROLS

There are currently no legal restrictions in Germany on international capital movements and foreign-exchange transactions, except in limited embargo circumstances ( *Teilembargo* ) relating to certain areas, entities or persons as a result of applicable resolutions adopted by the United Nations and the European Union. Restrictions currently exist with respect to, among others, Belarus, Congo, Egypt, Eritrea, Guinea, Guinea-Bissau, Iran, Iraq, Ivory Coast, Lebanon, Liberia, Libya, North Korea, Somalia, South Sudan, Sudan, Syria, Tunisia, and Zimbabwe.

For statistical purposes, there are, however, limited notification requirements regarding transactions involving cross-border monetary transfers. With some exceptions, every corporation or individual residing in Germany must report to the German Central Bank ( *Deutsche Bundesbank* ) (i) any payment received from, or made to, a non-resident corporation or individual that exceeds € 12,500 (or the equivalent in a foreign currency) and (ii) any claim against, or liability payable to, a non-resident or corporation in excess of € 5 million (or the equivalent in a foreign currency) at the end of any calendar month. Payments include cash payments made by means of direct debit, checks and bills, remittances denominated in euros and other currencies made through financial institutions, as well as netting and clearing arrangements.

### E. TAXATION

#### German Taxation

The following discussion describes the material German tax consequences for a holder that is a U.S. person of acquiring, owning, and disposing of the ADSs. A holder that is a U.S. person, which we refer to as a “U.S. treaty beneficiary,” is a resident of the United States for purposes of the Agreement between the Federal Republic of Germany and United States of America for the Avoidance of Double Taxation and the Prevention of Fiscal Evasion with respect to Taxes on Income and on Capital as of June 4, 2008 ( *Abkommen zwischen der Bundesrepublik Deutschland und den Vereinigten Staaten von Amerika zur Vermeidung der Doppelbesteuerung und zur Verhinderung der Steuerverkürzung auf dem Gebiet der Steuern vom Einkommen und vom Vermögen und einiger anderer Steuern in der Fassung vom 4. Juni 2008* ), which we refer to as the “Treaty,” who is fully eligible for benefits under the Treaty.



A holder will be a U.S. treaty beneficiary entitled to full Treaty benefits in respect of the ADSs if it is, *inter alia* :

- the beneficial owner of the ADSs (and the dividends paid with respect thereto);
- a citizen or an individual resident of the United States, a corporation or other entity treated as a corporation for U.S. federal income tax purposes created or organized under the laws of the United States or any state thereof or the District of Columbia, an estate the income of which is subject to U.S. federal income tax without regard to its source, or a trust if a court within the United States is able to exercise primary supervision over the administration of the trust and one or more U.S. persons have the authority to control all substantial decisions of the trust, or the trust has elected to be treated as a domestic trust for U.S. federal income tax purposes;
- not also a resident of Germany for German tax purposes; and
- not subject to the limitation on benefits ( *i.e.* , anti-treaty shopping) article of the Treaty that applies in limited circumstances.

Special rules apply to pension funds and certain other tax-exempt investors.

This discussion does not address the treatment of ADSs that are (i) held in connection with a permanent establishment or fixed base through which a U.S. treaty beneficiary carries on business or performs personal services in Germany or (ii) part of business assets for which a permanent representative in Germany has been appointed.

With the exception of the subsection “—General Rules for the Taxation of Shareholders Tax Resident in Germany” below, which provides an overview of dividend taxation with regards to the general principles applicable on tax residents in Germany, this discussion applies only to U.S. treaty beneficiaries that acquired ADSs in the initial offering and hold ADSs as capital assets for U.S. federal income tax purposes. It does not purport to be a comprehensive description of all tax considerations that may be relevant to a decision to purchase ADSs by any particular investor, including tax considerations that arise from rules of general application to all taxpayers or to certain classes of taxpayers that are generally assumed to be known by investors. In particular, this discussion does not address tax considerations applicable to a U.S. treaty beneficiary that may be subject to special tax rules, including, without limitation, a dealer in securities or currencies, a trader in securities that elects to use a mark-to-market method of accounting for securities holdings, banks, thrifts, or other financial institutions, U.S. expatriates, an insurance company, a tax-exempt organization, a person that holds ADSs as part of a hedge, straddle, conversion or other integrated transaction for tax purposes, a person that purchases or sells ordinary shares or ADSs as part of a wash sale for tax purposes, a person whose functional currency for tax purposes is not the U.S. dollar, a person subject to the U.S. alternative minimum tax, or a person that owns or is deemed to own 10% or more of the company’s voting stock. In addition, the discussion does not address tax consequences to an entity treated as a partnership (or other pass-through entity) for U.S. federal income tax purposes that holds ADSs. The U.S. federal income tax treatment of each partner of the partnership generally will depend upon the status of the partner and the activities of the partnership. Prospective purchasers that are partners in a partnership holding ADSs should consult their own tax advisors.

This discussion is based on German tax laws, including, but not limited to interpretation circulars issued by German tax authorities, which are not binding on the courts, and the Treaty. It is based upon tax laws in effect at the time of preparation of this annual report (March 2019). These laws are subject to change, possibly on a retroactive basis. There is no assurance that German tax authorities will not challenge one or more of the tax consequences described in this discussion.

In addition, this discussion is based upon the assumption that each obligation in the deposit agreement and any related agreement will be performed in accordance with its terms. It does not purport to be a comprehensive or exhaustive description of all German or U.S. tax considerations that may be of relevance in the context of acquiring, owning and disposing of ADSs.

Prospective holders of ADSs should consult their own tax advisors regarding the German tax consequences of the purchase, ownership and disposition of ADSs in light of their particular circumstances, including the effect of any state, local, or other foreign or domestic laws or changes in tax law or interpretation.

## German Taxation of ADSs

### General

As of the date hereof, no published German tax court cases exist as to the German tax treatment of ADRs or ADSs, but based on the interpretation circular regarding the taxation of ADRs issued by the German Federal Ministry of Finance (BMF-Schreiben) (dated May 24, 2013, reference number IV C 1-S2204/12/10003) (the “ADR Tax Circular”), for German tax purposes, although it is not free from doubt, the ADSs should represent a beneficial ownership interest in the underlying shares and qualify as ADRs for the purpose of the ADR Tax Circular. If the ADSs qualify as ADRs under the ADR Tax Circular, dividends would accordingly be attributable to U.S. treaty beneficiaries of the ADSs for tax purposes, and not to the legal owner of the ordinary shares ( *i.e.* , the financial institution on behalf of whom the ordinary shares are stored at a domestic depository for the ADS holders), and U.S. treaty beneficiaries would be treated as holding an interest in the company’s ordinary shares for German tax purposes. However, investors should note that interpretation circulars published by the German tax administration (including the ADR Tax Circular) are not binding on German courts, including German tax courts, and it is unclear whether a German tax court would follow the ADR Tax Circular in determining the German tax treatment of ADRs or ADSs. For the purpose of this German tax section it is assumed that the ADSs qualify as ADRs within the meaning of the ADR Tax Circular.

### German Taxation of Dividends and Capital Gains

#### General Rules for the Taxation of Shareholders Tax Resident in Germany

This subsection provides an overview of dividend taxation with regards to the general principles applicable on tax residents in Germany.

The German dividend and capital gains taxation rules applicable to German tax residents require a distinction between shares held as private assets ( *Privat-/Kapitalvermögen* ) and shares held as business assets ( *Betriebsvermögen* ).

In case the shares are held as private assets, dividends and capital gains are taxed as investment income and are principally subject to 25% German flat income tax on capital income ( *Abgeltungsteuer* ) (plus a 5.5% solidarity surcharge ( *Solidaritätszuschlag* ) thereon, resulting in an aggregate rate of 26.375%), which is levied in the form of withholding tax ( *Kapitalertragsteuer* ). The shareholder is taxed on its gross personal investment income, less the saver’s tax-free allowance of € 801 for an individual or € 1,602 for a married couple filing taxes jointly. The deduction of income related expenses actually incurred is generally not possible. Private investors can apply to have their investment income assessed in accordance with the general rules on determining an individual’s tax bracket if this would result in a lower tax burden. In this case, the shareholder will be taxed on gross personal investment income, less the saver’s tax-free allowance of € 801 (€ 1,602 for married couples filing jointly), without deduction of income-related expenses actually incurred. If tax is initially withheld, it will be credited against the amount of personal income tax assessed against the shareholder.

Losses resulting from the disposal of shares can only be offset by capital gains from the sale of shares. If, however, a shareholder directly or indirectly held at least 1% of the share capital of the company at any time during the five years preceding the sale, 60% of any capital gains resulting from the sale are taxable at the shareholder’s personal income tax rate (plus 5.5% solidarity surcharge thereon). Conversely, 60% of any capital losses are recognized for tax purposes.

In case the shares are held as business assets, the taxation depends on the legal form of the shareholder ( *i.e.* , whether the shareholder is a corporation, an individual or a partnership). Irrespective of the legal form of the shareholder, dividends are also in this business assets scenario subject to the aggregate withholding tax rate of 26.375%. The withholding tax ( *Kapitalertragsteuer* ) is credited against the respective shareholder’s final (corporate) income tax liability. To the extent the amount withheld exceeds the (corporate) income tax liability, the withholding tax will be refunded, provided that certain requirements are met.

Special rules apply to financial institutions ( *Kreditinstitute* ), financial services providers ( *Finanzdienstleistungsinstitute* ), financial enterprises ( *Finanzunternehmen* ), life insurance and health insurance companies, and pension funds.

With regard to shareholders in the legal form of a *corporation*, dividends and capital gains are effectively 95% tax exempt from corporate income tax (including solidarity surcharge). However, with regards to dividends (not to capital gains) realized after February 28, 2013, the 95% corporate income tax exemption only applies if the corporation holds at least 10% of the shares in the company at the beginning of the calendar year.

A circular issued by the Regional Tax Office Frankfurt/Main ( *Verfügung der OFD* ), dated December 2, 2013, reference number S 2750a A-19-St 52, provides for further comments on the scope of application of the 10% threshold.

Dividends are fully subject to trade tax ( *Gewerbesteuer* ), unless the shareholder holds at least 15% of the shares in the company at the beginning of the tax assessment period. In the latter case, effectively 95% of the dividends are also exempt from trade tax. Capital gains, however, are, irrespective of the size of the shareholding, 95% exempt from trade tax. Losses from the sale of shares are not tax deductible for corporate income tax and trade tax purposes.

With regards to *individuals* holding shares as business assets, 60% of dividends and capital gains are taxed at the individual's personal income tax rate (plus 5.5% solidarity surcharge thereon). Correspondingly, only 60% of business expenses related to the dividends and capital gains are principally deductible for income tax purposes.

If shares are held as business assets of a commercial permanent establishment located in Germany, dividends are fully subject to trade tax, unless the sole proprietor holds at least 15% of the company's shares at the beginning of the tax assessment period. In this case dividends are fully tax exempt from trade tax. With regards to capital gains, only 60% of the gains are subject to trade tax. 60% of any losses from the sale of shares are tax deductible for income tax and trade tax purposes. All or part of the trade tax is generally credited as a lump sum against the income taxes of the individual.

#### *General rules for the Taxation of Shareholders Not Tax Resident in Germany*

Non German resident holders of ADSs are subject to German taxation with respect to German source income ( *beschränkte Steuerpflicht* ). According to the ADR Tax Circular dated May 24, 2013, income from the shares should be attributed to the holder of the ADSs for German tax purposes. As a consequence, income from the ADSs should be treated as German source income ( *beschränkte Steuerpflicht* ).

The full amount of a dividend distributed by the company to a non German resident shareholder which does not maintain a permanent establishment or other taxable presence in Germany is subject to (final) German withholding tax ( *Kapitalertragsteuer* ) at an aggregate rate of 26.375%. The basis for the withholding tax is the approval of the dividend for distribution by the company's general shareholder meeting. The amount of the relevant taxable income is based on the gross amount in euro; any currency differences shall be irrelevant.

German withholding tax is withheld and remitted to the German tax authorities by the disbursing agent ( *i.e.*, the German bank, financial services institution, securities trading enterprise or securities trading bank (each as defined in the German Banking Act ( *Kreditwesengesetz* ) and in each case including a German branch of a foreign enterprise, but excluding a foreign branch of a German enterprise) that holds or administers the underlying shares in custody and disburses or credits the dividend income from the underlying shares or disburses or credits the dividend income from the underlying shares on delivery of the dividend coupons or disburses such dividend income to a foreign agent or the central securities depository ( *Wertpapiersammelbank* ) in terms of the German Depository Act ( *Depotgesetz* )) holding the underlying shares in a collective deposit, if such central securities depository disburses the dividend income from the underlying shares to a foreign agent, regardless of whether or not a holder must report the dividend for tax purposes and regardless of whether or not a holder is a resident of Germany.

Pursuant to the Treaty, the German withholding tax generally may not exceed 15% of the gross dividends received by U.S. treaty beneficiaries. In case of any U.S. treaty beneficiary qualifying as a not tax transparent corporation and directly holding at least 10% or more of the company's voting shares, the German withholding tax is capped at 5% of the gross dividends. The excess of the total withholding tax, including the solidarity surcharge, over the maximum rate of withholding tax permitted by the Treaty is refunded to U.S. treaty beneficiaries upon application. For example, for a declared dividend of 100, a U.S. treaty beneficiary initially receives 73.625 (100 minus the 26.375% withholding tax). The U.S. treaty beneficiary is entitled to a partial refund from the German tax authorities in the amount of 11.375% of the gross dividend (of 100). As a result, the U.S. treaty beneficiary ultimately receives a total of 85 (85% of the declared dividend) following the refund of the excess withholding. However, investors should note that it is

unclear how the German tax administration will apply the refund process to dividends on the ADSs and ADRs. Further, such refund is subject to the German anti-avoidance treaty shopping rule (as described below in section “—Withholding Tax Refund for U.S. Treaty Beneficiaries”).

#### *German Taxation of Capital Gains of the U.S. Treaty Beneficiaries of the ADSs*

The capital gains from the disposition of ADSs realized by a non German resident shareholder which does not maintain a permanent establishment or other taxable presence in Germany would be treated as German source income and subject to German tax ( *beschränkte Steuerpflicht* ) if such holder at any time during the five years preceding the disposition, directly or indirectly, held ADSs that represent 1% or more of the company’s shares. If such holder had acquired the ADSs without consideration, the previous owner’s holding period and size of the holding would also be taken into account.

However, U.S. treaty beneficiaries are eligible for treaty benefits under the Treaty (as discussed above in the section “—German Taxation”). Pursuant to the Treaty, U.S. treaty beneficiaries are not subject to German tax even under the circumstances described in the preceding paragraph.

German statutory law requires the disbursing agent to levy withholding tax on capital gains from the sale of shares or other securities held in a custodial account in Germany. With regards to the German taxation of capital gains, disbursing agent means a German bank, a financial services institution, a securities trading enterprise or a securities trading bank (each as defined in the German Banking Act ( *Kreditwesengesetz* ) and, in each case including a German branch of a foreign enterprise, but excluding a foreign branch of a German enterprise) that holds the ADSs in custody or administers the ADSs for the investor or conducts sales or other dispositions and disburses or credits the income from the ADSs to the holder of the ADSs. The German statutory law does not explicitly condition the obligation to withhold taxes on capital gains being subject to taxation in Germany under German statutory law or on an applicable income tax treaty permitting Germany to tax such capital gains.

However, an interpretation circular issued by the German Federal Ministry of Finance (BMF-Schreiben) (dated January 18, 2016, reference number IV C 1-S2252/08/10004:017) provides that taxes need not be withheld when the holder of the custody account is not a resident of Germany for tax purposes and the income is not subject to German taxation. The interpretation circular further states that there is no obligation to withhold such tax even if the non-resident holder owns 1% or more of the shares of a German company. While interpretation circulars issued by the German Federal Ministry of Finance are only binding on the tax authorities but not on the tax courts, in practice, the disbursing agents nevertheless typically rely on guidance contained in such interpretation circulars. Therefore, a disbursing agent would only withhold tax at 26.375% on capital gains derived by a U.S. treaty beneficiary from the sale of ADSs held in a custodial account in Germany in the unlikely event that the disbursing agent did not follow this guidance. In this case, the U.S. treaty beneficiary should be entitled to claim a refund of the withholding tax from the German tax authorities under the Treaty (as described in the section “—Withholding Tax Refund for U.S. Treaty Beneficiaries”).

#### **Withholding Tax Refund for U.S. Treaty Beneficiaries**

U.S. treaty beneficiaries are generally eligible for treaty benefits under the Treaty (as discussed above in Section “—German Taxation”). Accordingly, U.S. treaty beneficiaries are entitled to claim a refund of the portion of the otherwise applicable 26.375% German withholding tax on dividends that exceeds the applicable Treaty rate. However, as previously discussed, investors should note that it is unclear how the German tax administration will apply the refund process to dividends on the ADSs and ADRs. Further, such refund is subject to the German anti-avoidance treaty shopping rule according to section 50d para. 3 of the German Income Tax Act ( *Einkommensteuergesetz* ). Generally, this rule requires that the U.S. treaty beneficiary (in case it is a non German resident company) maintains its own administrative substance and conducts its own business activities. In particular, a foreign company has no right to a full or partial refund to the extent persons holding ownership interests in the company would not be entitled to the refund if they derived the income directly and the gross income realized by the foreign company is not caused by the business activities of the foreign company, and there are either no economic or other valid reasons for the interposition of the foreign company, or the foreign company does not participate in general commerce by means of a business organization with resources appropriate to its business purpose. However, this shall not apply if the foreign company’s principal class of stock is regularly traded in substantial volume on a recognized stock exchange, or if the foreign company is subject to the provisions of the German Investment Tax Act ( *Investmentsteuergesetz* ).

Individual claims for refunds may be made on a separate form, which must be filed with the German Federal Central Tax Office ( *Bundeszentralamt für Steuern* ), An der Kuppe 1, 53225 Bonn, Germany. The form is available at the same address, on the German Federal Tax Office's website ( *www.bzst.de* ) or from the Embassy of the Federal Republic of Germany, 2300 M Street, NW, Washington DC 20037. Generally, the refund claim becomes time-barred after four years following the calendar year in which the dividend is received. As part of the individual refund claim, a U.S. treaty beneficiary must submit to the German tax authorities the original withholding certificate (or a certified copy thereof) issued by the disbursing agent and documenting the tax withheld, and an official certification of United States tax residency on IRS Form 6166. IRS Form 6166 may be obtained by filing a properly completed IRS Form 8802 with the Internal Revenue Service, P.O. Box 71052, Philadelphia, PA 19176-6052. Requests for certification must include the U.S. treaty beneficiary's name, social security number or employer identification number, the type of U.S. tax return filed, the tax period for which the certification is requested and a user fee of \$85 for individuals and \$185 for non-individuals. An online payment option is also available at *www.irs.gov* . If the electronic payment option is used, then the completed IRS Form 8802 and all required attachments should be mailed to Department of the Treasury, Internal Revenue Service, Philadelphia, PA 19255-0625. The Internal Revenue Service will send the certification on IRS Form 6166 to the U.S. treaty beneficiary, who must then submit the certification with the claim for refund of withholding tax.

Under a simplified refund procedure based on electronic data exchange ( *Datenträgerverfahren* ) a disbursing agent that is registered as a participant in the electronic data exchange procedure with the German Federal Central Tax Office ( *Bundeszentralamt für Steuern* ) may file an electronic collective refund claim on behalf of all of the U.S. treaty beneficiaries for whom it holds the company's ADSs in custody. However the simplified refund procedure only allows for a refund up to the regular tax rate provided in the Treaty. It is not possible to use the simplified refund procedure to claim a further refund, for example based on special privileges under the Treaty.

Due to the legal structure of the ADSs, only limited guidance of the German tax authorities exists on the practical application of this procedure with respect to the ADSs.

### **German Inheritance and Gift Tax ( *Erbschaft-und Schenkungsteuer* )**

It is unclear whether the German inheritance or gift tax applies to the transfer of the ADSs as the ADR Tax Circular does not refer explicitly to the German Inheritance and Gift Tax Act. However, if German inheritance or gift tax is applicable to ADSs, then under German domestic law, the transfer of the ordinary shares in the company and, as a consequence, the gratuitous transfer of the ADSs would be subject to German gift or inheritance tax if:

- (a) the decedent or donor or heir, beneficiary or other transferee (i) maintained his or her residence or a habitual abode in Germany or had its place of management or registered office in Germany at the time of the transfer, or (ii) is a German citizen who has spent no more than five consecutive years outside Germany without maintaining a residence in Germany or (iii) is a German citizen who serves for a German entity established under public law and is remunerated for his or her service from German public funds (including family members who form part of such person's household, if they are German citizens) and is only subject to estate or inheritance tax in his or her country of residence or habitual abode with respect to assets located in such country (special rules apply to certain former German citizens who neither maintain a residence nor have their habitual abode in Germany), or
- (b) at the time of the transfer, the ADSs are held by the decedent or donor as business assets forming part of a permanent establishment in Germany or for which a permanent representative in Germany has been appointed, or
- (c) the ADSs subject to such transfer form part of a portfolio that represents at the time of the transfer 10% or more of the registered share capital of the company and that has been held directly or indirectly by the decedent or donor, either alone or together with related persons.

Under the Agreement between the Federal Republic of Germany and the United States of America for the avoidance of double taxation with respect to taxes on inheritances and gifts ( *Abkommen zwischen der Bundesrepublik Deutschland und den Vereinigten Staaten von Amerika zur Vermeidung der Doppelbesteuerung auf dem Gebiet der Nachlass-, Erbschaft- und Schenkungsteuern in der Fassung vom 21. Dezember 2000* ), hereinafter referred to as the "United States-Germany Inheritance and Gifts Tax Treaty," a transfer of ADSs by gift or upon death is not subject to

German inheritance or gift tax if the donor or the transferor is domiciled in the United States, within the meaning of the United States-Germany Inheritance and Gift Tax Treaty, and is neither a citizen of Germany nor a former citizen of Germany and, at the time of the transfer, the ADSs are not held by the decedent or donor as business assets forming part of a permanent establishment in Germany or for which a permanent representative in Germany has been appointed.

Notwithstanding the foregoing, in case the heir, transferee or other beneficiary (i) has, at the time of the transfer, his or her residence or habitual abode in Germany, or (ii) is a German citizen who has spent no more than five consecutive years outside Germany without maintaining a residence in Germany or (iii) is a German citizen who serves for a German entity established under public law and is remunerated for his or her service from German public funds (including family members who form part of such person's household, if they are German citizens) and is only subject to estate or inheritance tax in his or her country of residence or habitual abode with respect to assets located in such country (or special rules apply to certain former German citizens who neither maintain a residence nor have their habitual abode in Germany), the transferred ADSs are subject to German inheritance or gift tax.

If, in this case, Germany levies inheritance or gift tax on the ADSs with reference to the heir's, transferee's or other beneficiary's residence in Germany or his or her German citizenship, and the United States also levies federal estate tax or federal gift tax with reference to the decedent's or donor's residence (but not with reference to the decedent's or donor's citizenship), the amount of the U.S. federal estate tax or the U.S. federal gift tax, respectively, paid in the United States with respect to the transferred ADSs is credited against the German inheritance or gift tax liability, provided the U.S. federal estate tax or the U.S. federal gift tax, as the case may be, does not exceed the part of the German inheritance or gift tax, as computed before the credit is given, which is attributable to the transferred ADSs. A claim for credit of the U.S. federal estate tax or the U.S. federal gift tax, as the case may be, may be made within one year of the final determination (administrative or judicial) and payment of the U.S. federal estate tax or the U.S. federal gift tax, as the case may be, provided that the determination and payment are made within ten years of the date of death of the decedent or of the date of the making of the gift by the donor. Similarly, U.S. state-level estate or gift taxes are also creditable against the German inheritance or gift tax liability to the extent that U.S. federal estate or gift tax is creditable.

#### **United States Taxation of ADSs and Ordinary Shares**

The following discussion describes the material U.S. federal income tax consequences that are relevant with respect to the acquisition, ownership and disposition of the ADSs and ordinary shares by a U.S. holder (as defined below) as in effect on the date of this annual report. The information provided below is based on the Internal Revenue Code of 1986, as amended, or the Code, Internal Revenue Service, or IRS, rulings and pronouncements, and judicial decisions all as now in effect and all of which are subject to change or differing interpretations, possibly with retroactive effect. This summary addresses only U.S. federal income tax considerations of U.S. holders that will hold ADSs or ordinary shares as capital assets. It does not provide a complete analysis of all potential tax considerations. In particular, this summary does not address all of the tax considerations applicable to a particular holder of the ADSs or ordinary shares in light of the holder's circumstances (for example, financial institutions; insurance companies; dealers or traders in securities; currencies or notional principal contracts; persons that will hold ADSs or ordinary shares as part of a hedging or conversion transaction or as a position in a straddle or other integrated transactions for U.S. federal income tax purposes; persons that have a functional currency other than the U.S. dollar; persons that own (or are deemed to own) 10% or more (by voting power) of our share capital; regulated investment companies, real estate investment trusts; tax-exempt entities; persons who hold ADSs or ordinary shares through partnerships or other pass-through entities; tax-deferred or other retirement accounts; certain former citizens or residents of the United States; or persons deemed to sell ADSs or ordinary shares under the constructive sale provisions of the Code). Finally, the summary does not describe the effect of the U.S. federal estate and gift tax laws on U.S. holders or the effects of any applicable foreign, state or local laws.

For purposes of this summary, a "U.S. holder" is a beneficial owner of ADSs or ordinary shares that for U.S. federal income tax purposes, is (1) an individual who is a citizen or resident of the United States, (2) a corporation, or an entity treated as a corporation for U.S. federal income tax purposes, created or organized in or under the laws of the United States or any state of the United States, including the District of Columbia, (3) an estate, the income of which is subject to U.S. federal income taxation regardless of its source, or (4) a trust, if it (i) is subject to the primary supervision of a U.S. court and the control of one or more U.S. persons or (ii) has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a U.S. person. A "non-U.S. holder" is a beneficial owner of the ADSs or ordinary shares, other than a partnership or entity treated as a partnership, that is not a U.S. holder.



If a partnership (including an entity or arrangement, domestic or foreign, treated as a partnership for U.S. federal income tax purposes) holds ADSs or ordinary shares, the tax treatment of a partner in the partnership will depend upon the status of the partner and the activities of the partnership. A holder of ADSs or ordinary shares that is a partnership, and partners in such partnership, should consult their own tax advisors about the U.S. federal income and estate tax consequences of purchasing, owning and disposing of the ADSs or ordinary shares.

***Each prospective holder of ADSs should consult its own tax advisors regarding the U.S. federal, state and local or other tax consequences of acquiring, owning and disposing of the company's ADSs in light of their particular circumstances. U.S. holders should also review the discussion under "German Taxation of ADSs" for the German tax consequences to a U.S. holder of the ownership of the ADSs.***

#### **General**

In general, and taking into account the earlier assumptions, a U.S. holder of ADSs is treated as the owner of the ordinary shares represented by such ADSs. Exchanges of ordinary shares for ADSs, and ADSs for ordinary shares, respectively, generally will not be subject to U.S. federal income tax.

#### **Distributions**

Under the United States federal income tax laws, and subject to the discussion below under "Additional United States Federal Income Tax Consequences – PFIC Rules," the gross amount of any distribution that is actually or constructively received by a U.S. holder with respect to its ordinary shares (including shares deposited in respect of ADSs) will be a dividend includible in gross income of a U.S. holder as ordinary income to the extent the amount of such distribution is paid out of our current and accumulated earnings and profits, as determined for U.S. federal income tax purposes. To the extent the amount of such distribution exceeds our current and accumulated earnings and profits as so computed, it will be treated first as a non-taxable return of capital to the extent of such U.S. holder's adjusted tax basis in its ADSs or ordinary shares, and to the extent the amount of such distribution exceeds such adjusted tax basis, will be treated as gain from the sale of the ADSs or ordinary shares. If you are a non-corporate U.S. holder, dividends paid to you that constitute qualified dividend income will be taxable to you at a preferential rate (rather than the higher rates of tax generally applicable to items of ordinary income) provided that you hold our ADSs or ordinary shares for more than 60 days during the 121-day period beginning 60 days before the ex-dividend date and meet other holding period requirements. If we are a passive foreign investment company (as discussed below under "Additional United States Federal Income Tax Consequences—PFIC Rules"), distributions paid by us with respect ADSs or ordinary shares will not be eligible for the preferential income tax rate. Prospective investors should consult their own tax advisors regarding the taxation of distributions under these rules.

You must include any German tax withheld from the dividend payment in this gross amount even though you do not in fact receive it. The gross amount of the dividend is taxable to you when you receive the dividend, actually or constructively. Dividends paid on ADSs will not be eligible for the dividends-received deduction generally available to corporate U.S. holders. The gross amount of any dividend paid in foreign currency will be included in the gross income of a U.S. holder in an amount equal to the U.S. dollar value of the foreign currency calculated by reference to the exchange rate in effect on the date the dividend distribution is includable in the U.S. holder's income, regardless of whether the payment is in fact converted into U.S. dollars. If the foreign currency is converted into U.S. dollars on the date of receipt by the depository, in the case of ADSs, or the U.S. holder, in the case of ordinary shares, a U.S. holder generally should not be required to recognize foreign currency gain or loss in respect of the dividend. If the foreign currency received is not converted into U.S. dollars on the date of receipt, a U.S. holder will have a basis in the foreign currency equal to its U.S. dollar value on the date of receipt. Any gain or loss on a subsequent conversion or other disposition of the foreign currency will be treated as ordinary income or loss, and will generally be income or loss from sources within the United States for foreign tax credit limitation purposes. The amount of any distribution of property other than cash will be the fair market value of the property on the date of the distribution, less the sum of any encumbrance assumed by the U.S. holder.

For foreign tax credit purposes, our dividend distributions will generally constitute income from sources outside the United States and be "passive" income for purposes of computing the foreign tax credit allowable to the U.S. holder. The amount of the qualified dividend income, if any, paid to a U.S. holder that is subject to the reduced dividend income tax rate and that is taken into account for purposes of calculating the U.S. holder's U.S. foreign tax credit limitation must



be reduced by the rate differential portion of the dividend. Prospective investors should consult their own tax advisors regarding the implications of the foreign tax credit provisions for them, in light of their particular situation.

### ***U.S. Taxation of Sale or Other Disposition***

Subject to the discussion below under “—Additional United States Federal Income Tax Consequences—PFIC Rules,” a U.S. holder will generally recognize a gain or loss for U.S. federal income tax purposes upon the sale or other disposition of ADSs or ordinary shares in an amount equal to the difference between the U.S. dollar value of the amount realized from such sale or other disposition and the U.S. holder’s tax basis in such ADSs or ordinary shares. Such gain or loss generally will be capital gain or loss. Capital gain of a non-corporate U.S. holder recognized on the sale or other disposition of ADSs or ordinary shares held for more than one year is generally eligible for a reduced rate of taxation. The gain or loss will generally be income or loss from sources within the United States for foreign tax credit limitation purposes. The deductibility of capital losses is subject to limitations.

A U.S. holder that receives foreign currency on the sale or other disposition of ADSs or ordinary shares will realize an amount equal to the U.S. dollar value of the foreign currency on the date of sale (or, in the case of cash basis and electing accrual basis taxpayers, the U.S. dollar value of the foreign currency on the settlement date) provided that the ADSs or ordinary shares, as the case may be, are treated as being “traded on an established securities market.” If a U.S. holder receives foreign currency upon a sale or exchange of ADSs or ordinary shares, gain or loss, if any, recognized on the subsequent sale, conversion or disposition of such foreign currency will be ordinary income or loss, and will generally be income or loss from sources within the United States for foreign tax credit limitation purposes. However, if such foreign currency is converted into U.S. dollars on the date received by the U.S. holder, a cash basis or electing accrual U.S. holder should not recognize any gain or loss on such conversion.

### ***Redemption***

A redemption of ADSs or the ordinary shares underlying such ADSs by us will be treated as a sale of the redeemed ADSs or ordinary shares by the U.S. holder or as a distribution to the U.S. holder (which is taxable as described above under “—Distributions”).

### **Additional United States Federal Income Tax Consequences**

***PFIC Rules.*** Special adverse U.S. federal income tax rules apply to U.S. holders owning shares of a passive foreign investment company, or PFIC. In general, if you are a U.S. holder, we will be a PFIC with respect to you if for any taxable year in which you held our ADSs or ordinary shares: (i) at least 75% of our gross income for the taxable year is passive income (the “income test”) or (ii) at least 50% of the value, determined on the basis of a quarterly average, of our assets is attributable to assets that produce or are held for the production of passive income (the “asset test”). The determination of whether we are a PFIC will be made annually. Accordingly, it is possible that we may become a PFIC in the current or any future taxable year due to changes in our asset or income composition. The composition of income and assets will be affected by whether, how, and how quickly, we spend any cash we currently hold.

Passive income for purposes of the income test generally includes dividends, interest, royalties, rents (other than certain rents and royalties derived in the active conduct of a trade or business), annuities and gains from the disposition of assets that produce passive income. Any cash we hold generally will be treated as held for the production of passive income for the purpose of the PFIC test, and any income generated from cash or other liquid assets generally will be treated as passive income for such purpose. If a foreign corporation owns at least 25% by value of the stock of another corporation, the foreign corporation is treated for purposes of the PFIC tests as owning its proportionate share of the assets of the other corporation, and as receiving directly its proportionate share of the other corporation’s income.

We believe that we were not a PFIC for our taxable year ending December 31, 2018. However, since the determination of whether we are a PFIC is based upon such factual matters as our market capitalization and the valuation of our assets and upon certain assumptions and methodologies in which we have based our analysis, there can be no assurance that the IRS will agree with our position. Furthermore, because we have valued our goodwill for purposes of the asset test based on the market value of our equity, a further decline in the value of our equity due to fluctuations in the price of our ADSs and ordinary shares could result in us becoming a PFIC for our taxable year ending on December 31, 2018 or for future taxable years.

If we were to be treated as a PFIC, the U.S. federal income tax consequences to a U.S. holder of the acquisition, ownership, and disposition of our ADSs or ordinary shares will depend on whether such U.S. holder makes an election to treat us as a “qualified electing fund” or “QEF” under Section 1295 of the Code (a QEF Election) or a mark-to-market election under Section 1296 of the Code (a Mark-to-Market Election). A U.S. holder who makes a QEF election will be taxed currently on such U.S. holder’s pro rata share of our annual ordinary income and capital gains (each separately stated). We do not intend to furnish holders with the information necessary to make a QEF Election. A U.S. holder may make a Mark-to-Market Election if our shares or ADSs are “marketable stock,” and would, as a result of such election, include as ordinary income the excess of the fair market value of such U.S. holder’s ADSs or ordinary shares at year-end over such U.S. holder’s basis in those ADSs or ordinary shares. In addition, any gain recognized upon a sale of ADSs or ordinary shares would be taxed as ordinary income in the year of sale.

A U.S. Holder that does not make either a QEF Election or a Mark-to-Market Election (a Non-Electing U.S. Holder) would be subject to special adverse tax rules with respect to (i) “excess distributions” received on our ADSs or ordinary shares and (ii) any gain recognized upon a sale or other disposition (including a pledge) of our ADSs or ordinary shares. A Non-Electing U.S. Holder would be treated as if it had realized such gain and certain “excess distributions” ratably over its holding period for our ADSs or ordinary shares and would be taxed at the highest tax rate in effect for each such year to which the gain was allocated, together with an interest charge in respect of the tax attributable to each such year. Special rules apply for calculating the amount of the foreign tax credit with respect to “excess distributions” by a PFIC.

With certain exceptions, a Non-Electing U.S. Holder’s ADSs or ordinary shares will be treated as stock in a PFIC if we were a PFIC at any time during the U.S. holder’s holding period in for its ordinary shares or ADSs, even if we are not currently a PFIC.

Dividends that a U.S. holder receives from us will not be eligible for the special tax rates applicable to qualified dividend income if we are treated as a PFIC either in the taxable year of the distribution or the preceding taxable year, but instead will be taxable at rates applicable to ordinary income.

If we are were to be treated as a PFIC, owners of our ADSs or ordinary shares (including, potentially, indirect owners) would be required to file an information report with respect to such interest on their tax returns, subject to certain exceptions. U.S. holders are urged to consult their tax advisors regarding the application of these rules to their ownership of the ADSs.

**Medicare Tax.** Certain U.S. holders who are individuals, estates and trusts will be required to pay an additional 3.8% tax on some or all of their “net investment income,” which generally includes its dividend income and net gains from the disposition of our ADSs or ordinary shares. U.S. holders should consult their own tax advisors regarding the applicability of this additional tax on their particular situation.

**Information with Respect to Foreign Financial Assets.** Owners of “specified foreign financial assets” with an aggregate value in excess of \$50,000 (and in some circumstances, a higher threshold) may be required to file an information report with respect to such assets on their tax returns. “Specified foreign financial assets” may include financial accounts maintained by foreign financial institutions, as well as the following, but only if they are not held in accounts maintained by financial institutions: (i) stocks and securities issued by non-U.S. persons, (ii) financial instruments and contracts held for investment that have non-U.S. issuers or counterparties, and (iii) interests in foreign entities. U.S. holders are urged to consult their tax advisors regarding the application of this legislation to their ownership of the ADSs and ordinary shares.

**Backup Withholding and Information Reporting.** Backup withholding and information reporting requirements will generally apply to certain payments to U.S. holders of dividends on ADSs or ordinary shares. We, our agent, a broker or any paying agent, may be required to withhold tax from any payment that is subject to backup withholding unless the U.S. holder (1) is an exempt payee, or (2) provides the U.S. holder’s correct taxpayer identification number and complies with applicable certification requirements. Payments made to U.S. holders by a broker upon a sale of our ADSs or ordinary shares will generally be subject to backup withholding and information reporting. If the sale is made through a foreign office of a foreign broker, however, the sale will generally not be subject to either backup withholding or information reporting. This exception may not apply if the foreign broker is owned or controlled by U.S. persons, or is engaged in a U.S. trade or business.

Backup withholding is not an additional tax. Any amounts withheld from a payment to a U.S. holder of ADSs or ordinary shares under the backup withholding rules can be credited against any U.S. federal income tax liability of the U.S. holder, provided the required information is timely furnished to the IRS. A U.S. holder generally may obtain a refund of any amounts withheld under the backup withholding rules that exceeds the U.S. holder's income tax liability by filing a refund claim with the IRS. Prospective investors should consult their own tax advisors as to their qualification and procedure for exemption from backup withholding.

**The above description is not intended to constitute a complete analysis of all tax consequences relating to the purchase, ownership or disposition of the ADSs or ordinary shares. Investors deciding on whether or not to invest in ADSs or ordinary shares should consult their own tax advisors concerning the tax consequences of their particular situations.**

**F. DIVIDENDS AND PAYING AGENTS**

Not applicable.

**G. STATEMENT BY EXPERTS**

Not applicable.

**H. DOCUMENTS ON DISPLAY**

We previously filed with the SEC our registration statements on Form F-1 (Registration No. 333-191213 and 333-194843), as amended, including the prospectuses contained therein, to register our ordinary shares. We have also filed with the SEC a related registration statement on F-6 (Registration No. 333-191526) to register the ADSs.

We are subject to the periodic reporting and other informational requirements of the Exchange Act. Under the Exchange Act, we are required to file reports and other information with the SEC. Specifically, we are required to file annually a Form 20-F within four months after the end of each fiscal year, which is December 31. Copies of reports and other information, when so filed, may be inspected without charge and may be obtained at prescribed rates at the public reference facilities maintained by the Securities and Exchange Commission at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. The SEC also maintains a website at [www.sec.gov](http://www.sec.gov) that contains reports, proxy and information statements, and other information regarding registrants that make electronic filings with the SEC using its EDGAR system. As a foreign private issuer, we are exempt from the rules under the Exchange Act prescribing the furnishing and content of quarterly reports and proxy statements, and officers, directors and principal shareholders are exempt from the reporting and short-swing profit recovery provisions contained in Section 16 of the Exchange Act.

**I. SUBSIDIARY INFORMATION**

Not applicable.

**ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

We are exposed to market risk from fluctuations in interest rates and foreign currency exchange rates which may adversely affect our results of operations and financial condition. We seek to minimize these risks through regular operating and financing activities and, when we consider it to be appropriate, through the use of derivative financial instruments. We do not purchase, hold or sell derivative financial instruments for trading or speculative purposes.

**Interest Rates**

We assess our exposure to market risk for changes in interest rates as low, as our loans have entirely fixed interest rates, with one exception. An immediate 10% change in interest rates would not have a material effect on our financial condition or results of operations. For the first tranche of the loan received from the European Investment Bank amounting to € 10.0 million, there exists a cash-settled warrant at the maturity date (5 years after draw down), after the occurrence of a trigger event, or on the expiration date (10 years after draw down).

## Equity price risk

In addition, for the first tranche of the loan received from the European Investment Bank, the cash-settled warrant is dependent on the Company's share price. Changes in the Company's share price will affect the value of an equity forward derivative instrument (increasing share prices as compared to the share price at disbursement date will lead to a negative fair value of the derivative, decreasing share prices will lead to a positive fair value of the derivative).

## Foreign Exchange Rates

We transact business globally and are subject to risks associated with fluctuating foreign exchange rates. The countries outside of the eurozone in which we sell our products and services have not historically been highly inflationary. Approximately 58.0% and 44.0% of our revenues were derived from sales outside of the eurozone region in 2018 and 2017, respectively. Receivables denominated in a foreign currency are initially recorded at the exchange rate at the transaction date and subsequently remeasured in euro based on period-end exchange rates. Transaction gains and losses that arise from exchange rate fluctuations are charged to income.

## ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

### American Depositary Shares

#### *Fees and Expenses*

Citibank, N.A. serves as the depository for our ADSs. Holders of our ADSs are required to pay the following fees to the depository under the terms of our deposit agreement:

Service	Fees
(1) Issuance of ADSs upon deposit of shares (excluding issuances as a result of distributions of shares described in (4) below)	Up to U.S. 5¢ per ADS issued
(2) Cancellation of ADSs	Up to U.S. 5¢ per ADS canceled
(3) Distribution of cash dividends or other cash distributions ( <i>i.e.</i> , sale of rights or other entitlements)	Up to U.S. 5¢ per ADS held
(4) Distribution of ADSs pursuant to (i) stock dividends or other free stock distributions or (ii) exercise of rights to purchase additional ADSs.	Up to U.S. 5¢ per ADS held
(5) Distribution of securities other than ADSs or rights to purchase additional ADSs ( <i>i.e.</i> , spin-off shares)	Up to U.S. 5¢ per ADS held
(6) ADS Services	Up to U.S. 5¢ per ADS held on the applicable record date(s) established by the depository

Holders of our ADSs are responsible for paying certain charges such as:

- taxes (including applicable interest and penalties) and other governmental charges;
- the registration fees as may from time to time be in effect for the registration of ordinary shares on the share register and applicable to transfers of ordinary shares to or from the name of the custodian, the depository or any nominees upon the making of deposits and withdrawals, respectively;
- certain cable, telex and facsimile transmission and delivery expenses;
- the expenses and charges incurred by the depository in the conversion of foreign currency;
- the fees and expenses incurred by the depository in connection with compliance with exchange control regulations and other regulatory requirements applicable to ordinary shares, ADSs and ADRs; and

- the fees and expenses incurred by the depository, the custodian, or any nominee in connection with the servicing or delivery of deposited property.

ADS fees and charges payable upon (i) deposit of ordinary shares against issuance of ADSs and (ii) surrender of ADSs for cancellation and withdrawal of ordinary shares are charged to the person to whom the ADSs are delivered (in the case of ADS issuances) and to the person who delivers the ADSs for cancellation (in the case of ADS cancellations). In the case of ADSs issued by the depository into DTC or presented to the depository via DTC, the ADS issuance and cancellation fees and charges are charged to the DTC participant(s) receiving the ADSs or the DTC participant(s) surrendering the ADSs for cancellation, as the case may be, on behalf of the beneficial owner(s) and will be charged by the DTC participant(s) to the account(s) of the applicable beneficial owner(s) in accordance with the procedures and practices of the DTC participant(s) as in effect at the time. ADS fees and charges in respect of distributions and the ADS service fee are charged to the holders as of the applicable ADS record date. In the case of distributions of cash, the amount of the applicable ADS fees and charges is deducted from the funds being distributed. In the case of (i) distributions other than cash and (ii) the ADS service fee, holders as of the ADS record date will be invoiced for the amount of the ADS fees and charges. For ADSs held through DTC, the ADS fees and charges for distributions other than cash and the ADS service fee are charged to the DTC participants in accordance with the procedures and practices prescribed by DTC and the DTC participants in turn charge the amount of such ADS fees and charges to the beneficial owners for whom they hold ADSs.

In the event of refusal to pay the depository fees, the depository may, under the terms of the deposit agreement, refuse the requested service until payment is received or may set off the amount of the depository fees from any distribution to be made to the ADS holder.

Note that the fees and charges you may be required to pay may vary over time and may be changed by us and by the depository. You will receive prior notice of such changes.

The depository may reimburse us for certain expenses incurred by us in respect of the ADR program by making available a portion of the ADS fees charged in respect of the ADR program or otherwise, upon such terms and conditions as we and the depository agree from time to time.

## **PART II**

### **ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES**

None.

### **ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS**

There have been no material modifications to the rights of security holders for the year ended on December 31, 2018.

### **ITEM 15 CONTROLS AND PROCEDURES**

#### **(a) Disclosure Controls and Procedures**

Our management, including our Chief Executive Officer and Chief Financial Officer, have conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934, as amended (the Exchange Act)) as of December 31, 2018. Our Chief Executive Officer and Chief Financial Officer concluded that, as a result of material weaknesses in internal control over financial reporting as described below, our disclosure controls and procedures were not effective as of December 31, 2018. For purposes of Rule 13a-15(e), the term disclosure controls and procedures means controls and other procedures of an issuer that are designed to ensure that information required to be disclosed by the issuer in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and

procedures designed to ensure that information required to be disclosed by an issuer in the reports that it files or submits under the Exchange Act is accumulated and communicated to the issuer's management, including its Chief Executive Officer and Chief Financial Officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

**(b) Management's Annual Report on Internal Control Over Financial Reporting**

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). The Company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB). A company's internal control over financial reporting includes those policies and procedures that: (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of the Company's annual or interim financial statements will not be prevented or detected on a timely basis.

Management assessed the effectiveness of our internal control over financial reporting as of December 31, 2018 using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control-Integrated Framework (2013) (the "COSO 2013 Framework"). Based on our assessment and those criteria, management concluded that our internal control over financial reporting was not effective as of December 31, 2018 due to material weaknesses in our internal control over financial reporting described below.

**Control Environment**

Our Supervisory Board did not exercise sufficient oversight responsibilities for management's design, implementation and conduct of internal control over the five components of the COSO 2013 Framework.

Our process to evaluate the competence and expertise necessary to support the growth and complexity of the business, its financial reporting, and response to address shortcomings was not sufficiently implemented during 2018. As a result, we did not have a sufficient number of adequately trained personnel within the organization and outsourced service providers with assigned responsibility and accountability for the design, effective operation, and documentation of internal control over financial reporting.

We did not (i) sufficiently evaluate the performance of internal control responsibilities, including expected levels of competence, and (ii) sufficiently provide performance incentives and rewards or exercise disciplinary actions, as appropriate. The Company did not sufficiently hold personnel accountable for their internal control responsibilities through performance measurement plans and goals, and did not provide sufficient education to personnel on the COSO 2013 Framework and their financial reporting and related internal control responsibilities.

**Risk Assessment**

We did not have sufficient knowledge of IFRS, including understanding of new accounting standards, in order for the preparation of financial statements in accordance with IFRS and consideration of the impact of changes on our internal control over financial reporting.

We did not have an effective risk assessment process to evaluate changes in IFRS accounting standards in order to identify and assess necessary changes in how underlying data is captured, generated, analyzed, and reported, and the need to design and implement additional controls.

We did not appropriately apply materiality in the determination of the significant components of the entity, significant accounts and disclosures at the entity and component level, relevant assertions over the accounts and disclosures, and how these items link to the related business process and internal controls.

We did not design control activities that are responsive to the identified fraud risks, including the risk of bias and management override of controls.

#### Information and Communication

We did not have sufficient processes and controls in place to ensure the timely identification and communication of relevant and reliable information sourced internally and externally to financial reporting personnel, management, and our Supervisory Board, to enable appropriate evaluation and disclosure of such information in the Company's financial reporting processes.

#### Monitoring Activities

We did not design and implement and operate effective monitoring activities to ascertain whether the processes and internal controls related to the five COSO 2013 Framework components (and underlying principles) were present and functioning.

We did not establish recurring monitoring activities over process level controls related to routine transactions or monitoring activities over controls related to unusual nonrecurring transactions. The Company did not have an effective, functioning internal audit group during the year whose responsibility it was to monitor the effectiveness of internal controls.

We did not have a timely process to remediate our existing control deficiencies.

#### Control Activities

We did not have a proper process in place to sufficiently identify and assess new events and transactions ahead of time in order to consider necessary adjustments to our system of internal control over financial reporting.

As a consequence of the ineffective control environment, risk assessment, information and communication and monitoring activities components, the Company did not have effective control activities related to the design and operation of process-level controls across all processes.

We did not have effective general information technology general controls (GITCs) over our information technology system that supports the Company's financial reporting processes to ensure that information used in financial reporting is timely, current, accurate, complete, accessible, protected and verifiable and retained, specifically inappropriate user creation and authorization assignment and ineffective program change management due to lack of proper documentation and approval. Accordingly, automated process-level controls and manual controls that are dependent upon the completeness and accuracy of information derived from IT systems are also determined to be ineffective. Additionally, the Company did not have effective end-user computing controls over manual spreadsheets used in the financial reporting process.

The Company did not develop adequate written policies and procedures to support the effective implementation and operation of the controls.

In addition, the following process-level material weaknesses were identified:

Financial Statement Close and Reporting Process



- Ineffective design and implementation, and operation of controls over the completeness, existence and accuracy of the financial statement close and reporting process and financial statement disclosures.
- Ineffective design and implementation, and operation of controls over the completeness, existence, accuracy and presentation of the consolidated statements of cash flows.
- Ineffective design and implementation, and operation of controls to ensure intercompany transactions are completely and accurately identified, reconciled, evaluated and eliminated.

Adoption of New Accounting Standards

- Ineffective design and implementation and operation of controls over the completeness, existence, accuracy and presentation of account balances and disclosures related to the adoption of the new accounting standards, IFRS 15, *Revenue from Contracts with Customers*, and IFRS 9, *Financial Instruments*.

Impairment

- Ineffective design and implementation and operation of controls to assess the existence of impairment indicators and to perform an impairment assessment of the Company's long-lived assets in accordance with IAS 36, *Impairment of Assets* including ineffective design and implementation and operation of controls over the appropriateness of the assumptions and methodology used to measure the fair value of cash-generating units.

These control deficiencies resulted in several material and immaterial misstatements to the preliminary consolidated financial statements that were corrected prior to the issuance of the consolidated financial statements. These control deficiencies create a reasonable possibility that material misstatements in the consolidated financial statements will not be prevented or detected on a timely basis, and therefore we concluded that the deficiencies represent material weaknesses in our internal control over financial reporting and our internal control over financial reporting was not effective as of December 31, 2018.

KPMG AG Wirtschaftsprüfungsgesellschaft, an independent registered public accounting firm, has audited the consolidated financial statements included in this Annual Report on Form 20-F and, as part of the audit, has issued an adverse opinion on the effectiveness of the Company's internal control over financial reporting as of December 31, 2018, which is included on page F-3 in Part III, Item 18 of this Form 20-F.

**(c) Remediation Plan**

We continue to work to strengthen our internal controls over financial reporting. Our management, with the oversight of the Supervisory Board, has undertaken a plan to remediate the material weaknesses identified above. The remediation efforts are intended to both address the identified material weakness and to enhance our overall financial control environment, include:

- The company will further develop and document detailed policies and procedures regarding our business processes for significant accounts, critical accounting policies and procedures, critical accounting estimates and significant unusual transactions and design and implement and operate effective process-level controls to mitigate the risk of misstatement due to error and/or fraud;
- The Company will further develop and document detailed policies and control procedures over our financial statement close and reporting process, presentation of the consolidated statement of cash flows and evaluation of intercompany transactions.
- The Company will strengthen its internal audit function through monthly testing of controls, and increased interaction and engagement with management and the Supervisory Board to review and monitor our accounting procedures, perform internal audit procedures, and to prepare our consolidated financial statements and reports.
- The Company will provide education and training to employees assigned with responsibility and accountability for the design, effectiveness and operations of controls in their respective processes.

- The Company will continue to enhance the information and communication processes to ensure the organization communicates information internally in a timely manner, including information regarding objectives, responsibilities and the functioning of internal controls over financial reporting.
- The Company will further develop the detailed remediation plan, with Supervisory Board oversight, to specifically address the material weaknesses related to the control environment, risk assessment, information and communication, and monitoring activities.
- The Company has initiated development of a comprehensive revenue recognition and contract review training that has been focused on the impacts of adopting IFRS 15, *Revenue from Contracts with Customers*, and IFRS 9, *Financial Instruments*. This training is focused on senior-level management and customer-facing employees, as well as finance, sales and marketing personnel.
- During 2018, the Company hired additional personnel for its IT function. The Company will provide education and training to the IT team on the Company's accounting policies and procedures and business processes and internal controls. In addition, the Company will coordinate with external IT consultants to establish effective general controls over relevant IT systems to ensure that automated process level controls and information produced and maintained in our IT systems are reliable.

Although we intend to complete the remediation process as promptly as possible, we cannot at this time estimate how long it will take to remediate these material weaknesses. In addition, we may discover additional material weaknesses that require additional time and resources to remediate and we may decide to take additional measures to address the material weaknesses or modify the remediation steps described above. Until these weaknesses are remediated, we plan to continue to perform additional analyses and other procedures to ensure that our consolidated financial statements are prepared in accordance with IFRS.

**(d) Changes in internal control over financial reporting**

As described above under "Remediation Plan," we are undertaking a broad range of remedial actions to address the material weaknesses in our internal control over financial reporting. These remedial procedures continued throughout the year ended December 31, 2018.

**ITEM 16. RESERVED**

**ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT**

Our Supervisory Board has determined that the chairman of our Audit Committee, Peter Nietzer, qualifies as an "audit committee financial expert" within the meaning of this Item 16A. Our Supervisory Board has determined that Peter Nietzer and each of the other members of the Audit Committee is independent under the requirements of the New York Stock Exchange and Rule 10A-3 of the Exchange Act.

**ITEM 16B. CODE OF ETHICS**

We have adopted a written code of business conduct and ethics, or code of conduct, which outlines the principles of legal and ethical business conduct under which we do business. The code of conduct applies to all of our Supervisory Board members, Management Board members and employees. The full text of the code of conduct is available on our website at [www.voxeljet.de](http://www.voxeljet.de). This website address is included in this annual report as an inactive textual reference only. The information and other content appearing on our website are not part of this annual report.

No waivers have been granted to the code of conduct since its adoption.

**ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES**

The following table sets forth the fees billed to us by our independent auditors during the fiscal years ended December 31, 2017, and 2018:

	<b>December 31,</b>	
	<b>2018</b>	<b>2017</b>
	(€ in thousands)	
Audit fees	€ 921	€ 528
Audit-related fees	113	46
Tax fees	--	--
All other fees	--	--
<b>Total</b>	<b>€ 1,034</b>	<b>€ 574</b>

Audit services include the audit of our financial statements, the review of interim financial information and SEC registration statements, and statutory audits. Audit-related services include services related to a Form F-3 filing.

**Pre-Approval Policies and Procedures**

The advance approval of the Audit Committee or members thereof, to whom approval authority has been delegated, is required for all audit and non-audit services provided by our auditors. All services provided by the principal auditing firm in 2018 detailed in the table above were approved by the Audit Committee.

**ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES**

Not applicable.

**ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS**

None.

**ITEM 16F. CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT**

Not applicable.

**ITEM 16G. CORPORATE GOVERNANCE**

In general, under Section 303A.11 of the New York Stock Exchange Listed Company Manual, foreign private issuers such as us are permitted to follow home country corporate governance practices instead of certain provisions of the New York Stock Exchange Listed Company Manual without having to seek individual exemptions from the New York Stock Exchange as long as we disclose in the annual report the significant ways in which our corporate governance practices differ from those followed by U.S. companies. In addition, we also may qualify for certain exemptions under the New York Stock Exchange Listed Company Manual as a foreign private issuer that may affect our corporate governance practices.

The significant differences between the corporate governance practices that we follow and those set forth in the New York Stock Exchange Listed Company Manual are described below:

- Section 303A.01 of the New York Stock Exchange Listed Company Manual requires listed companies to have a majority of independent directors. There is no requirement under German law that the majority of members of a supervisory board be independent, and the rules of procedure of our Supervisory Board provide that the Supervisory Board should be composed of a majority of independent members, though this is not a mandatory requirement. All current members of our Supervisory Board are independent.
- Section 303A.04(b) of the New York Stock Exchange Listed Company Manual requires all companies listed on the New York Stock Exchange to have a written nominating committee charter. German law does not require a separate charter for a nominating committee. Instead, the responsibilities and authority of our

Compensation and Nominating Committee are set forth in the rules of procedure of our Supervisory Board and in the applicable German laws.

- Section 303A.05(b) of the New York Stock Exchange Listed Company Manual requires all companies listed on the New York Stock Exchange to have a written compensation committee charter. German law does not require a separate charter for a compensation committee. Instead, the responsibilities and authority of our Compensation and Nominating Committee are set forth in the rules of procedure of our Supervisory Board and in the applicable German laws.
- Section 303A.07(a) of the New York Stock Exchange Listed Company Manual requires each member of the audit committee of a listed company to be financially literate and also requires that at least one audit committee member have accounting or related financial management expertise. German law requires only that one supervisory board member have knowledge in the areas of accounting or auditing. Accordingly, the rules of procedure of our Supervisory Board stipulate that the chairman of our Audit Committee shall have special knowledge and experience of the application of accounting principles and internal control procedures. The chairman of the Audit Committee, Peter Nietzer, fulfills these requirements. Although we believe that all members of our Audit Committee are financially literate, neither German law, nor the rules of procedure of our Supervisory Board, require all members of our Audit Committee to be financially literate.
- Section 303A.07(b) of the New York Stock Exchange Listed Company Manual requires all companies listed on the New York Stock Exchange to have a written audit committee charter. German law does not require a separate charter for an audit committee. Instead, the responsibilities and authority of our Audit Committee are set forth in the rules of procedure of our Supervisory Board and in the applicable German laws.
- Section 303A.09 of the New York Stock Exchange Listed Company Manual requires all listed companies to adopt and disclose corporate governance guidelines. German law does not require a company to adopt separate corporate governance guidelines. Instead, we follow the German Corporate Governance Code as described above. In addition, certain of the subjects to be addressed in the corporate governance guidelines pursuant to Section 303A.09 are contained in the rules of procedure of our Supervisory Board.

#### **ITEM 16H. MINE SAFETY DISCLOSURE**

Not applicable.

### **PART III**

#### **ITEM 17. FINANCIAL STATEMENTS**

We have elected to provide financial statements pursuant to Item 18.

#### **ITEM 18. FINANCIAL STATEMENTS**

See the following items starting at page F-1:

- (a) Report of Independent Registered Public Accounting Firm
- (b) Report of Independent Registered Public Accounting Firm
- (c) Consolidated Statements of Financial Position as of December 31, 2018 and 2017
- (d) Consolidated Statements of Comprehensive Loss for the years ended December 31, 2018, 2017, and 2016
- (e) Consolidated Statements of Changes in Equity for the years ended December 31 2018, 2017, and 2016
- (f) Consolidated Statements of Cash Flows for the years ended December 31 2018, 2017, and 2016

(g) Notes to the Consolidated Financial Statements

**ITEM 19. EXHIBITS**

<b>Exhibit Number</b>	<b>Description of Exhibit</b>
1.1	<a href="#">Articles of Association of voxeljet AG, as amended (incorporated by reference to Exhibit 3.1 to the Company's Form 6-K, filed with the Securities and Exchange Commission (the "Commission") on November 27, 2018).</a>
1.2	<a href="#">Rules of Procedure of the Supervisory Board of voxeljet AG (incorporated by reference to Exhibit 3.2 to the Company's Registration Statement on Form F-1 (No. 333-191213), filed with the Commission on October 7, 2013).</a>
1.3	<a href="#">Rules of Procedure of the Management Board of voxeljet AG (incorporated by reference to Exhibit 3.3 to the Company's Registration Statement on Form F-1 (No. 333-191213), filed with the Commission on October 7, 2013).</a>
2.1	<a href="#">Form of specimen of ordinary registered share certificate and English translation (incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form F-1 (No. 333-191213), filed with the Commission on October 11, 2013).</a>
2.2	<a href="#">Form of Deposit Agreement (incorporated by reference to Exhibit 99-a to the Company's Registration Statement on Form F-6 (No. 333-191526), filed with the Commission on October 15, 2013).</a>
2.3	<a href="#">Form of American Depositary Receipt (included in Exhibit 2.2).</a>
4.1†	<a href="#">Cross License Agreement between voxeljet AG (formerly known as Voxeljet Technology GmbH) and BEGO Medical GmbH, dated August 21, 2012 (English translation) (incorporated by reference to Exhibit 10.3 to the Company's Registration Statement on Form F-1 (No. 333-191213), filed with the Commission on October 7, 2013).</a>
4.2†	<a href="#">Nonexclusive Patent License and Sublicense Agreement between Z Corporation and voxeljet AG (formerly known as Voxeljet Technology GmbH), dated August 16, 2004 (incorporated by reference to Exhibit 10.4 to the Company's Registration Statement on Form F-1 (No. 333-191213), filed with the Commission on October 7, 2013).</a>
4.3	<a href="#">First Amendment to the Nonexclusive Patent License and Sublicense Agreement between Z Corporation and voxeljet AG (formerly known as Voxeljet Technology GmbH), dated March 31, 2011 (incorporated by reference to Exhibit 10.5 to the Company's Registration Statement on Form F-1 (No. 333-191213), filed with the Commission on October 7, 2013).</a>
4.4†	<a href="#">Patent and Know-How Transfer Agreement between voxeljet AG (formerly known as Generis GmbH) and The ExOne Company (formerly known as Extrude Hone GmbH), dated June 27, 2003 (incorporated by reference to Exhibit 10.6 to the Company's Registration Statement on Form F-1 (No. 333-191213), filed with the Commission on October 7, 2013).</a>
4.5†	<a href="#">Amendment to Patent and Know-How Transfer Agreement between voxeljet AG (formerly known as Voxeljet Technology GmbH) and Prometal RCT GmbH, dated July 14, 2009 (incorporated by reference to Exhibit 10.7 to the Company's Registration Statement on Form F-1 (No. 333-191213), filed with the Commission on October 7, 2013).</a>
4.6†	<a href="#">Form of Finance Contract between European Investment Bank and voxeljet AG, dated November 9, 2017 (incorporated by reference to Exhibit 99.2 to the Company's Report on Form 6-K, filed with the Commission on November 9, 2017).</a>
4.7†	<a href="#">Form of First Demand Guarantee Agreement between European Investment Bank and voxeljet America Inc., dated November 9, 2017. (incorporated by reference to Exhibit 99.3 to the Company's Report on Form 6-K, filed with the Commission on November 9, 2017).</a>
4.8†	<a href="#">Form of Synthetic Warrant Agreement between European Investment Bank and voxeljet AG, dated November 9, 2017. (incorporated by reference to Exhibit 99.4 to the Company's Report on Form 6-K, filed with the Commission on November 9, 2017).</a>
4.9	<a href="#">Underwriting Agreement by and among Piper Jaffray &amp; Co., Baader Bank AG and voxeljet AG, dated October 17, 2018 (incorporated by reference to Exhibit 1.1 to the Company's Report on Form 6-K, filed with the Commission on October 22, 2018).</a>

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<b>Exhibit Number</b>	<b>Description of Exhibit</b>
8.1*	<a href="#">Subsidiaries of voxeljet AG.</a>
12.1*	<a href="#">Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.</a>
12.2*	<a href="#">Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.</a>
13.1*	<a href="#">Certification of Chief Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</a>
13.2*	<a href="#">Certification of Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</a>
15.1*	<a href="#">Consent of KPMG AG Wirtschaftsprüfungsgesellschaft</a>
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

\* Filed herewith.

† Confidential treatment has been granted with respect to certain portions of this exhibit. Omitted portions have been filed separately with the Securities and Exchange Commission.

**SIGNATURE**

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

VOXELJET AG

/s/ Rudolf Franz

Name: Rudolf Franz

Title: *Chief Financial Officer*

Date: March 28, 2019



voxeljet AG

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## Report of Independent Registered Public Accounting Firm

To the Stockholders and Supervisory Board  
voxeljet AG:

### *Opinion on the Consolidated Financial Statements*

We have audited the accompanying consolidated statements of financial position of voxeljet AG and subsidiaries (the Company) as of December 31, 2018 and 2017, the related consolidated statements of comprehensive loss, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2018, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2018, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated March 28, 2019 expressed an adverse opinion on the effectiveness of the Company's internal control over financial reporting.

### *Basis for Opinion*

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG AG Wirtschaftsprüfungsgesellschaft

We have served as the Company's auditor since 2007.

Munich, Germany  
March 28, 2019

## Report of Independent Registered Public Accounting Firm

To the Stockholders and Supervisory Board  
voxeljet AG:

### *Opinion on Internal Control Over Financial Reporting*

We have audited voxeljet AG's and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, because of the effect of the material weaknesses, described below, on the achievement of the objectives of the control criteria, the Company has not maintained effective internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated statements of financial position of the Company as of December 31, 2018 and 2017, the related consolidated statements of comprehensive loss, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2018, and the related notes (collectively, the consolidated financial statements), and our report dated March 28, 2019 expressed an unqualified opinion on those consolidated financial statements.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis. The following material weaknesses have been identified and included in management's assessment:

The Company did not have an effective control environment including:

- oversight by the Supervisory Board over the processes and internal controls over the five components of the COSO 2013 Framework;
- evaluation of the competence and expertise necessary to support the growth and complexity of the business, its financial reporting, and to develop an appropriate response to address any shortcomings effectively during 2018, and sufficient number of adequately trained personnel within the organization with assigned responsibility and accountability for the conduct of internal control over financial reporting or to supervise and review the work product of third party service providers engaged to assist the Company in its general information technology controls;
- effective controls to hold personnel accountable for their internal control responsibilities through performance measurement plans and goals, and
- sufficient training of personnel on the COSO 2013 Framework and their financial reporting and related internal control responsibilities.

The Company did not have an effective risk assessment process including:

- sufficient knowledge of IFRS to assess the application of new or modified accounting standards to its significant accounting policies and to assess the required changes to its processes and related internal controls over financial reporting;
- an effective continuous risk assessment process to identify and assess the financial reporting risks caused by changes in the operating environment, business operations, personnel or IT systems and to make necessary changes to its financial reporting processes and related internal controls to manage those risks;

- consideration of materiality in the determination of the significant components of the entity, significant accounts and disclosures at the entity and component level, relevant assertions over the accounts and disclosures, and the determination of risk tolerance to business process activities and the precision of related internal controls; and
- design of control activities that are responsive to the identified fraud risks, including the risk of bias and management override of controls.

The Company did not have effective information and communication processes and controls including:

- sufficient processes and controls in place to ensure the timely identification and communication of relevant and reliable information sourced internally and externally to financial reporting personnel, management and Supervisory Board.

The Company did not have effective monitoring activities including:

- effective controls to ascertain whether the processes and internal controls related to the five COSO 2013 Framework components (and underlying principles) were present and functioning;
- effective controls to establish recurring monitoring activities over process level controls related to routine transactions or unusual nonrecurring transactions;
- an effective, functioning internal audit group to monitor the effectiveness of internal controls
- an effective process and controls to timely process to remediate existing control deficiencies.

The Company did not have effective control activities including:

- development of adequate written policies and procedures to support the effective implementation and operation of the controls;
- effective control activities at the transaction level over certain significant accounts to mitigate the risk of material misstatement in financial reporting ;
- effective general information technology controls (GITCs) over the information technology system that supports the Company's financial reporting processes to ensure that all relevant and reliable information used in financial reporting is protected, verifiable and retained, specifically:
  - inappropriate user access controls in the SAP ERP system to ensure appropriate segregation of duties and to adequately restrict user and privileged access to appropriate personnel commensurate with their job responsibilities;
  - ineffective program change management controls, specifically the Company did not properly document the nature of the program changes, performance of testing and the approval;
- effective automated process-level controls and manual controls that are dependent upon the completeness and accuracy of information derived from IT systems;
- effective end-user computing controls over manual spreadsheets used in the financial reporting process;
- effective process-level controls activities including:

*Financial Statement Close and Reporting Process*

- Ineffective design and implementation, and operation of controls over the completeness, existence and accuracy of the financial statement close and reporting process and financial statement disclosures;

- Ineffective design and implementation, and operation of controls over the completeness, existence, accuracy and presentation of the consolidated statements of cash flows;
- Ineffective design and implementation, and operation of controls to ensure intercompany transactions are completely and accurately identified, reconciled, evaluated and eliminated;

*Adoption of New Accounting Standards*

- Ineffective design and implementation and operation of controls over the completeness, existence, accuracy and presentation of account balances and disclosures related to the adoption of the new accounting standards, IFRS 15, *Revenue from Contracts with Customers*, and IFRS 9, *Financial Instruments*;

*Impairment*

- Ineffective design and implementation and operation of controls to assess the existence of impairment indicators and to perform an impairment assessment of the Company's long-lived assets in accordance with IAS 36, *Impairment of Assets* including ineffective design and implementation and operation of controls over the appropriateness of the assumptions and methodology used to measure the fair value of cash-generating units.

These material weaknesses were considered in determining the nature, timing, and extent of audit tests applied in our audit of the 2018 consolidated financial statements, and this report does not affect our report on those consolidated financial statements.

*Basis for Opinion*

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying *Management's Annual Report on Internal Control over Financial Reporting*. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

*Definition and Limitations of Internal Control Over Financial Reporting*

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk

that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG AG Wirtschaftsprüfungsgesellschaft

Munich, Germany  
March 28, 2019

voxeljet AG

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

	Notes	December 31,	
		2018	2017 <sup>(1)</sup> <sup>(2)</sup>
		(€ in thousands)	
<b>Current assets</b>		<b>37,936</b>	<b>37,494</b>
Cash and cash equivalents	3	7,402	7,569
Financial assets	3, 14	12,905	14,044
Trade receivables	3, 8	6,030	5,093
Inventories	9	10,064	9,259
Income tax receivables		13	3
Other assets		1,522	1,526
<b>Non-current assets</b>		<b>31,416</b>	<b>29,508</b>
Financial assets	3, 14	2,234	357
Intangible assets	11	1,420	1,111
Property, plant and equipment	12	27,675	27,949
Investments in joint venture		33	39
Other assets		54	52
<b>Total assets</b>		<b>69,352</b>	<b>67,002</b>
	Notes	December 31,	
		2018	2017 <sup>(1)</sup> <sup>(2)</sup>
		(€ in thousands)	
<b>Current liabilities</b>		<b>6,302</b>	<b>6,576</b>
Deferred income	3	--	271
Trade payables	3	2,945	3,059
Contract liabilities	3	817	--
Financial liabilities	3, 14	850	1,162
Other liabilities and provisions	13	1,690	2,084
<b>Non-current liabilities</b>		<b>16,575</b>	<b>16,537</b>
Deferred income	3	--	18
Deferred tax liabilities		76	66
Financial liabilities	3, 14	16,321	16,413
Other liabilities and provisions	13	178	40
<b>Equity</b>		<b>46,475</b>	<b>43,889</b>
Subscribed capital	25	4,836	3,720
Capital reserves	26	86,803	76,227
Accumulated deficit	3	(46,400)	(37,509)
Accumulated other comprehensive income		1,201	1,380
<b>Equity attributable to the owners of the company</b>		<b>46,440</b>	<b>43,818</b>
<b>Non-controlling interests</b>		<b>35</b>	<b>71</b>
<b>Total equity and liabilities</b>		<b>69,352</b>	<b>67,002</b>

See accompanying notes to these consolidated financial statements.

<sup>(1)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Note 6 to the consolidated financial statements.

<sup>(2)</sup> voxeljet AG has initially applied IFRS 15 and IFRS 9 as of January 1, 2018. Under the transition methods chosen, comparative information has not been restated. For further information, see Note 3 to the consolidated financial statements.



voxeljet AG

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

	Notes	Year Ended December 31,		
		2018	2017 <sup>(1)(2)</sup>	2016 <sup>(2)</sup>
		(€ in thousands, except share and share data)		
Revenues	3, 20	26,009	23,178	22,338
Cost of sales	15	(16,864)	(13,853)	(15,435)
<b>Gross profit</b>		<b>9,145</b>	<b>9,325</b>	<b>6,903</b>
Selling expenses		(7,332)	(6,474)	(5,312)
Administrative expenses		(5,587)	(5,129)	(4,563)
Research and development expenses		(6,334)	(5,528)	(5,683)
Other operating expenses	16	(751)	(1,844)	(3,881)
Other operating income	16	1,297	1,001	1,417
<b>Operating loss</b>		<b>(9,562)</b>	<b>(8,649)</b>	<b>(11,119)</b>
Finance expense	17	(1,143)	(190)	(230)
Finance income	17	1,952	365	38
<b>Financial result</b>	17	<b>809</b>	<b>175</b>	<b>(192)</b>
<b>Loss before income taxes</b>		<b>(8,753)</b>	<b>(8,474)</b>	<b>(11,311)</b>
Income tax expense	18	(11)	(80)	(2)
<b>Net loss</b>		<b>(8,764)</b>	<b>(8,554)</b>	<b>(11,313)</b>
Other comprehensive income (loss) that may be reclassified subsequently to profit or loss		(179)	505	1,111
<b>Total comprehensive loss</b>		<b>(8,943)</b>	<b>(8,049)</b>	<b>(10,202)</b>
<b>Loss attributable to:</b>				
Owner of the Company		(8,728)	(8,538)	(11,287)
Non-controlling interests		(36)	(16)	(26)
		<b>(8,764)</b>	<b>(8,554)</b>	<b>(11,313)</b>
<b>Total comprehensive loss attributable to:</b>				
Owner of the Company		(8,907)	(8,033)	(10,176)
Non-controlling interests		(36)	(16)	(26)
		<b>(8,943)</b>	<b>(8,049)</b>	<b>(10,202)</b>
Weighted average number of ordinary shares outstanding		3,940,636	3,720,000	3,720,000
Loss per share - basic/ diluted (EUR)		(2.21)	(2.30)	(3.04)

See accompanying notes to these consolidated financial statements.

<sup>(1)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Note 6 to the consolidated financial statements.

<sup>(2)</sup> voxeljet AG has initially applied IFRS 15 and IFRS 9 as of January 1, 2018. Under the transition methods chosen, comparative information has not been restated. For further information, see Note 3 to the consolidated financial statements.

voxeljet AG

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

	(€ in thousands)						
	Subscribed capital	Capital reserves	Accumulated deficit	Attributable to the owners of the company Accumulated other comprehensive gain (loss)	Total	Non-controlling interests	Total equity
<b>Balance at January 1, 2016</b>	3,720	75,671	(17,684)	(238)	61,469	--	61,469
Establishment of subsidiary with non-controlling interests	--	--	--	--	--	113	113
Loss for the period	--	--	(11,287)	--	(11,287)	(26)	(11,313)
Net changes in fair value of available for sale financial assets	--	--	--	50	50	--	50
Foreign currency translation	--	--	--	1,061	1,061	--	1,061
Equity-settled share-based payment transaction in relation to the establishment of a subsidiary with non-controlling interest	--	156	--	--	156	--	156
<b>Balance at December 31, 2016 <sup>(2)</sup></b>	<b>3,720</b>	<b>75,827</b>	<b>(28,971)</b>	<b>873</b>	<b>51,449</b>	<b>87</b>	<b>51,536</b>
<b>Balance at January 1, 2017</b>	<b>3,720</b>	<b>75,827</b>	<b>(28,971)</b>	<b>873</b>	<b>51,449</b>	<b>87</b>	<b>51,536</b>
Loss for the period	--	--	(8,538)	--	(8,538)	(16)	(8,554)
Net changes in fair value of available for sale financial assets	--	--	--	37	37	--	37
Foreign currency translation	--	--	--	470	470	--	470
Deferred tax	--	14	--	--	14	--	14
Equity-settled share-based payment	--	386	--	--	386	--	386
<b>Balance at December 31, 2017 <sup>(1)(2)</sup></b>	<b>3,720</b>	<b>76,227</b>	<b>(37,509)</b>	<b>1,380</b>	<b>43,655</b>	<b>71</b>	<b>43,889</b>
<b>Adjustment on initial application of IFRS 15</b>	<b>--</b>	<b>--</b>	<b>(100)</b>	<b>--</b>	<b>(100)</b>	<b>--</b>	<b>(100)</b>
<b>Adjustment on initial application of IFRS 9</b>	<b>--</b>	<b>--</b>	<b>(63)</b>	<b>--</b>	<b>(63)</b>	<b>--</b>	<b>(63)</b>
<b>Adjusted balance at January 1, 2018</b>	<b>3,720</b>	<b>76,227</b>	<b>(37,672)</b>	<b>1,380</b>	<b>43,655</b>	<b>71</b>	<b>43,726</b>
Loss for the period	--	--	(8,728)	--	(8,728)	(36)	(8,764)
Net changes in fair value of available for sale financial assets	--	--	--	(119)	(119)	--	(119)
Foreign currency translation	--	--	--	(60)	(60)	--	(60)
Capital increase	1,116	9,972	--	--	11,088	--	11,088
Deferred tax	--	--	--	--	0	--	0
Equity-settled share-based payment	--	604	--	--	604	--	604
<b>Balance at December 31, 2018</b>	<b>4,836</b>	<b>86,803</b>	<b>(46,400)</b>	<b>1,201</b>	<b>46,440</b>	<b>35</b>	<b>46,475</b>

See accompanying notes to these consolidated financial statements.

<sup>(1)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Note 6 to the consolidated financial statements.

<sup>(2)</sup> voxeljet AG has initially applied IFRS 15 and IFRS 9 as of January 1, 2018. Under the transition methods chosen, comparative information has not been restated. For further information, see Note 3 to the consolidated financial statements.

**voxeljet AG**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**

	Year Ended December 31,		
	2018	2017 <sup>(1)(2)</sup>	2016 <sup>(2)</sup>
	(€ in thousands)		
<b>Cash Flow from operating activities</b>			
<b>Loss for the period</b>	<b>(8,764)</b>	<b>(8,554)</b>	<b>(11,313)</b>
Depreciation and amortization	3,506	3,163	2,542
Foreign currency exchange differences on loans to subsidiaries	(340)	1,056	1,092
Impairment losses on goodwill and intangible assets	--	--	1,130
Equity-settled share-based payment transaction in relation to the establishment of a subsidiary with non-controlling interest	--	--	256
Share-based compensation expense	604	386	--
Impairment losses on trade receivables	227	237	367
Non-cash interest expense on long-term debt	781	17	--
Change in fair value of derivative equity forward	(1,877)	(352)	--
Change in inventory allowance	(417)	(515)	954
Other	68	105	56
<b>Change in working capital</b>	<b>(1,502)</b>	<b>(2,373)</b>	<b>(8,422)</b>
Trade and other receivables, inventories and current assets	(1,556)	(2,697)	(6,784)
Trade payables	(310)	629	(27)
Other liabilities and provisions and deferred income	375	(310)	(1,657)
Income tax payable/receivables	(11)	5	46
<b>Total</b>	<b>(7,714)</b>	<b>(6,830)</b>	<b>(13,338)</b>
<b>Cash Flow from investing activities</b>			
Payments to acquire property, plant and equipment and intangible assets	(3,812)	(3,626)	(3,700)
Proceeds from disposal of financial assets	10,475	4,077	34,979
Payments to acquire financial assets	(8,690)	(5,542)	(15,827)
Other	--	156	14
<b>Total</b>	<b>(2,027)</b>	<b>(4,935)</b>	<b>15,466</b>
<b>Cash Flow from financing activities</b>			
Repayment of bank overdrafts and lines of credit	(58)	(167)	(159)
Repayment of sale and leaseback obligation	(324)	(383)	(535)
Repayment of finance lease obligation	(37)	(51)	(36)
Repayment of long-term debt	(2,764)	(732)	(378)
Proceeds from issuance of long-term debt	1,639	12,612	4,724
Proceeds from issuance of shares	11,088	--	--
<b>Total</b>	<b>9,544</b>	<b>11,279</b>	<b>3,616</b>
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>(197)</b>	<b>(486)</b>	<b>5,744</b>
<b>Cash and cash equivalents at beginning of period</b>	<b>7,569</b>	<b>7,849</b>	<b>2,086</b>
<b>Changes to cash and equivalents due to foreign exchanges rates</b>	<b>30</b>	<b>206</b>	<b>19</b>
<b>Cash and cash equivalents at end of period</b>	<b>7,402</b>	<b>7,569</b>	<b>7,849</b>
<b>Supplemental Cash Flow Information</b>			
Interest paid	231	210	201
Interest received	42	16	39
Income taxes paid	--	--	2
Property, plant and equipment added under finance lease	--	123	57

See accompanying notes to these consolidated financial statements.

<sup>(1)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Note 6 to the consolidated financial statements.

<sup>(2)</sup> voxeljet AG has initially applied IFRS 15 and IFRS 9 as of January 1, 2018. Under the transition methods chosen, comparative information has not been restated. For further information, see Note 3 to the consolidated financial statements.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

### Basis of preparation

#### 1. The reporting entity

*voxeljet* AG (in the following referred to as ‘*voxeljet*’, ‘Group’, or the ‘*Company*’) is a high-tech company headquartered in Friedberg, Germany. The *Company* consists of voxeljet AG, voxeljet America Inc. ( *voxeljet America* ), voxeljet UK Ltd. ( *voxeljet UK* ), voxeljet India Pvt. Ltd ( *voxeljet India* ) and voxeljet China Co., Ltd. ( *voxeljet China* ). voxeljet AG owns 100% of the issued and outstanding shares of *voxeljet America* , *voxeljet UK* and *voxeljet India* , as well as 95.83% of *voxeljet China*. As a manufacturer of three-dimensional (“3D”) printing systems, *voxeljet* specializes in the development, production and distribution of industrial printing machines and the production and sale of customized printed products to industrial customers. The *Company* operates in two business divisions: Systems and Services. The *voxeljet* Systems business division develops, manufactures and sells innovative 3D printers. Today, *voxeljet* has a product range that reaches from smaller entry models to large-format machines, and therefore offers 3D printer systems for a wide range of application areas.

Through its Services business division, the *Company* offers customized printed products such as sand molds and plastic models based on CAD data through its ‘on-demand production’ service centers. In addition, the *Company* offers casting services to its customers. In those cases, the casting process is performed by external suppliers supported by *voxeljet*’s molds and models. Small-batch and prototype manufacturers utilize the *Company*’s machines for the automatic, patternless manufacture of their casting molds and 3D models. The *Company*’s customer base includes automotive manufacturers, aerospace industries, foundries and suppliers as well as companies from the arts and design industries as well as universities and research institutes.

#### 2. Preparation of financial statements

The consolidated financial statements of the Group have been prepared in accordance with International Financial Reporting Standards (IFRS) as set forth by the International Accounting Standards Board (IASB) and interpretations of the IFRS Interpretations Committee (IFRIC).

The consolidated financial statements were authorized for issue by the Management Board on March 28, 2019.

These consolidated financial statements were prepared on the basis of historical cost except for the following items, which are measured on an alternative basis on each reporting date.

Debt securities at fair value through other comprehensive income (2017: Available-for-sale financial assets)	Fair value
Non-derivative financial instruments at fair value through profit or loss	Fair value
Monetary assets and liabilities denominated in foreign currencies	Mandatorily at FVTPL
Derivative financial instruments	Fair value

The consolidated financial statements are presented in thousands of Euros (kEUR) except where otherwise stated. Due to rounding, numbers presented throughout these notes may not add up precisely to the totals provided and percentages may not precisely reflect the absolute figures.

The consolidated financial statements have been prepared on the assumption that the Group will continue as a going concern.

#### *Correction of errors*

Certain comparative amounts in the consolidated statements of financial position, consolidated statements of comprehensive loss, consolidated statements of changes in equity, and consolidated statements of cash flows have been restated to correct for immaterial errors with respect to the elimination of margin on certain intra-group transactions. The impact of this restatement is disclosed in Note 6. Throughout the consolidated financial statements, columns including comparative figures that have been restated, are indicated with ‘<sup>(1)</sup>’.

### 3. Summary of significant accounting policies

The principal accounting policies applied in the preparation of these financial statements are set out below. Except as described below, these policies have been consistently applied to all years presented.

The Group has initially adopted IFRS 15, Revenue from Contracts with Customers, and IFRS 9, Financial Instruments, on January 1, 2018. A number of other new standards are effective from January 1, 2018 but these do not have a material effect on the Company's consolidated financial statements. Changes to significant accounting policies are described below.

Due to the transition methods chosen by the Group in applying these standards, comparative information throughout these financial statements has not been restated to reflect the requirements of the new standards.

#### Consolidation

Subsidiaries are entities controlled by the Group. The Group controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases.

Intercompany balances and transactions are eliminated in preparing the consolidated financial statements.

A joint venture is an arrangement in which the Group has joint control, whereby the Group has rights to the net assets of the arrangement, rather than rights to its assets and obligations for its liabilities. Interests in the joint venture are accounted for using the equity method. They are initially recognized at cost, which includes transaction costs. Subsequent to initial recognition, the consolidated financial statements include the Group's share of the profit or loss and other comprehensive income of equity-accounted investees, until the date on which significant influence or joint control ceases.

#### Revenues from contracts with customers

IFRS 15 establishes a comprehensive framework for determining whether, how much and when revenue is recognized. It replaced IAS 18, *Revenue*, IAS 11, *Construction Contracts*, and related interpretations. The Group has adopted IFRS 15 using the cumulative effect method, with the effect of initially applying this standard recognized at the date of initial application (i.e. January 1, 2018). Accordingly, the information presented for 2017 has not been restated – i.e. it is presented, as previously reported, under IAS 18, IAS 11 and related interpretations. Additionally, the disclosure requirements in IFRS 15 have not generally been applied to comparative information.

The adoption of IFRS 15 resulted in minor impacts related to the revenue recognition regarding the revenue streams from maintenance as well as extended warranty contracts. Those impacts include immaterial timing differences for revenue recognition related to these types of contracts with customers. The new guidance is not expected to have a material impact to net income (loss) on an ongoing basis.

The following table summarizes the impact of transition to IFRS 15 on retained earnings as of January 1, 2018.

Impact at January 1, 2018	Impact on adopting IFRS 15 at January 1, 2018 (€ in thousands)
Retained earnings	(100)
Recognition of revenues from maintenance and extended warranty contracts	(100)

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The following tables summarize the impacts of adopting IFRS 15 on the Company's consolidated statement of financial position as of December 31, 2018 and its consolidated statement of comprehensive loss for the year then ended for each of the line items affected. There was no material impact on the Company's consolidated statements of cash flows for the year ended December 31, 2018.

<b>12/31/2018</b>	<b>As reported</b>	<b>Adjustments</b>	<b>Amounts without adoption of IFRS 15</b>
		<b>(€ in thousands)</b>	
<b>Total assets</b>	<b>69,352</b>	<b>(405)</b>	<b>68,947</b>
<b>Current assets</b>	<b>37,936</b>	<b>(405)</b>	<b>37,531</b>
Trade receivables	6,030	(405)	5,625
<b>Total equity and liabilities</b>	<b>69,352</b>	<b>(405)</b>	<b>68,947</b>
<b>Current liabilities</b>	<b>6,302</b>	<b>(424)</b>	<b>5,878</b>
Deferred income	—	228	228
Contract liabilities	817	(817)	--
Other liabilities and provisions	1,690	165	1,855
<b>Equity</b>	<b>46,475</b>	<b>19</b>	<b>46,494</b>
Accumulated deficit	(46,400)	19	(46,381)

A contract liability is recognized when the Company has received consideration (i.e. advance payment) from customers before satisfying a performance obligation, or has an unconditional right to payment under a non-cancellable contract before it transfers the related goods or services to the customer under maintenance and extended warranty contracts. Upon the adoption of IFRS 15, the Company reclassified the deferred income balance, which represents advance payment from customers, to contract liabilities.

<b>12/31/2018</b>	<b>As reported</b>	<b>Adjustments</b>	<b>Amounts without adoption of IFRS 15</b>
		<b>(€ in thousands)</b>	
Revenue	26,009	(81)	25,928
Impairment loss on trade receivables under IFRS 15	(10)	10	--
Operating loss	(9,562)	(71)	(9,633)
Loss before income taxes	(8,753)	(71)	(8,824)
Net loss	(8,764)	(71)	(8,835)
Total comprehensive loss	(8,943)	(71)	(9,014)

The following table provides information about receivables and contract liabilities from contracts with customers.

	<b>Note</b>	<b>December 31, 2018</b>	<b>January 1, 2018</b>
		<b>(€ in thousands)</b>	
Receivables, which are included in 'trade and other receivables'		6,030	5,270
Contract liabilities		817	507

Upon adoption of IFRS 15, the Company changed the accounting policy on the revenue recognition relating to maintenance contracts are set out below.

Under IFRS 15, the Company recognizes revenue on the maintenance contracts based on the input method, such as the number of service visits or the provision of certain goods, in particular printheads, to measure the progress that depicts the transfer of control of the goods or services to the customer toward complete satisfaction of a performance obligation over time. Therefore the expected number of service visits and goods to be provided under a contract have been estimated by the Company's service department based on historical experience. Under IAS 18, the Company recognized revenue on a straight-line basis over the contract term.

IFRS 15 did not have a significant impact on the Group's accounting policies with respect to other revenue streams.

Revenue on the sale of new or refurbished 3D printers is recognized on at the point in time after completed installation of 3D printers at the customer site and evidenced through final acceptance by the customer. Customers obtain control of the 3D printers when the customers have accepted the assets.

From time to time, refurbished 3D printers which have been operating at the Company's service centers for an average of 1.5 to 2.5 years, are routinely sold to customers. Prior to sale, such printers are fully refurbished, which includes the installation of a new printhead.

The Group provides customers with statutory warranty on all 3D printers for one year. The warranty presents assurance-type warranty and is not treated as a separate performance obligation. After the initial one-year warranty period, the Group offers its customers optional maintenance contracts, which are considered as individual performance obligations.

The Company, from time to time, offers to customers, to operate their purchased 3D printer and perform 3D printing on custom-ordered printed products for a temporary period before the customers' facility is configured according to required technical specifications. The Company recognizes revenue for the use of space on Company premises over time under the term of the contracts. The Company recognizes revenue from the sale of customized printed products from the customer's purchased 3D printer, upon transfer of the significant risks and rewards of ownership to the customers, generally upon shipment.

Revenue on the sale of customized printed products at the point in time when the significant risks and rewards of ownership of the assets is transferred to the customers, generally upon shipment.

Shipping, packaging and handling costs billed to customers for the sales of customized printed products and consumables are considered as separate performance obligation where the Company acts as a principal for the transportation service. The Company recognized the gross revenue at the point in time as the service is provided, i.e. upon shipment. Costs incurred by the Company associated with shipping, packaging and handling are included in selling expenses in the consolidated statements of comprehensive loss.

Invoices from revenue streams besides the sale of new or refurbished 3D printers are usually payable within 30 to 60 days. The Company also recognizes that longer payment periods are customary in some countries where it transacts business. To reduce credit risk in connection with machine sales, the Company may, depending upon the circumstances, require advance payments prior to shipment. On the sale of new or refurbished 3D printers, the Company generally require advance payments in full prior to shipment and require international customers to furnish letters of credit. These advance payments are recognized as contract liabilities. Maintenance contracts are generally billed to customers in advance on a monthly, quarterly, or annual basis, and are initially recorded as a contract liability as the Company has an enforceable right to payment after the contract has been signed.

The amount of revenue recognized for the fiscal year ended December, 31 2018 from performance obligations satisfied (or partially satisfied) in previous periods is € 0.1 million. This is mainly due to changes in the revenue recognition method on maintenance contracts.

The contract liabilities primarily relate to (1) the advance consideration received from customers before satisfying a performance obligation, or an unconditional right to payment under a non-cancellable contract before it transfers the related goods or services to the customer under maintenance contracts, for which revenue is recognized over time; and (2) the advance consideration received from customers for the sale of new or refurbished 3D printers, for which revenue is recognized when the customer has accepted the assets. The total amount of unfulfilled performance obligations for 3D printer sales and long term volume contracts is € 4.9 million. The Company expects to realize approximately 56% of such amount in 2019 and the remainder in 2020. The contract liabilities at the beginning of the current year have been fully recognized as revenue for the fiscal year ended December 31, 2018.

In the following table, revenue from contracts with customers is disaggregated by primary geographical market, and timing of revenue recognition. The table also includes a reconciliation of the disaggregated revenue with the Group's reportable segments (see Note 20).

	Year ended December 31,			
	SYSTEMS		SERVICES	
	2018	2017	2018	2017
<b>Primary geographical markets</b>				
EMEA	5,592	6,717	9,081	8,115
Asia Pacific	4,704	1,760	746	766
Americas	1,952	3,057	3,934	2,763
	<u>12,248</u>	<u>11,534</u>	<u>13,761</u>	<u>11,644</u>
<b>Timing of revenue recognition</b>				
Products transferred at a point in time	11,188	10,627	13,761	11,644
Products and services transferred over time	1,060	907	--	--
Revenue from contracts with customers	<u>12,248</u>	<u>11,534</u>	<u>13,761</u>	<u>11,644</u>

In 2018, *voxeljet* leased two 3D printers (2017: one 3D printer and 2016: five 3D printers) to customers under operating leases. Rental income is recognized on a straight-line basis over the term of the lease as revenue and is reported within the Systems segment.

### Financial instruments

The adoption of IFRS 9 resulted in a minor increase in impairment losses recognized on trade receivables.

IFRS 9 sets out requirements for recognizing and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items. This standard replaces IAS 39, Financial Instruments.

The Company has applied the exemption not to restate comparative information for prior periods with respect to classification and measurement (including impairment) requirements. Differences in the carrying amounts of financial assets and financial liabilities resulting from the adoption of IFRS 9 are recognized in retained earnings and reserves as of January 1, 2018. Accordingly, the information presented for 2017 does not reflect the requirements of IFRS 9 but rather those of IAS 39.

The details of new accounting policies under IFRS 9 and the nature and effect of the changes to previous accounting policies are set out below.

The following table summarizes the impact, net of tax, of transition to IFRS 9 on the opening balance of retained earnings.

Impact at January 1, 2018	Impact on adopting IFRS 9 on opening balance (€ in thousands)
<b>Retained earnings</b>	<b>63</b>
Recognition of additional expected credit losses under IFRS 9	63

### Classification and measurement of financial assets and financial liabilities

IFRS 9 largely retains the existing requirements in IAS 39 for the classification and measurement of financial liabilities. However, it eliminates the previous IAS 39 categories for financial assets of held to maturity, loans and receivables and available for sale.

Under IFRS 9, on initial recognition, a financial asset is classified as measured at: amortized cost, fair value through other comprehensive income (FVOCI), or fair value through profit or loss (FVTPL). The classification of



financial assets under IFRS 9 is generally based on the business model in which a financial asset is managed and its contractual cash flow characteristics.

A financial asset is measured at amortized cost if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is to hold assets to collect contractual cash flows; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding

On initial recognition of an equity investment that is not held for trading, the Company may irrevocably elect to record subsequent changes in the investment's fair value in OCI. This election is made on an investment-by-investment basis.

All financial assets not classified as measured at amortized cost or FVOCI as described above are measured at FVTPL. This includes all derivative financial assets. On initial recognition, the Company may irrevocably designate a financial asset that otherwise meets the requirements to be measured at amortized cost or at FVOCI as at FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise.

A financial asset (unless it is a trade receivable without a significant financing component that is initially measured at the transaction price) is initially measured at fair value plus, for an item not at FVTPL, transaction costs that are directly attributable to its acquisition.

Under IFRS 9, our investments in bond fund are classified as fair value through other comprehensive income (FVOCI). As permitted by IFRS 9, the Company has designated these investments at the date of initial application as measured at FVOCI.

Under IAS 39 as well as upon adoption of IFRS 9, our derivative financial instruments have been designated as at FVTPL.

#### *Impairment of financial assets*

IFRS 9 replaces the 'incurred loss' model in IAS 39 with an 'expected credit loss' (ECL) model. The new impairment model applies to financial assets measured at amortized cost, FVOCI and contract assets. Under IFRS 9, credit losses are recognized earlier than under IAS 39.

The Company's financial assets at amortized cost consist of trade receivables and cash and cash equivalents. For cash and cash equivalents the adoption of IFRS 9 did not have any impact regarding impairment.

Under IFRS 9, loss allowances are measured on either of the following bases:

- 12-months ECLs: these are ECLs that result from possible default events within the 12 months after the reporting date; or
- lifetime ECLs: these are ECLs that result from all possible default events over the expected life of a financial instrument.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECLs, the Company considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis, based on the Group's historical experience and informed credit assessment and including forward-looking information.

The Company considers an investment to have low credit risk when its credit risk rating is equivalent to the globally understood definition of 'investment grade'. The Company limits its exposure to credit risk by investing only in bond funds which are fully guaranteed by the financial institutions and therefore represents short term credit rating of A-3 based on Standard & Poor's or P-2 based on Moody's.

*Trade receivables*

The Company considers trade receivables which are in default individually prior to the application of the ECL model to the remaining population. The Company measures loss allowances for trade receivables at an amount equal to lifetime ECLs. ECLs are a probability-weighted estimate of credit losses. The Company calculates the ECL based on the risk scoring its customers' according to an external rating agency. Following the risk score of each customer, the trade receivables are clustered into different grades. For each grade, the ECL is calculated after deducting from trade receivables a loss allowance based on actual credit loss experience. In addition the Company uses qualitative assessment of the trade receivables, where default has occurred.

*Debt securities*

The Group considers debt securities to have low credit risk when its credit risk rating is equivalent to the globally understood definition of 'investment grade'. The Group limits its exposure to credit risk by investing only in bond funds which are fully guaranteed by the financial institutions and therefore represents short term credit rating of A-3 based on Standard & Poor's or P-2 based on Moody's.

*Presentation of impairment*

Loss allowances for financial assets measured at amortized cost are deducted from the gross carrying amount of the assets and presented within other operating expenses.

Impairment losses on financial assets classified as FVTPL and FVOCI are presented within the finance expense and other comprehensive income, respectively.

The following table presents the original measurement categories under IAS 39 and the new measurement categories under IFRS 9 for each class of the Company's financial assets and financial liabilities as of January 1, 2018.

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The effect of adopting IFRS 9 on the carrying amounts of financial assets at January 1, 2018 relates solely to the new impairment requirements.

01/01/2018	Original classification under IAS 39	New classification under IFRS 9	Original carrying amount under IAS 39	New carrying amount under IFRS 9
			(€ in thousands)	
<b>Financial assets</b>			<b>27,063</b>	<b>27,000</b>
<u>Non-current assets</u>				
Equity securities	Available-for-sale financial assets	FVOCI	5	5
Derivative financial instruments	A financial asset or financial liability at fair value through profit or loss	Mandatorily at FVTPL	352	352
<u>Current assets</u>				
Bond funds	Available-for-sale financial assets	FVOCI	14,044	14,044
Cash and cash equivalents	Loans and receivables	Amortized cost	7,569	7,569
Trade receivables	Loans and receivables	Amortized cost	5,093	5,030
<b>Financial liabilities</b>			<b>20,416</b>	<b>20,416</b>
<u>Non-current liabilities</u>				
Long-term debt	Financial liabilities measured at amortized cost	Amortized cost	16,242	16,242
Finance lease obligation	Financial liabilities measured at amortized cost	Amortized cost	171	171
<u>Current liabilities</u>				
Bank overdraft	Financial liabilities measured at amortized cost	Amortized cost	58	58
Long-term debt	Financial liabilities measured at amortized cost	Amortized cost	796	796
Finance lease obligation	Financial liabilities measured at amortized cost	Amortized cost	308	308
Trade payables	Financial liabilities measured at amortized cost	Amortized cost	2,841	2,841

The following table reconciles the carrying amounts of financial assets under IAS 39 to the carrying amounts under IFRS 9 on transition to IFRS 9 on 1 January 2018.

	IAS 39 carrying amount at 31, December 2017	Reclassification	Remeasurement	IFRS 9 carrying amount at 1, January 2018
(€ in thousands)				
<b>Financial assets</b>				
<b>Amortized cost</b>				
Trade and other receivables:				
Brought forward: <i>Loans and receivables</i>	5,093	--	--	--
Remeasurement	--	--	63	--
Carried forward: <i>Amortized cost</i>	--	--	--	5,030
<b>Total amortized cost</b>	<b>5,093</b>	<b>--</b>	<b>63</b>	<b>5,030</b>

*Impact of the new impairment model*

For assets in the scope of the IFRS 9 impairment model, impairment losses are generally expected to increase and become more volatile. The Company has determined that the application of IFRS 9's impairment requirements at January 1, 2018 results in an additional impairment allowance as follows.

	(€ in thousands)
<b>Loss allowance at December 31, 2017 under IAS 39</b>	<b>482</b>
Additional impairment recognized at January 1, 2018 on:	
Trade and other receivables as at December 31, 2017	62
Additional trade receivables recognized on adoption of IFRS 15	1
<b>Loss allowance at January 1, 2018 under IFRS 9</b>	<b>545</b>

The following tables provide information about the exposure to credit risk and ECLs for trade receivables as of January 1, 2018 and December 31, 2018. This was calculated after a specific assessment of the trade receivables and after recording a specific debt allowance.

<b>January 1, 2018</b>					
Grades	Equivalent to external credit rating (Standard & Poor's)	Weighted-average loss rate	Gross carrying amount	Impairment loss allowance	Net carrying amount
(€ in thousands)					
Grades 1-4: Low risk	BBB+ to AAA	0.2%	3,274	5	3,269
Grades 5-7: Fair risk	B+ to BBB	1.3%	1,674	22	1,652
Grades 8-9: Substandard	CCC- to B	7.0%	363	25	338
Grade 10: Doubtful	C to CC	25.0%	14	3	11
Grade 11: Loss	D	100.0%	8	8	--
			<b>5,333</b>	<b>63</b>	<b>5,270</b>

<b>December 31, 2018</b>					
Grades	Equivalent to external credit rating (Standard & Poor's)	Weighted-average loss rate	Gross carrying amount	Impairment loss allowance	Net carrying amount
(€ in thousands)					
Grades 1-4: Low risk	BBB+ to AAA	0.2%	3,274	5	3,269
Grades 5-7: Fair risk	B+ to BBB	1.3%	2,171	29	2,142
Grades 8-9: Substandard	CCC- to B	7.0%	648	45	603
Grade 10: Doubtful	C to CC	25.0%	22	6	16
Grade 11: Loss	D	100.0%	72	72	--
			<b>6,187</b>	<b>157</b>	<b>6,030</b>

*Cash and cash equivalents*

Cash and cash equivalents are short-term bank deposits and are not subject to a significant risk of change in value.

*Research and development expenses*

All research and development costs are charged to expense as incurred.

**Government grants**

Government grants awarded for project funding are recorded within other operating income in the consolidated statement of comprehensive loss if the related research and development costs have been incurred and provided that the conditions for the funding have been met. Until then, amounts received under government grants are recorded as deferred income in the statements of financial position.

## Leases

Operating leases consist of various lease agreements for the rental of manufacturing facilities, office and warehouse space, vehicles, and office and IT equipment, expiring in various years through 2020. Rent expense under operating leases is charged to profit or loss on a straight-line basis over the term of the lease.

## Long Term Cash Incentive Plan

*voxeljet* has a Long-Term Cash Incentive Plan ("LTCIP"), a cash-settled share-based payment arrangement, that provides for cash awards to non-executive employees. Compensation cost is determined based on the grant-date fair value of the awards and recognized, net of estimated forfeitures due to termination of employment, on a straight-line basis over the requisite service period of the award and depending on the evaluation of certain performance and market conditions. The requisite service period is generally the vesting period stated in the award. The liability for these awards is measured at fair value at each reporting date until settlement and is classified within "other liabilities and provisions in the consolidated statement of financial position. As of December 31, 2017 the targets were not achieved and the LTCIP ceased.

## Employee stock option plan

In April 2017, the Supervisory Board adopted and approved Option Plan 2017. The plan authorizes to grant shares of equity-settled stock options to employees and members of the management board. The *Company's* stock-based compensation expense is estimated at the grant date based on the fair value of the award and is recognized as expense ratably over the requisite service period of the award. The Company calculates the fair value of each option award on the date of grant under the Monte Carlo simulation model. The determination of the grant date fair value of the awards using a simulation model is affected by our stock price as well as assumptions regarding a number of complex and subjective variables. These variables include the expected stock price volatility over the expected life of the awards, risk-free interest rates, and expected dividends. The risk free interest rate is equal to the U.S. Treasury constant maturity rates for the period equal to the expected life. The Company does not currently pay cash dividends on common stock and does not anticipate doing so in the foreseeable future. Accordingly, the expected dividend yield is zero.

## Foreign currencies

The financial statements are presented in Euros, the functional currency of *voxeljet AG*.

Monetary transactions denominated in foreign currencies are translated to Euros at the exchange rates prevailing on the transaction date.

The financial statements of foreign subsidiaries are translated using the concept of the functional currency in accordance with IAS 21. The assets and liabilities of foreign subsidiaries are translated at the spot rate at the end of the period, while their income statement items are translated at average exchange rates for the respective periods. All resulting exchange differences are recognized in other comprehensive income. Gains and losses on foreign currency transactions are shown within other operating income and other operating expenses, respectively, in the consolidated statement of comprehensive loss.

The loans provided to *voxeljet AG's* subsidiaries are not considered as net investments in foreign operations. Therefore, gains or losses from foreign exchange differences thereon are recognized in the statement of other comprehensive loss as "other operating income or expenses".

The exchange rates that are most relevant for *voxeljet's* consolidated financial statements are as follows:

Average exchange rates to Euro

December 31,	Average Rate			
	USD	GBP	INR	CNY
2018	1.1810	0.8847	80.7332	7.8081
2017	1.1297	0.8767	73.5324	7.6290
2016	1.1069	0.8195	74.3717	7.3522

Year end exchange rates to Euro

December 31,	Year End Rate			
	USD	GBP	INR	CNY
2018	1.1450	0.8945	79.7298	7.8751
2017	1.1993	0.8872	76.6055	7.8044

### Income Tax

Income tax expense (benefit) consists of current and deferred tax expense and benefit in accordance with IAS 12.

Current income tax expense (benefit) is based on taxable profit (loss) for the year. Taxable profit (loss) differs from profit (loss) as reported in the statements of comprehensive income (loss) because it excludes items of income or expense that are taxable or deductible in other years and further excludes items that are never taxable or deductible. Current income tax expense (benefit) is calculated using tax rates that have been enacted or substantively enacted by the end of the respective reporting period.

Deferred income tax expense (benefit) is recognized on temporary differences between the carrying amounts of assets and liabilities in the statement of financial position and the corresponding tax basis used in the computation of taxable profit (loss).

Deferred tax liabilities are generally recognized for all taxable temporary differences and deferred tax assets, including for carry forward losses to the extent that it is probable that taxable profits will be available against which deductible temporary differences can be utilized. The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer more probable than not that sufficient taxable profits will be available to allow all or a part of the assets to be recovered.

Deferred tax expense (benefit) is calculated at the tax rates that are expected to apply in the periods when the liability is settled or the asset is realized, based on tax rates (and tax regulations) that have been enacted or substantively enacted by the end of the reporting period. The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the *Company* expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities. Deferred tax expense (benefit) is charged or credited to profit or loss, except when it relates to items charged or credited directly to equity, in which case the deferred taxation is also recorded to equity.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to set off tax assets against tax liabilities and when they relate to income taxes levied by the same taxation authority and the *Company* intends to settle its current tax assets and liabilities on a net basis.

### Intangible Assets

Intangible assets, including software, licenses and customer relationships, that are acquired by the *Company* and have a finite useful life are measured at cost less accumulated amortization and any impairment losses. Amortization for intangible assets with finite useful lives is recognized on a straight-line basis over their useful lives.

The amortization of licenses is allocated to the cost of inventory and is included in cost of sales as 3D printers are sold; the amortization of software is mainly included in selling and administrative expenses.

The estimated useful economic lives of acquired intangible assets are presented in the following table:

#### USEFUL LIFE OF INTANGIBLE ASSETS

Software	3-5 years
Licenses	6-8 years

An intangible asset is derecognized upon disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on derecognition of the asset (calculated as the difference between the net disposal proceeds and the carrying amount of the item) is included in profit or loss in the period in which the item is derecognized.

#### Property, Plant and Equipment

Property, plant and equipment is carried at acquisition or manufacturing cost (for internally manufactured printers used in the Services segment) and depreciated on a straight-line basis over the estimated useful lives of the related assets, taking into account estimated residual values. Except the sale of used printers, realized gains and losses are recognized upon disposal or retirement of the related assets and are reflected within other operating income or other operating expenses in the consolidated statement of comprehensive loss. Subsequent expenditures are capitalized only if it is probable that *voxeljet* will receive additional economic benefits from the particular asset associated with these expenditures, and the costs can be determined reliably. Repair and maintenance expenditures are expensed as incurred. Leased assets are depreciated over the shorter of the lease term and their useful lives unless it is reasonably certain that the *Company* will obtain ownership by the end of the lease term. In those cases the assets are depreciated over their useful lives. Land is not depreciated. Additions to property, plant and equipment relating to self-constructed 3D printers are considered non-cash transactions.

The estimated useful economic lives of items of property, plant and equipment are as follows:

#### USEFUL LIFE OF PROPERTY, PLANT AND EQUIPMENT

Leasehold improvements	6-9 years
Buildings	33 years
Plant and machinery	7-8 years
Printers leased to customers under operating lease	7-8 years
Other facilities, machinery and factory equipment	2-20 years
Office equipment	3-12 years

Useful lives, depreciation methods and residual values are reviewed at least annually and, in case they change significantly, depreciation charges for current and future periods are adjusted accordingly.

#### Inventories

##### *Raw materials*

Raw materials are measured at the lower of acquisition cost, as determined on the weighted average costs method, and net realizable value. Obsolete inventories are written off directly into cost of sales.

##### *Work in progress and finished goods*

Work in progress and finished goods are measured at the lower of manufacturing cost and net realizable value. Manufacturing costs comprise all costs that are directly attributable to the manufacturing process, such as direct material and labor, and production related overheads (based on normal operating capacity and normal consumption of material, labor and other production costs), including depreciation charges. Net realizable value is defined as the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs of the sale. For purposes of determining net realizable value, selling expenses include all costs expected to be incurred to make the sale, primarily shipping, packaging and handling as well as commissions.

We also use our own printers in our service centers. Unfinished printers are generally available to be sold if a customer requests a product with a specification which can be met by one of the products in progress. Accordingly, we classify printers as inventory until we remove a finished printer from our manufacturing warehouse to use it in a service center. The reclassification as property, plant and equipment, as a non-cash transaction, occurs at cost and depreciation starts at inception of service.

We evaluate the adequacy of our inventory reserves on a periodic basis in order to determine the need for an inventory reserve.

#### Impairment of non-financial assets

The *Company* assesses at the end of each reporting period whether there is an indication that a non-financial asset may be impaired. Such assets are tested for impairment if there are indicators that the carrying amounts may not be recoverable. An impairment loss is recognized in the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is defined as the higher of an asset's fair value less cost to sell and its value in use. As individual assets do not generate largely independent cash flows, impairment testing is performed at the cash generating unit level. An individual fixed asset within a CGU cannot be written-down below fair value less cost incurred to sell the individual asset.

#### Earnings (loss) per share

Basic earnings per share amounts are calculated by dividing profit (loss) by the weighted average number of ordinary shares outstanding. There are no dilutive instruments issued and outstanding.

	2018	2017
	(in thousands of shares)	
<b>Issued ordinary shares at 1 January</b>	<b>3,720</b>	<b>3,720</b>
Effect of shares issued on October 17, 2018	192	--
Effect of shares issued on November 8, 2018	29	--
<b>Weighted-average number of ordinary shares at 31 December</b>	<b>3,941</b>	<b>3,720</b>

#### 4. New standards and interpretations not yet adopted

The IASB issued a number of new IFRS standards or amendments to existing standards which are required to be adopted in annual periods beginning after December 31, 2018.

Standard	Effective date	Descriptions
IFRS 9	01/2019	Amendments Prepayment Features with Negative Compensation
IFRS 16	01/2019	Leases
IAS 19	01/2019	Amendments Plan Amendment, Curtailment or Settlement
IAS 28	01/2019	Amendments Long-term Interests in Associates and Joint Ventures
IFRIC 23	01/2019	Uncertainty over Income Tax Treatments
Improvements to IFRS (2015-2017)	01/2019	IFRS 3, IFRS 11, IAS 12, IAS 23
Others	01/2020	Amendments References to the Conceptual Framework in IFRS Standards 3
IFRS 3	01/2020	Amendment Definition of a business
IAS 1, IAS 8	01/2020	Amendment, Amendment Definition of material
IFRS 17	01/2021	Insurance Contracts
IFRS 10, IAS 28	indefinite	Amendment Sale or Contribution of Assets between Investor and its Associate or Joint Venture

Of those standards that are not yet effective, IFRS 16 is expected to have a material impact on the *Company's* financial statements in the period of initial application.

The *Company* is required to adopt IFRS 16 Leases from January 1, 2019. The *Company* has assessed the estimated impact that initial application of IFRS 16 will have on its consolidated financial statements, as described below.



IFRS 16 introduces a single, on-balance sheet lease accounting model for lessees. A lessee recognizes a right-of-use asset representing its right to use the underlying asset and a lease liability representing its obligation to make lease payments. There are recognition exemptions for short-term leases (term less than 12 months) and leases of low-value items (value less than kUSD 5). Lessor accounting remains similar to the current standard – i.e. lessors continue to classify leases as finance or operating leases.

IFRS 16 replaces existing leases guidance, including IAS 17 Leases, IFRIC 4 Determining whether an Arrangement contains a Lease, SIC-15 Operating Leases – Incentives and SIC-27 Evaluating the Substance of Transactions Involving the Legal Form of a Lease.

*Leases under which the voxeljet Group is a lessee*

The Group will recognize new assets and liabilities for its operating leases of factory facilities, vehicles and certain equipment. The nature of expenses related to these leases will now change because the Group will recognize a depreciation charge for right-of-use assets and interest expense on lease liabilities.

Previously, the Group recognized operating lease expense on a straight-line basis over the term of the lease, and recognized assets and liabilities only to the extent that there was a timing difference between actual lease payments and the expense recognized.

We do not expect significant impacts for the Company's finance leases.

*Leases under which the voxeljet Group is a lessor*

No significant impact is expected for the operating leases in which the Group is a lessor.

*Transition*

The Group will apply IFRS 16 initially on January 1, 2019, using the modified retrospective approach. Therefore, the cumulative effect of adopting IFRS 16 will be recognized as an adjustment to the opening balance of retained earnings at January 1, 2019, with no restatement of comparative information.

The Group plans to apply the practical expedient to grandfather the definition of a lease on transition. This means that it will apply IFRS 16 to all contracts entered into before 1 January 1, 2019 and identified as leases in accordance with IAS 17 and IFRIC 4.

Based on an analysis conducted as part of the group-wide project on initial application, the Company expects that on January 1, 2019 right-of-use assets of approximately € 3.8 million and additional lease liabilities of approximately € 3.8 million will be presented on the consolidated statement of financial position.

**5. Critical accounting judgment and key sources of estimation and uncertainty**

In the process of applying the *Company's* accounting policies, Management is required to make judgments, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. These estimates and associated assumptions are based on the knowledge available as of the preparation date of the financial statements and historical experiences as well as other factors that are considered to be relevant. The estimates and underlying assumptions are reviewed on an ongoing basis.

Developments outside management's control may cause actual amounts to differ from the original estimates. In that case, the underlying assumptions and, if necessary, the carrying amounts of the pertinent assets and liabilities are adjusted accordingly. Revisions to accounting estimates are recognized in the period in which the estimate is revised, if the revision affects only that period, or in the period of the revision and future periods, if the revision affects both current and future periods.

The assumptions and estimates refer primarily to the recognition of revenue, valuation of bad debt allowance, valuation of inventory, and the valuation of derivative financial instruments (relating to the Performance Participation Interest on the loan with the European Investment Bank).

The key assumptions concerning the future and other key sources of estimation uncertainty at the end of the reporting period, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below.

### **Revenue recognition**

Revenue is measured based on the consideration specified in a contract with a customer. The Group recognizes revenue when it transfers control over a good or service to a customer.

Revenue on the sale of new or refurbished 3D printers is recognized at the point in time after completed installation of 3D printers at the customer site and evidenced through final acceptance by the customer. Customers obtain control of the 3D printers when the customers have accepted the assets.

The Company recognizes revenue on the maintenance contracts for 3D printers by applying the input method to measure the progress that depicts the transfer of control of the goods or services to the customer toward complete satisfaction of a performance obligation over time. The determination of the expected number of service visits and goods to be provided under a contract require significant judgment have been estimated by the Company's service department based on historical experience.

### **Expected credit losses on trade receivables**

Loss allowances are recognized for estimated losses resulting from customers' inability to meet payment obligations. Upon the adoption of IFRS 9, the Group applies a simplified approach to recognizing a loss allowance on trade receivables based on measurement of lifetime expected credit losses arising from trade receivables. Estimation and judgment are required in determining the value of loss allowances at each reporting date. The Company evaluates customer accounts with past-due outstanding balances or specific accounts for which it has information that the customer may be unable to meet its financial obligations. Based upon qualitative assessment of these accounts and Management's analysis and judgment, the Company estimates the future cash flows expected to be recovered from these receivables. The amount of the impairment on doubtful receivables is measured individually and recorded as a specific allowance against that customer's receivable balance so as to equal the amount expected to be recovered.

ECLs are a probability-weighted estimate of credit losses. The Company calculates the ECL based on the risk scoring its customers' according to an external rating agency. Following the risk score of each customer, the trade receivables are clustered into different grades. For each grade, the ECL is calculated after deducting from trade receivables a loss allowance based on actual credit loss experience.

### **6. Correction of errors**

During the preparation of the consolidated interim financial statements for the three-month and nine-month periods ended September 30, 2018, the Company became aware that the margin within certain intra-group transactions has not been properly eliminated in the consolidation process, resulting in misstatement of cost of sales in its consolidated financial statements since the first quarter in fiscal year 2017. These errors have been corrected by restating each of the affected financial statement line items for prior periods. The Company has evaluated the effect of these errors, both qualitatively and quantitatively, and concluded that the corrections did not have a material impact on, nor require amendment of, any previously filed financial statements. The following tables summarize the impacts on the Company's consolidated financial statements.

**Consolidated statement of financial position**

December 31, 2017

	<b>Impact of correction of error</b>		
	<b>As previously reported</b>	<b>Adjustments</b>	<b>As corrected</b>
	(€ in thousands)		
<b>Current assets</b>	<b>37,774</b>	<b>(280)</b>	<b>37,494</b>
Inventories	9,539	(280)	9,259
<b>Non-current assets</b>	<b>29,257</b>	<b>251</b>	<b>29,508</b>
Property, plant and equipment	27,698	251	27,949
<b>Total assets</b>	<b>67,031</b>	<b>(29)</b>	<b>67,002</b>
<b>Equity</b>	<b>43,918</b>	<b>(29)</b>	<b>43,889</b>
Accumulated deficit	(37,480)	(29)	(37,509)
<b>Total equity and liabilities</b>	<b>67,031</b>	<b>(29)</b>	<b>67,002</b>

**Consolidated statement of comprehensive loss**

	<b>Impact of correction of error three months ended December 31, 2017</b>			<b>Impact of correction of error year ended December 31, 2017</b>		
	<b>As previously reported</b>	<b>Adjustments</b>	<b>As corrected</b>	<b>As previously reported</b>	<b>Adjustments</b>	<b>As corrected</b>
	(€ in thousands except share and share data)			(€ in thousands except share and share data)		
Cost of sales	(3,662)	158	(3,504)	(13,824)	(29)	(13,853)
<b>Gross profit</b>	<b>2,446</b>	<b>158</b>	<b>2,604</b>	<b>9,354</b>	<b>(29)</b>	<b>9,325</b>
<b>Operating loss</b>	<b>(2,633)</b>	<b>158</b>	<b>(2,475)</b>	<b>(8,620)</b>	<b>(29)</b>	<b>(8,649)</b>
Net loss	(2,460)	158	(2,302)	(8,525)	(29)	(8,554)
<b>Total comprehensive loss</b>	<b>(2,352)</b>	<b>158</b>	<b>(2,194)</b>	<b>(8,020)</b>	<b>(29)</b>	<b>(8,049)</b>
<b>Loss attributable to owners of the company</b>	<b>(2,458)</b>	<b>158</b>	<b>(2,300)</b>	<b>(8,509)</b>	<b>(29)</b>	<b>(8,538)</b>
<b>Total comprehensive loss attributable to owners of the company</b>	<b>(2,350)</b>	<b>158</b>	<b>(2,192)</b>	<b>(8,004)</b>	<b>(29)</b>	<b>(8,033)</b>
Loss per share - basic/ diluted (EUR)	(0.66)	0.04	(0.62)	(2.29)	(0.01)	(2.30)

**Segment reporting**

	<b>Impact of correction of error three months ended December 31, 2017</b>					
	<b>As previously reported</b>		<b>Adjustments</b>		<b>As corrected</b>	
	<b>SYSTEMS</b>	<b>SERVICES</b>	<b>SYSTEMS</b>	<b>SERVICES</b>	<b>SYSTEMS</b>	<b>SERVICES</b>
	(€ in thousands)					
Revenues	3,146	2,962	—	—	3,146	2,962
Gross profit	1,059	1,387	270	(112)	1,329	1,275
Gross profit in %	33.7 %	46.8 %			42.2 %	43.0 %

<b>Impact of correction of error year ended December 31, 2017</b>						
	<b>As previously reported</b>		<b>Adjustments</b>		<b>As corrected</b>	
	<b>SYSTEMS</b>	<b>SERVICES</b>	<b>(€ in thousands)</b>		<b>SYSTEMS</b>	<b>SERVICES</b>
Revenues	11,534	11,644	—	—	11,534	11,644
Gross profit	3,921	5,433	337	(366)	4,258	5,067
Gross profit in %	34.0 %	46.7 %			36.9 %	43.5 %

There is no impact on the Company's operating, investing or financing cash flows for the year-ended December 31, 2017.

## 7. Share based payment arrangements

On April 7, 2017, voxeljet AG established a share option plan that entitles key management personnel and senior employees of voxeljet AG and its subsidiaries to purchase shares of the parent company.

Total options available under the share option plan are 372,000. 279,000 options (75%, Tranche 1) were granted on April 7, 2017. 93,000 options (25%, Tranche 2) were granted on April 12, 2018.

The vesting conditions include a service condition (the options vest after a period of four years of continued service from the respective grant date) and a market condition (the options may only be exercised if the share price exceeds the exercise price over a period of 90 consecutive days by at least 20% in the period between the grant date and the respective exercise time frame) of which both conditions must be met.

The fair value of the employee share option plan has been measured for Tranches 1 and 2 using a Monte Carlo simulation. The market condition has been incorporated into the fair value at grant date.

The inputs used in the measurement of the fair value at grant date are as follows:

<b>Parameter</b>	<b>Tranche 1</b>	<b>Tranche 2</b>
Share price at grant date	USD 13.80	USD 16.15
Exercise price	USD 13.90	USD 16.15
Expected volatility	55.00%	58.40%
Expected dividends	--	--
Risk-free interest rate	2.49%	2.85%
Fair value at grant date	USD 8.00	USD 9.74

	<b>December 31,</b>			
	<b>2018</b>		<b>2017</b>	
	<b>Number of options</b>	<b>Weighted-average exercise price (USD)</b>	<b>Number of options</b>	<b>Weighted-average exercise price (USD)</b>
Outstanding at January 1	279,000	13.90	--	--
Granted during the year	93,000	16.15	279,000	13.90
Exercised during the year	--	--	--	--
Forfeited during the year	(18,600)	14.46	--	--
Outstanding at December 31	353,400	14.46	279,000	13.90
Exercisable at December 31	--	--	--	--

The respective expected volatility has been based on an evaluation of the historical volatility of the Company's share price as at the grant date. As at December 31, 2018 no options are exercisable and 353,400 options are outstanding. The weighted-average contractual life of the options at December 31, 2018 amounts to 8.5 years (December 31, 2017: 9.5 years).

The expense recognized in the statement of comprehensive loss totaled kEUR 604 for the year ended December 31, 2018, compared to kEUR 386 for last year's same period.

## 8. Trade receivables

Credit terms provided to customers are determined individually and are dependent on already existing customer relationships and the customer's payment history. The aging of trade receivables was as follows at each reporting date:

### AGING STRUCTURE OF TRADE RECEIVABLES

An analysis of the credit quality of trade receivables that were not past due and the aging of trade receivables that were past due as at December 31, 2017 is as follows.

	<u>December 31,</u> <u>2017</u>	
Not due at the end of the reporting period		1,560
Amount past due for the following time ranges		
Less than 3 months		2,998
Between 3 and 6 months		363
Between 6 and 9 months		68
Between 9 and 12 months		70
More than 12 months		34
<b>Total</b>		<b>5,093</b>

The movement in the allowance for impairment in respect of trade receivables and contract assets during the year was as follows. Comparative amounts for 2017 represent the allowance account for impairment losses under IAS 39.

### Change in the allowance for doubtful accounts

	<u>Year Ended December 31,</u>	
	<u>2018</u>	<u>2017</u>
	(€ in thousands)	
<b>Loss allowance at December 31, 2017 under IAS 39</b>	<b>482</b>	<b>336</b>
Trade and other receivables as at December 31, 2017	62	--
Additional trade receivables recognized on adoption of IFRS 15	1	--
<b>Loss allowance at January 1, 2018 under IFRS 9</b>	<b>545</b>	<b>336</b>
Provisions	227	237
Write-offs	(351)	(58)
Release to income	(38)	(33)
<b>Balance at end of period</b>	<b>383</b>	<b>482</b>

## 9. Inventories

Inventories consisted of the following for the years reported:

### INVENTORIES BY CATEGORY

	December 31,	
	2018	2017 <sup>(1)</sup>
	(€ in thousands)	
Raw materials and merchandise	4,628	2,737
Work in progress	5,436	6,522
<b>Total</b>	<b>10,064</b>	<b>9,259</b>

<sup>(1)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Note 6 to the consolidated financial statements.

The reserve for slow-moving inventory regarding work in progress was kEUR 22 and kEUR 440 in 2018 and 2017, respectively.

## 10. voxeljet UK

### *Impairment charges 2016*

On October 7, 2016 voxeljet UK's most significant customer went into bankruptcy administration. Considering that development, voxeljet assessed the recoverability of the assets as of September 30, 2016, which resulted in a full impairment of trade receivables due from that customer of kEUR 293 and the goodwill for the CGU related to voxeljet UK.

The carrying amount of the CGU exceeded its recoverable amount of kEUR 1,471 (or kGBP 1,266) and consequently an impairment loss of kEUR 1,130 (or kGBP 907) covering the entire balance of goodwill was recognized in other operating expenses in the consolidated statements of comprehensive loss.

The recoverable amount of the CGU was based on its value in use. The value in use was determined by discounting the future cash flows expected to be generated from the continued use of the CGU.

The projections of cash flows cover the remainder of the year 2016 (forecast) and the financial years 2017 to 2021 (terminal value). The projected cash flows were estimated taking into account the cease of operations of the CGU's most significant customer, management's experience in the UK marketplace and from the Company's other service centers in Germany and the United States.

The cost of capital (weighted average cost of capital, WACC) and the terminal value growth rate are other assumptions used in the estimation of the value in use:

	2016
WACC	15.41%
Terminal value growth rate	1.00%

The parameters of the WACC are based on market observations as at September 30, 2016 (risk-free rate, spread, market risk premium, beta factor, leverage) and reflect the specific risks of voxeljet UK. The terminal value growth rate was determined on the basis of the expected long term development of prices in the UK and the relevant market for the CGU's services.

## 11. Intangible assets

	December 31,	
	2018	2017
	(€ in thousands)	
Software	787	573
Licenses	109	136
Prepayments made on intangible assets	524	402
<b>Total</b>	<b>1,420</b>	<b>1,111</b>

The increase in software and prepayments made on intangible assets is due to the purchase of software licenses in connection with our new ERP system as well as related capitalized customizing cost.

## 12. Property, plant and equipment

	December 31,	
	2018	2017 <sup>(1)</sup>
	(€ in thousands)	
Land, buildings and leasehold improvements	17,085	17,415
Plant and machinery (includes assets under finance lease)	9,072	8,901
Other facilities, factory and office equipment	1,502	1,625
Assets under construction and prepayments made	16	8
<b>Total</b>	<b>27,675</b>	<b>27,949</b>
Thereof pledged assets of Property, Plant and Equipment	6,691	7,046
<b>Leased assets included in Property, Plant and Equipment:</b>	<b>357</b>	<b>881</b>
Printers under sales and lease back	--	613
Printers leased to customers under operating lease	208	97
Other factory equipment	149	171

<sup>(1)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Note 6.

The pledged assets consist of the new office building and the new production hall, which were completed in 2017, as well as six 3D printers that serve as collateral for certain credit lines and loan agreements.

Amounts added to plant and machinery relating to self-constructed 3D printers are considered non-cash transactions, which totaled to kEUR 2,531 and kEUR 4,638 in the years ended December 31, 2018 and 2017, respectively. During 2018, the Group acquired equipment with a carrying amount of kEUR 0 (2017: kEUR 116) under a finance lease.

The following table presents the composition of, and annual movement in, intangible assets and property, plant and equipment for the years 2018 and 2017, respectively:

**2018**

	(€ in thousands)											Carrying amount	
	Acquisition and manufacturing cost					Depreciation and amortization							
	01/01/2018 <sup>(1)</sup>	Additions	Disposals	Transfer	FX	12/31/2018	01/01/2018	Current year	Disposals	Transfer	FX	12/31/2018	12/31/2018
<b>Intangible assets</b>													
Software	1,004	230	0	211	1	1,446	431	228	0	0	0	659	787
Licenses	245	--	0	0	0	245	109	27	0	0	0	136	109
Prepayments made on intangible assets	402	333	0	(211)	0	524	--	0	0	0	0	0	524
<b>Total</b>	<b>1,651</b>	<b>563</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2,215</b>	<b>540</b>	<b>255</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>795</b>	<b>1,420</b>
<b>Property, plant and equipment</b>													
Land, buildings and leasehold improvements	18,703	152	0	0	54	18,909	1,288	533	0	0	3	1,824	17,085
Plant and machinery	16,328	3,836	2,964	1,909	102	19,211	8,065	2,128	1,494	1,425	40	10,164	9,047
Other facilities, factory and office equipment	3,484	329	19	0	7	3,801	2,005	427	12	0	3	2,423	1,378
Assets under construction and prepayments made	8	17	0	(9)	0	16	--	0	0	0	0	0	16
<b>Subtotal</b>	<b>38,523</b>	<b>4,334</b>	<b>2,983</b>	<b>1,900</b>	<b>163</b>	<b>41,937</b>	<b>11,358</b>	<b>3,088</b>	<b>1,506</b>	<b>1,425</b>	<b>46</b>	<b>14,411</b>	<b>27,526</b>
Leased products	2,098	2	0	(1,900)	3	203	1,314	163	0	(1,425)	2	54	149
<b>Total</b>	<b>40,621</b>	<b>4,336</b>	<b>2,983</b>	<b>0</b>	<b>166</b>	<b>42,140</b>	<b>12,672</b>	<b>3,251</b>	<b>1,506</b>	<b>0</b>	<b>48</b>	<b>14,465</b>	<b>27,675</b>

**2017**

	(€ in thousands)											Carrying amount	
	Acquisition and manufacturing cost					Depreciation and amortization							
	01/01/2017	Additions	Disposals	Transfer	FX	12/31/2017	01/01/2017	Current year	Disposals	Transfer	FX	12/31/2017	12/31/2017 <sup>(1)</sup>
<b>Intangible assets</b>													
Software	798	137	17	91	(5)	1,004	283	166	16	--	(2)	431	573
Licenses	245	--	--	--	--	245	83	26	--	--	--	109	136
Prepayments made on intangible assets	205	328	40	(91)	--	402	40	--	40	--	--	--	402
<b>Total</b>	<b>1,248</b>	<b>465</b>	<b>57</b>	<b>0</b>	<b>(5)</b>	<b>1,651</b>	<b>406</b>	<b>192</b>	<b>56</b>	<b>0</b>	<b>(2)</b>	<b>540</b>	<b>1,111</b>
<b>Property, plant and equipment</b>													
Land, buildings and leasehold improvements	12,948	2,878	30	3,076	(169)	18,703	928	400	30	--	(10)	1,288	17,415
Plant and machinery	13,160	5,780	2,665	429	(376)	16,328	7,429	1,830	1,276	196	(114)	8,065	8,263
Other facilities, factory and office equipment	3,228	479	180	4	(47)	3,484	1,762	432	169	--	(20)	2,005	1,479
Assets under construction and prepayments made	3,249	9	--	(3,236)	(14)	8	--	--	--	--	--	--	8
<b>Subtotal</b>	<b>32,585</b>	<b>9,146</b>	<b>2,875</b>	<b>273</b>	<b>(606)</b>	<b>38,523</b>	<b>10,119</b>	<b>2,662</b>	<b>1,475</b>	<b>196</b>	<b>(144)</b>	<b>11,358</b>	<b>27,165</b>
Leased products	2,258	123	--	(273)	(10)	2,098	1,203	309	0	(196)	(2)	1,314	784
<b>Total</b>	<b>34,843</b>	<b>9,269</b>	<b>2,875</b>	<b>--</b>	<b>(616)</b>	<b>40,621</b>	<b>11,322</b>	<b>2,971</b>	<b>1,475</b>	<b>--</b>	<b>(146)</b>	<b>12,672</b>	<b>27,949</b>

<sup>(1)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Note 6.

The *Company* previously entered into sale and leaseback transactions for self-produced 3D printers, which were sold to banks and leased back. As of December 31, 2018 and 2017, the *Company* had zero and four active sale and leaseback contracts, respectively, as all the contracts have ended in 2018.

**13. Other liabilities and provisions**

	December 31,	
	2018	2017
	(€ in thousands)	
Customer deposits	--	373
Liabilities from VAT	24	12
Employee bonus	413	303
Accruals for vacation and overtime	210	222
Accruals for licenses	69	140
Liabilities from payroll	298	236
Accruals for commissions	47	50
Accruals for compensation of Supervisory board	180	180
Accrual for warranty	240	286
Others	387	322
<b>Total</b>	<b>1,868</b>	<b>2,124</b>



After the adoption of IFRS 15 customer deposits amounting to kEUR 177 were presented within contract liabilities.

	(€ in thousands)				
	January 1, 2018	Usage	Addition	Reversal	December 31, 2018
Accrual for warranty	286	(273)	240	(13)	240

*voxeljet* has a Long-Term Cash Incentive Plan (“LTCIP”) that provides for cash awards to non-executive employees. Under the plan, which was announced on October 2, 2013, the *Company* may grant individual award units of EUR 5,000 each up to a total maximum amount of 10% of the net proceeds received by the *Company* upon closing of its initial public offering. An initial grant of 684 award units was made to participants on October 2, 2013. The vesting of the awards occurs during three separate performance periods, with 20% of the awards vesting in performance period 1 ended December 31, 2013, 40% of the awards vesting in performance period 2 ended December 31, 2015, and the remaining 40% vesting in performance period 3 ending December 31, 2017.

Vesting of the award during performance period 3 is subject to performance and market conditions, including revenue growth and market capitalization as of December 31, 2017. In determining the fair value of the liability for the third period of the LTCIP, the *Company* originally estimated an 80% probability of achievement for each target and an employee turnover rate of 5.8% based on the past experience. However, in 2016, management updated its assessment and estimated that the achievement of the underlying targets on the third performance period of LTCIP would no longer be probable, resulting in a gain of kEUR 478 to the consolidated statements of comprehensive loss reflecting the reversal of previously accrued expected costs. As of December 31, 2017 the targets were not achieved and the LTCIP ceased.

The Group expects to settle the majority of the other liabilities and provisions over the next year.

#### 14. Financial instruments

Fair value is the price that would be received upon the sale of an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value hierarchy defines the following levels:

- Level 1: Quoted prices of the respective financial asset or financial liability in active markets
- Level 2: Other directly observable input parameters which contribute to establishing the fair value based on a valuation model
- Level 3: Input parameters not based on observable market data

Under IFRS 9 there are the following categories:

- (I) FVOCI
- (II) Mandatorily at FVTPL
- (III) Amortized cost

The effect of initially applying IFRS 9 on the Group’s financial instruments is described in Note 3. Due to the transition method chosen, comparative information has not been restated to reflect the new requirements.

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The following table shows the carrying amounts and fair values of financial assets and financial liabilities, including their levels in the fair value hierarchy.

12/31/2018	Carrying amount					Fair Value				Level
	FVTPL	FVOCI	Assets at amortized cost	Liabilities at amortized cost	Total carrying amount	Level 1	Level 2	Level 3	Total	
<b>Financial assets measured at fair value</b>										
<u>Non-current assets</u>										
Derivative financial instruments	2,229	--	--	--	2,229	--	2,229	--	2,229	Level 2
Equity securities	--	5	--	--	5	--	--	5	5	Level 3
<u>Current assets</u>										
Bond funds	--	12,905	--	--	12,905	12,905	--	--	12,905	Level 1
<b>Financial assets not measured at fair value</b>										
<u>Current assets</u>										
Cash and cash equivalents	--	--	7,402	--	7,402	7,402	--	--	7,402	Level 1
Trade and other receivables	--	--	6,030	--	6,030	--	--	--	--	
<b>Financial liabilities not measured at fair value</b>										
<u>Non-current liabilities</u>										
Long-term debt	--	--	--	16,250	16,250	--	15,231	--	15,231	Level 2
Finance lease obligation	--	--	--	71	71	--	69	--	69	Level 2
<u>Current liabilities</u>										
Long-term debt	--	--	--	816	816	--	809	--	809	Level 2
Finance lease obligation	--	--	--	34	34	--	34	--	34	Level 2
Trade payables	--	--	--	2,945	2,945	--	--	--	--	
12/31/2017			A financial asset or financial liability at fair value through profit or loss	Held-to-maturity investments	Available-for-sale investments	Loans and receivables	Financial liabilities measured at amortized cost	Fair Value		Level
<b>Assets</b>										
<u>Non-current assets</u>										
Equity securities	--	--	--	--	5	--	--	5		Level 3
Derivative financial instruments		352	--	--	--	--	--	352		Level 2
<u>Current assets</u>										
Bond funds	--	--	--	--	14,044	--	--	14,044		Level 1
Cash and cash equivalents	--	--	--	--	--	7,569	--	7,569		Level 1
<b>Liabilities</b>										
<u>Non-current liabilities</u>										
Long-term debt	--	--	--	--	--	--	16,242	15,119		Level 2
Finance lease obligation	--	--	--	--	--	--	171	163		Level 2
<u>Current liabilities</u>										
Bank overdraft	--	--	--	--	--	--	58	58		
Long-term debt	--	--	--	--	--	--	796	787		Level 2
Finance lease obligation	--	--	--	--	--	--	308	310		Level 2

The financial assets with a carrying amount of € 15.1 million reported on the *Company's* statement of financial position at December 31, 2018 were comprised of investments in seven bond funds (kEUR 11,847) and one note receivable (kEUR 1,058), all reported as current financial assets, an equity forward (kEUR 2,229) and equity securities (kEUR 5) reported as a noncurrent asset.

The financial assets with a carrying amount of € 14.4 million reported on the *Company's* statement of financial position at December 31, 2017 were comprised of investments in four bond funds (kEUR 14,044), all reported as current financial assets, an equity forward (kEUR 352) and equity securities (kEUR 5) reported as a noncurrent asset.

The fair value of the *Company's* investments in the bond funds was determined based on the unit prices quoted by the respective fund management company. The funds pursue the goal of daily liquidity and invest in short-term notes. The funds are open-ended; the units can be redeemed to the fund on a daily basis. Unit prices updated by the fund management company on a daily basis represent a quoted price in an active market.

The fair value of long-term debt was determined using discounted cash flow models based on the relevant forward interest rate yield curves. The fair value of finance lease obligations was determined using discounted cash flow models based on market interest rates available to the *Company* for similar transactions at the relevant date.

The fair value of the derivative financial instruments was determined based on the *Company's* stock price and the risk-free interest rate for the remaining term of the derivative using a forward pricing formula.

## 15. Cost of sales

Cost of sales includes personnel expenses, cost of material, purchased services, cost for finished goods and allocated indirect costs related to production.

### COST OF SALES

	Year Ended December 31,		
	2018	2017 <sup>(1)</sup>	2016
	(€ in thousands)		
Personnel expenses	(5,404)	(4,344)	(3,570)
Material costs	(7,082)	(6,443)	(6,837)
Depreciation	(2,197)	(2,071)	(1,562)
Other expenses	(2,598)	(1,510)	(2,512)
Allowance for slow-moving inventory	417	515	(954)
<b>Total</b>	<b>(16,864)</b>	<b>(13,853)</b>	<b>(15,435)</b>

<sup>(1)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Note 6.

In 2018, other expenses consisted of rental and building expenses (kEUR 491), travel expenses (kEUR 294) and license fees (kEUR 92). In 2017, other expenses consisted of license fees (kEUR 404), rental and building expenses (kEUR 463) and travel expenses (kEUR 296).

In 2016, other expenses consisted of rental and building expenses (kEUR 644), license fees (kEUR 421), travel expenses (kEUR 414) and tooling kits (kEUR 198).

## 16. Other operating income and expense

The details of other operating income and expenses are presented for the years reported in the tables below:

### OTHER OPERATING INCOME

	Year Ended December 31,		
	2018	2017	2016
	(€ in thousands)		
Government grant income	11	120	75
Amortization of gain on sale and leaseback transactions	119	206	283
Reimbursement of transaction costs	121	254	127
Gains from foreign exchange transactions	794	135	645
Other	252	286	287
<b>Total</b>	<b>1,297</b>	<b>1,001</b>	<b>1,417</b>

Other operating income includes an amount of kEUR 38 (2017: kEUR 33) for the movement of impairment on trade receivables.

### OTHER OPERATING EXPENSE

	Year Ended December 31,		
	2018	2017	2016
	(€ in thousands)		
Impairment loss on trade receivables	224	240	379
Losses from foreign exchange transactions	511	1,585	2,077
Impairment of Goodwill	--	--	1,130
Equity-settled share-based payment transaction in relation to the establishment of a subsidiary with non-controlling interest	--	--	256
Other	16	19	39
<b>Total</b>	<b>751</b>	<b>1,844</b>	<b>3,881</b>

## 17. Financial result

The details of financial result are presented for the years reported in the table below:

	Year Ended December 31,		
	2018	2017	2016
	(€ in thousands)		
<u>Interest expense</u>	(1,143)	(190)	(230)
Finance lease obligations	(69)	(45)	(57)
Long-term debt	(944)	(100)	(68)
Other	(130)	(45)	(105)
<u>Interest income</u>	1,952	365	38
Payout of bond funds	58	11	35
Income from revaluation of derivative financial instruments	1,877	352	--
Other	17	2	3
<b>Financial result</b>	<b>809</b>	<b>175</b>	<b>(192)</b>

## 18. Income taxes

Income taxes consist of the following for the years reported:

### Income tax (expense) benefit

	Year Ended December 31,		
	2018	2017	2016
	(€ in thousands)		
Current tax expense	--	--	(2)
Deferred tax (expense) benefit	(11)	(80)	--
<b>Total</b>	<b>(11)</b>	<b>(80)</b>	<b>(2)</b>

### Deferred tax assets and liabilities

The components of net deferred income taxes at the end of the respective reporting periods were as follows:

### SOURCES OF DEFERRED TAX ASSETS AND LIABILITIES

	December 31,		2017	
	2018	(€ in thousands)		2017
	Deferred tax assets	Deferred tax liabilities	Deferred tax assets	Deferred tax liabilities
Trade receivables	1	(18)	6	(88)
Other receivables and current assets	959	(62)	26	(84)
Inventories	22	(10)	71	(4)
Property, Plant & Equipment	329	(85)	527	(374)
Non-current other assets	--	--	110	--
Current deferred income	--	--	1	--
Trade liabilities	231	--	22	--
Current financial liabilities	209	--	126	--
Current financial assets	3	(624)	12	(98)
Other current liabilities and provisions	204	(729)	73	--
Contract liabilities	17	(141)	--	--
Non-current deferred income	--	--	1,076	--
Non-current financial liabilities	--	(76)	--	(42)
Non-current financial assets	--	--	3	--
Non-current liabilities and provisions	--	--	--	(1,020)
Intangible assets	--	(1)	--	(1)
Tax losses carried forward	113	--	97	--
Valuation allowance	(418)	--	(505)	--
Tax assets (liabilities)	1,670	(1,746)	1,645	(1,711)
Set off of tax	(1,670)	1,670	(1,645)	1,645
<b>Net tax</b>	<b>0</b>	<b>(76)</b>	<b>0</b>	<b>(66)</b>

At December 31, 2018 *voxeljet* had gross loss carry-forwards for corporation tax and trade tax losses of kEUR 26,617 and kEUR 26,033, respectively, for which no deferred taxes have been recognized. These tax losses can be carried forward without restriction for future offset against taxable profits. In addition, there are foreign tax loss carry-forwards of kEUR 14,352, primarily related to our subsidiary in the UK.

### Reconciliation of profit before income taxes to income tax

The reconciliation between profit before income taxes and income tax benefit (expense) for the reporting periods presented was as follows:

**RECONCILIATION OF INCOME TAX BENEFIT (EXPENSE)**

	Year Ended December 31,		
	2018	2017 <sup>(1)</sup>	2016
	(€ in thousands)		
Loss before tax	(8,753)	(8,474)	(11,311)
Tax expense at prevailing statutory rate (28%)	2,451	2,373	3,167
Non-deductible expenses	(196)	(326)	(170)
Non-taxable income	242	266	116
Tax-rate related differences	(128)	(139)	(128)
Unrecognized temporary differences and tax losses	(2,380)	(2,254)	(2,987)
<b>Income tax expense</b>	<b>(11)</b>	<b>(80)</b>	<b>(2)</b>

**19. Personnel expenses**

Personnel expenses included in cost of sales, research and development, and selling and administrative expenses are comprised of the following:

**PERSONNEL EXPENSES**

	Year Ended December 31,		
	2018	2017	2016
	(€ in thousands)		
Wages and salaries	12,772	10,769	9,772
LTCIP	--	--	(478)
Employee stock option plan	604	386	--
Social security contributions	2,527	2,197	1,799
<b>Total</b>	<b>15,903</b>	<b>13,352</b>	<b>11,093</b>

*voxeljet AG* offers to its employees a defined contribution plan called “MetallRente”. The contributions paid by the *Company* amounted to kEUR 61, kEUR 62 and kEUR 57 for the years ended December 31, 2018, 2017 and 2016, respectively. The employer’s contribution into the mandatory German state plan amounted to kEUR 849, kEUR 710 and kEUR 697 for the years ended December 31, 2018, 2017, and 2016, respectively.

**20. Segment reporting**

*voxeljet* operates in two reportable segments—Systems and Services—which reflect the internal organizational and management structure according to the distinct nature of the two businesses. The Systems business derives its revenues from the manufacture and sale of 3D printers, from the sale of consumables, as well as from lease, maintenance and extended warranty agreements with customers, while the Services business provides customized printed products to customers.

The Management Board of *voxeljet* is the chief operating decision maker. As a performance indicator, the chief operating decision maker mainly monitors the *Company's* revenues and gross profit.

The following table summarizes segment reporting for each of the reporting periods ended December 31. As management’s controlling instruments are mainly revenue-based, the reporting information does not include a detailed breakdown of all assets and liabilities by category. The sum of the amounts for the two segments equals the total for the *Company* for each of the years presented.

**SEGMENT REPORTING**

	Year Ended December 31,					
	2018		2017 <sup>(1)</sup>		2016	
	SYSTEMS	SERVICES	SYSTEMS	SERVICES	SYSTEMS	SERVICES
	(€ in thousands)					
Revenues	12,248	13,761	11,534	11,644	13,081	9,257
Gross profit	3,708	5,437	4,258	5,067	3,197	3,706
Gross profit in %	30.3%	39.5%	36.9%	43.5%	24.4%	40.0%
PPE	11,804	15,871	13,070	14,628	9,936	13,585
Trade receivables	3,479	2,551	2,899	2,194	2,566	1,567
Trade payables	1,726	1,219	1,885	1,174	833	932

Systems revenues include revenues from the sales of used 3D printers of kEUR 1,489, kEUR 2,556, and kEUR 1,235 for the years ended December 31, 2018, 2017, and 2016, respectively.

**Geographic information**

**REVENUES BY GEOGRAPHICAL REGION**

voxeljet's revenues and non-current assets are presented below by geographic region. For purposes of this presentation, revenues are based on the geographic location of customers and assets are based on their geographic location.

voxeljet's revenues were generated in the following geographical regions for the years reported:

	Year Ended December 31,		
	2018	2017	2016
	(€ in thousands)		
EMEA	14,673	14,832	13,364
Germany	6,605	5,677	6,132
France	2,667	2,611	2,725
Great Britain	1,050	1,459	1,135
Others	4,351	5,085	3,372
Asia Pacific	5,450	2,526	4,831
Indonesia	1,819	--	--
China	2,134	1,549	194
South Korea	888	721	1,680
Thailand	6	6	1,327
Taiwan	7	25	1,303
Others	596	225	327
Americas	5,886	5,820	4,143
United States	5,802	5,474	4,107
Others	84	346	36
<b>Total</b>	<b>26,009</b>	<b>23,178</b>	<b>22,338</b>

**NON-CURRENT ASSETS BY GEOGRAPHICAL REGION**

	December 31,	
	2018	2017 <sup>(1)</sup>
	(€ in thousands)	
EMEA	26,651	25,366
Germany	25,104	23,906
Great Britain	1,547	1,460
Asia Pacific	1,090	1,360
Americas	3,675	2,782
United States	3,675	2,782
<b>Total</b>	<b>31,416</b>	<b>29,508</b>

<sup>(1)</sup> Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Note 6.

## 21. Financial risk management

The *Company's* Management Board is responsible for implementing the finance policy and for ongoing financial risk management. Therefore the Management Board has established a Risk Management Committee, which is responsible for developing and monitoring of the Group's risk management policies, especially regarding financial risks. Generally the committee provides an overview of financial risks on a quarterly basis to the Management Board as part of the *Company's* quarterly management reporting procedures.

The *Company's* principal financial instruments are comprised of short-term bank deposits at commercial institutions, bond funds, lease obligations and long-term debt. The main purpose of the financial asset instruments is to provide a return on investments with minimal risk. The main purpose of the financial liability instruments is to help fund the *Company's* operations. The *Company* has various other financial assets and liabilities including trade receivables and trade payables, which arise directly from its operations.

The main purpose of the financial liability instruments is to fund the *Company's* operations and research and development activities. A portion of the long-term debt includes a derivative financial instrument related to a future interest payment which is linked to the *Company's* stock price (Performance Participation Interest).

The main risks arising from the Group's financial instruments are foreign exchange risk, credit risk and equity price risks. The measures taken by Management to manage each of these risks are summarized below.

Transactions related to activities in the area of financial instruments require the prior approval of the Chief Financial Officer. The *Company* did not enter into any derivative financial instruments for hedging purposes in 2018.

Management receives a weekly reporting of the current liquidity of the Group by entity. Furthermore, a monthly cash flow plan meeting has been established, where Management reviews the cash forecasts and the future development of flows of funds on an ongoing basis.

### *Foreign exchange risk*

The *Company* is exposed to foreign exchange risk to the extent that there is a difference between the currencies in which sales, purchases and borrowings are denominated and the respective functional currencies of subsidiaries of the Group. The functional currencies of the parent company *voxeljet AG* and its subsidiaries are Euro, US Dollars, British Pound Sterling, Indian rupee and Chinese yuan renminbi. The majority of the sale, purchase and borrowing transactions are denominated in the functional currency of the parent company or its subsidiaries. The *Company's* most significant foreign exchange risk relates to intercompany loans made to subsidiaries, as described below.

*voxeljet* has provided intercompany loans to its subsidiaries to finance their operations. The loans were granted in the local currency of the subsidiaries. Gains and losses from movements in exchange rates are recorded within other operating income or expense in the consolidated statement of comprehensive loss. As of December 31, 2018 the amount loaned to *voxeljet UK* by *voxeljet AG* totaled GBP 8.1 million (€ 9.0 million). A relative increase in the value of the Euro against British Pound Sterling of 10% would lead to a loss of € 0.8 million. The amount of loaned to *voxeljet America* totaled to USD 6.8 million (€ 5.9 million) as of December 31, 2018. An increase in the value of the Euro against US Dollars of 10% would lead to a loss of € 0.5 million.

For the year ended December 31, 2018, *voxeljet* generated 41.9% of its revenues in the eurozone. Additionally, the majority of the *Company's* sourcing transactions are also transacted in Euros in that zone.

The *Company* invoiced 70% in 2018, 70% in 2017 and 84% in 2016 of total revenues in Euro. As revenues in foreign currency usually correspond to costs which are incurred in the same currency, we consider the risk as minor.



The significant exchange rates which have been applied during the years presented are disclosed in Note 3.

#### *Interest rate risk*

voxeljet's principal interest-bearing positions are liabilities for bank borrowings and finance lease obligations. These liabilities are entirely at a fixed interest rate, with one exception. As such, changes in market interest rates have no material effect on future interest expenses. A change of 10% in interest rates would increase or decrease interest expense less than kEUR 2.

In connection with the first tranche of the loan received by the European Investment Bank amounting to € 10.0 million, the Company issued a warrant, Performance Participation Interest (PPI), accounted for separately as derivative financial instruments from the host contract (loan financial liability), with changes in fair value reported in the consolidated statements of comprehensive loss until the derivative financial instruments settle or expire. The loan is accounted for according to the effective interest method. The effective interest rate of the loan with the European Investment Bank is 7.58%, which is imputed based on the fair value of the derivative financial instruments on the date of the loan disbursement. Changes in the market interest will not affect the loan accounting. However, the derivative instrument is affected by changes in the risk-free rate. Increases in the risk-free rate will lead to a decrease of the fair value of the derivative instrument; decreases in the risk-free rate will lead to an increase in the fair value of the derivative instrument.

#### *Equity price risk*

The *Company* is also exposed to equity price risks which arise from derivative financial instruments (PPI) associated with the loan received by the European Investment Bank which depend upon the Company's share price. Changes in the Company's share price will affect the value of an equity forward derivative instrument (increasing share prices as compared to the share price at disbursement date will lead to a negative fair value of the derivative, decreasing share prices will lead to a positive fair value of the derivative). An increase/decrease of the price per ADR by USD 1.00 leads to an increase/decrease of the derivative financial instrument by € 1.1 million.

#### *Credit risk*

Credit risk is the risk of the *Company* suffering a financial loss as the result of its counterparties being unable to perform their obligations. The *Company* is exposed to credit risk from its operating activities (mainly trade receivables) and from its financing activities, including deposits and investments with financial institutions. Therefore, the carrying amount of cash and cash equivalents, financial assets, and trade receivables represents the maximum credit exposure of € 26.4 million (2017: € 27.1 million).

The *Company's* exposure to credit risk is influenced by the individual characteristics of each customer. However, Management also considers factors that influence the credit risk of its customer base, including the default risk of the industry and the country in which the customer operates. *voxeljet* seeks to minimize such risk by entering into transactions with counterparties that are believed to be creditworthy business partners or with financial institutions which meet high credit rating requirements. In addition, the portfolio of receivables and customer advances is monitored on a continuous basis. Credit risk is limited to a specified amount with regard to individual receivables. There were no customer loans outstanding as of December 31, 2018 and 2017. Since 2018, the Company calculates an expected credit loss (ECL) based on the risk scoring its customers' according to an external rating agency. Following the risk score of each customer, the trade receivables are clustered into different grades. For each grade, the ECL is calculated after deducting from trade receivables a loss allowance based on actual credit loss experience.

The Group limits its exposure to credit risk by investing only in bond funds which are fully guaranteed by the financial institutions and therefore represents short term credit rating of A-3 based on Standard & Poor's or P-2 based on Moody's.

The bank deposit are held with financial institutions, which are rated BBB to A2 based on Standard & Poor's and Moody's.

*Reconciliation of movements of liabilities to cash flows arising from financing activities*

<i>(€ in thousands)</i>	Liabilities			Equity				Total
	Bank overdrafts used for cash management purposes	Other loans and borrowings	Finance lease liabilities	Subscribed capital	Capital reserves	Accumulated deficit <sup>(1) (2)</sup>	Non-controlling interests	
<b>Restated balance at January 1, 2018</b>	<b>58</b>	<b>17,038</b>	<b>479</b>	<b>3,720</b>	<b>76,227</b>	<b>(37,672)</b>	<b>71</b>	<b>59,921</b>
<b>Changes from financing cash flows</b>								
Proceeds from loans and borrowings	—	1,639	—	—	—	—	—	1,639
Repayment of borrowings	(58)	(2,764)	—	—	—	—	—	(2,822)
Payment of finance lease liabilities	—	—	(361)	—	—	—	—	(361)
Proceeds from issuance of shares	—	—	—	1,116	9,972	—	—	11,088
<b>Total changes from financing cash flows</b>	<b>(58)</b>	<b>(1,125)</b>	<b>(361)</b>	<b>1,116</b>	<b>9,972</b>	<b>—</b>	<b>—</b>	<b>9,544</b>
<b>Other changes</b>								
<b>Liability-related</b>								
Capitalized borrowing costs	—	—	—	—	—	—	—	—
Reclassification	—	1,152	(13)	—	—	—	—	1,139
Interest expense	—	944	69	—	—	—	—	1,013
Interest paid	—	(943)	(69)	—	—	—	—	(1,012)
<b>Total liability-related other changes</b>	<b>—</b>	<b>1,153</b>	<b>(13)</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>1,140</b>
<b>Total equity-related other changes</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>604</b>	<b>(8,728)</b>	<b>(36)</b>	<b>(8,160)</b>
<b>Balance at December 31, 2018</b>	<b>—</b>	<b>17,066</b>	<b>105</b>	<b>4,836</b>	<b>86,803</b>	<b>(46,400)</b>	<b>35</b>	<b>62,445</b>

<sup>(1)</sup> Restated balance at January 1, 2018 includes restatement for immaterial errors. For further information, see Note 6.

<sup>(2)</sup> Restated balance at January 1, 2018 includes impact of the adoption of IFRS 9 and IFRS 15.

(€ in thousands)	Liabilities			Equity				Total
	Bank overdrafts used for cash management purposes	Other loans and borrowings	Finance lease liabilities	Subscribed capital	Capital reserves	Accumulated deficit	Non-controlling interests	
<b>Restated balance at January 1, 2017</b>	224	5,099	791	3,720	75,827	(28,971)	87	56,777
<b>Changes from financing cash flows</b>								
Proceeds from loans and borrowings	—	12,612	—	—	—	—	—	12,612
Repayment of borrowings	(165)	(732)	—	—	—	—	—	(897)
Payment of finance lease liabilities	—	—	(436)	—	—	—	—	(436)
<b>Total changes from financing cash flows</b>	<b>(165)</b>	<b>11,880</b>	<b>(436)</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>11,279</b>
<b>Other changes</b>								
<b>Liability-related</b>								
Capitalized borrowing costs	—	—	—	—	—	—	—	78
Reclassification	—	42	123	—	—	—	—	165
Interest expense	—	100	45	—	—	—	—	145
Interest paid	—	(161)	(45)	—	—	—	—	(206)
<b>Total liability-related other changes</b>	<b>—</b>	<b>59</b>	<b>123</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>182</b>
<b>Total equity-related other changes</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>400</b>	<b>(8,509)</b>	<b>(16)</b>	<b>(8,125)</b>
<b>Balance at December 31, 2017</b>	<b>59</b>	<b>17,038</b>	<b>478</b>	<b>3,720</b>	<b>76,227</b>	<b>(37,480)</b>	<b>71</b>	<b>60,113</b>

#### Liquidity risk

Liquidity risk is the risk that *voxeljet* might not have sufficient cash to meet its payment obligations associated with its financial liabilities that are settled by delivering cash or another financial asset. *The Company's* approach to managing liquidity is to ensure, as far as possible, that it will have sufficient liquidity to meet its liabilities when they are due, under both normal and stressed conditions, without incurring unacceptable losses or risking damage to the reputation of the *Company*. Liquidity risk is countered by systematic, day-by-day liquidity management whose fundamental requirement is that solvency must be guaranteed at all times. A major responsibility of management is to monitor the cash balances and to set up and update cash planning on a monthly basis to ensure liquidity. At all times cash and cash equivalents are projected on the basis of a regular financial and liquidity planning. The monitoring includes the expected cash inflows on trade and other receivables together with expected cash outflows from trade and other payables.

In 2016, *voxeljet* concluded new loan agreements with Kreissparkasse Augsburg, Germany, to finance the construction of new office and production facilities in Friedberg: (i) in May 2016, the *Company* entered into a € 1.0 million loan agreement due April 30, 2021. Interest is payable at a fixed rate of 2.35%; (ii) in September 2016, the *Company* entered into a € 2.0 million loan agreement due May 31, 2038. Interest is payable at a fixed rate of 2.47%; (iii) In October 2016, the *Company* entered into a € 0.7 million loan agreement due September 30, 2021. Interest is payable at a fixed rate of 2.29%; and (iv) in December 2016, the *Company* entered into a € 1.0 million loan agreement due January 31, 2038. Interest is payable at a fixed rate of 2.72%. Among other terms, the loan agreements contain (i) certain covenants, including that *voxeljet* deposit € 2.0 million with Kreissparkasse Augsburg until it has reached certain ratio with respect to its ability to service the debt by the end of fiscal year 2019, and (ii) change of control provisions concerning the ownership of the *Company* by its executive officers, Dr. Ingo Ederer and Rudolf Franz. In case *voxeljet* fails to meet that ratio by the end of its fiscal year 2019, *voxeljet* is obliged to pledge € 2.0 million for the benefit of the lender. In addition, the land owned by *voxeljet* upon which the facilities will be built as well as three 3D printers will serve as collateral under the loan agreements.

On November 9, 2017, the European Investment Bank (“EIB”) and the *Company* entered into a Finance Contract and Synthetic Warrant Agreement to support the *Company*’s undertaking of research and development projects for growth from 2017 to 2020. The contract provides a credit of up to € 25 million in three tranches of € 10 million, € 8 million, and € 7 million.

Under the Contract, the *Company* may borrow under the credit up to €25 million, subject to a limit of 50% of the total research and development expenditures and manufacturing capital expenditures from 2017 to 2020. The interest rates for the three tranches are 0%, 7% and 3%, respectively. The *Company* may borrow the second and third tranche only if certain revenue and EBITDA levels are met. The Contract also includes a financial covenant that requires the *Company* to meet certain minimum financial ratios from 2019 to 2025. Under a First Demand Guarantee Agreement the Finance Contract is guaranteed by the voxeljet USA subsidiary.

In 2018, voxeljet did not enter into any new loan agreement.

The total research and development expenditures and manufacturing capital expenditures are expected to be € 14.0 million and € 16.2 million for the fiscal year 2019 and 2020, respectively.

The first tranche of € 10 million received on December 22, 2017, the EIB under the Synthetic Warrant Agreement was entitled to receive as consideration in cash equal to the market value of 195,790 ordinary shares of the *Company* (or equivalent number of ADS of the *Company*) at the maturity date (5 years after draw down), after the occurrence of a trigger event, or on the expiration date (10 years after draw down). Under the anti-dilution protection clause of the agreement the number of ordinary shares under the Synthetic Warrant Agreement was increased to 254,527 as a result of the capital increase effective October 17, 2018 and November 1, 2018.

voxeljet may prepay all or part of any Tranche before the maturity date, together with accrued interest.

The following are the remaining contractual maturities of financial liabilities and trade payables at the reporting date. The amounts are gross and undiscounted and include contractual interest payments.

		<b>December 31, 2018 (€ in thousands)</b>					
		<b>Contractual cash flow</b>					
	carrying amount	Total	2 months or less	2-12 months	1-3 years	3-5 years	More than 5 years
Long-term debt	17,066	(22,529)	(160)	(799)	(1,518)	(15,251)	(4,801)
Finance lease obligations	105	(109)	(9)	(27)	(56)	(17)	--
Trade payables	2,945	(2,945)	(2,945)	--	--	--	--
<b>Total</b>	<b>20,116</b>	<b>(25,583)</b>	<b>(3,114)</b>	<b>(826)</b>	<b>(1,574)</b>	<b>(15,268)</b>	<b>(4,801)</b>

		<b>December 31, 2017 (€ in thousands)</b>					
		<b>Contractual cash flow</b>					
	carrying amount	Total	2 months or less	2-12 months	1-3 years	3-5 years	More than 5 years
Bank overdrafts and lines of credit	58	(58)	(58)	--	--	--	--
Long-term debt	17,038	(23,423)	(160)	(798)	(1,843)	(15,587)	(5,035)
Finance lease obligations	479	(495)	(73)	(247)	(132)	(43)	--
Trade payables	3,059	(3,059)	(3,059)	--	--	--	--
<b>Total</b>	<b>20,634</b>	<b>(27,035)</b>	<b>(3,350)</b>	<b>(1,045)</b>	<b>(1,975)</b>	<b>(15,630)</b>	<b>(5,035)</b>

In spite of the significant cash outflow in 2018 and 2017, the *Company*’s short and mid-term liquidity needs are currently covered. This is supported through the capital increase finalized in the fourth quarter of 2018 with net proceeds of approximately € 11.1 million. The mid-term business plan includes the raising of additional capital through additional debt, equity or other alternatives to ensure the cash requirements of the *Company*. In order to be prepared for additional public fund raising the *Company* filed a form F-3 with the SEC in August 2017. As the cash position of the *Company* is still sufficient, mid-term liquidity risk is considered low.

## 22. Capital management

Management's aim is to maintain a strong capital base so as to maintain investor, creditor and market confidence and to sustain future development of the business.

Equity is monitored by the *Company* using financial ratios. The equity used as a basis for determining the equity ratio corresponds to the equity disclosed in the Consolidated Statement of Financial Position.

Part of the capital management strategy is to reduce the number of sale and leaseback transactions for 3D printing equipment used in the production of printed products for customers. As a result of the *Company's* increased liquidity from its public equity offerings, certain lease contracts have been terminated prior to their scheduled maturity.

*voxeljet's* capital structure as of the end of the reporting periods 2018 and 2017 was as follows:

### CAPITAL STRUCTURE

	December 31,	
	2018	2017 (1)
	(€ in thousands)	
<b>Equity</b>	<b>46,475</b>	<b>43,889</b>
Share of total equity and liabilities	67.0%	65.5%
Current financial liabilities	850	1,162
Non-current financial liabilities	16,321	16,413
<b>Total financial liabilities</b>	<b>17,171</b>	<b>17,575</b>
Share of total equity and liabilities	24.8%	26.2%
<b>Total equity and liabilities</b>	<b>69,352</b>	<b>67,002</b>

## 23. Leases

### Finance leases

#### *Lessee*

Future minimum lease payments under financing lease arrangements at the end of the considered reporting periods were as follows:

**PRESENT VALUE OF MINIMUM LEASE PAYMENTS**

	December 31, 2018		
	(€ in thousands)		
	Minimum future lease payments obligation	Unamortized interest expense	Present value of minimum future lease payments obligation
due within 1 year	36	(2)	34
due between 1 and 5 years	73	(2)	71
<b>Total</b>	<b>109</b>	<b>(4)</b>	<b>105</b>

	December 31, 2017		
	(€ in thousands)		
	Minimum future lease payments obligation	Unamortized interest expense	Present value of minimum future lease payments obligation
due within 1 year	320	(12)	308
due between 1 and 5 years	175	(4)	171
<b>Total</b>	<b>495</b>	<b>(16)</b>	<b>479</b>

**Operating Leases**

*Lessee*

The estimated payment schedule regarding operating leases at the end of the considered reporting periods was as follows:

**OPERATING LEASE OBLIGATIONS**

	December 31,	
	2018	2017
	(€ in thousands)	
Less than 1 year	554	486
1 to 5 years	1,666	762
Over five years	364	398
<b>Total</b>	<b>2,584</b>	<b>1,646</b>

Operating lease expenses were kEUR 528, kEUR 537, and kEUR 630 in the financial years 2018, 2017, and 2016, respectively. Operating lease expenses are primarily related to the rental agreements for real estate regarding our foreign operations.

*Lessor*

*voxeljet* leased two of its self-produced 3D printers to two customers. Under the lease contract, *voxeljet* bears a majority of the substantial risks and rewards of the underlying assets.

**Operating lease payments receivable for subleases**

	December 31,	
	2018	2017
	(€ in thousands)	
Less than 1 year	94	30
1 to 5 years	--	--
<b>Total</b>	<b>94</b>	<b>30</b>

The operating lease income was kEUR 31, kEUR 145 and kEUR 89 in the financial years 2018, 2017, and 2016, respectively.

#### 24. Commitments, contingent assets and liabilities

In connection with the enforcement of *voxeljet's* intellectual property rights, the acquisition of third-party intellectual property rights, or disputes related to the validity or alleged infringement of the *Company's* or a third-party's intellectual property rights, including patent rights, *voxeljet* has been and may in the future be subject or party to claims, negotiations or complex, protracted litigation.

In March 2018, ExOne GmbH, a subsidiary of ExOne, notified voxeljet of its intent not to pay its annual license fees under an existing intellectual property-related agreement and asserted its rights to claim damages pursuant to an alleged material breach of the agreement. At this time, the Company cannot reasonably estimate a contingency, if any, related to this matter.

#### 25. Related party transactions

Related party transactions at *voxeljet* mainly consist of transactions with individuals on the Management Board and Supervisory Board.

Key management is defined as those individuals having authority and responsibility for planning, directing and controlling the activities of the *Company* within their function and within the interest of the *Company*.

The following table presents the amount and components of Management Board compensation:

#### MANAGEMENT COMPENSATION

	Year Ended December 31,		
	2018	2017	2016
	(€ in thousands)		
Fixed compensation	781	778	644
Compensation arisen from stock option plan	360	231	--
<b>Total</b>	<b>1,141</b>	<b>1,009</b>	<b>644</b>

Management Board remuneration currently consists of a fixed monetary remuneration, other fixed benefits (including *Company* car allowances and contributions to a defined contribution plan), a variable bonus as well as the participation in a stock options plan, which was executed on April 7, 2017.

#### Transactions with related parties

A related party relationship could have an effect on the profit and loss and financial position of the *Company*. Defined as related parties are individuals or other third parties with whom *voxeljet* has common control relationships.

#### OTHER RELATED PARTIES

Name	Nature of relationship	Duration of relationship
Franz Industriebeteiligungen AG, Augsburg	Lessor	10/01/2003-Current
Schlosserei und Metallbau Ederer, Dießen	Supplier	05/01/1999-Current
Andreas Schmid Logistik AG	Supplier	05/01/2017-Current
Suzhou Meimai Fast Manufacturing Technology Co., Ltd	Customer	04/11/2016-Current
Simon Franz	Employee	04/11/2017-Current
DSCS Digital Supply Chain Solutions GmbH	Customer	05/11/2017-Current

Transactions with Franz Industriebeteiligungen AG comprise the rental of office space in Augsburg, Germany. Rental expenses amounted to kEUR 2, in each of 2018, 2017 and 2016. In addition, Franz Industriebeteiligungen AG received payments related to the use of certain paintings which are placed in the administrative building in Friedberg. Associated rental expenses amount to kEUR 2 in each of 2018, 2017, and 2016.

Further, *voxeljet* acquired goods amounting to kEUR 7, kEUR 15, and kEUR 15 in 2018, 2017 and 2016 from ‘Schlosserei und Metallbau Ederer’, which is owned by the brother of Dr. Ingo Ederer, the Chief Executive Officer of *voxeljet*.

In addition, *voxeljet* received logistics services amounting to kEUR 74 and kEUR 43 in 2018 and 2017 from ‘Andreas Schmid Logistik’, where the member of our supervisory board Dr. Stefan Sohn serves as CFO.

Moreover, *voxeljet* received orders amounting to kEUR 175, kEUR 244 and kEUR 87 in 2018, 2017 and 2016 from ‘ Suzhou Meimai Fast Manufacturing Technology Co., Ltd. , which is our joint venture partner for voxeljet China.

Further, *voxeljet* received orders amounting to kEUR 0 and kEUR 0 in 2018 and 2017 from ‘DSCS Digital Supply Chain Solutions GmbH’, which is an associated company where we own 33.3%.

In addition, *voxeljet* employed Simon Franz, who is the son of voxeljet’s CFO Rudolf Franz. He received a salary of kEUR 12 and kEUR 3 in 2018 and 2017, respectively.

## **26. Equity**

At December 31, 2018, 4,836,000 no-par value ordinary shares were issued and outstanding. There is only a single class of ordinary shares with the same rights, preferences and restrictions. Each share entitles the holder to one vote at the shareholders’ meeting. Shareholders participate in the profits according to their share in the share capital, based on their number of shares held. The general shareholders’ meeting resolves the appropriation of the balance sheet profit established in the annual financial statements and the dividends.

On October 17, 2018, voxeljet issued 972,000 ordinary shares, equivalent to 4,860,000 American Depository Shares (“ADS”), at an offering price of USD 2.57 per ADS (the “Public Offering Price”). The Company received net proceeds of approximately EUR 9.7 million. Members of the Management Board, who are also significant shareholders, purchased an aggregate number of 233,462 ADSs in this offering at the Public Offering Price. On November 8, 2018, voxeljet closed the over-allotment transaction in which it issued additional 144,000 ordinary shares, equivalent to 720,000 ADSs, upon the exercise of the over-allotment option exercised by the underwriter on November 1, 2018. The Company received net proceeds of approximately EUR 1.4 million.

Incremental costs of EUR 0.6 million directly attributable to the issue of ordinary shares are recognized as a deduction from equity.

The Articles of Association authorize the Management Board, subject to the consent of the Supervisory Board, to increase the *Company*’s registered share capital in one or more tranches by up to kEUR 744 new no par value ordinary shares against contribution in cash or in kind until May 29, 2023.

## **27. Subsequent events**

At March 1, 2019, voxeljet China moved into a new facility. The new facility comprises production floor, storage as well as office space.



## Subsidiaries of voxeljet AG

<b>Business-Entity</b>	<b>First consolidation date</b>	<b>Shares</b>
voxeljet America Inc.	February 5, 2014	100.00%
voxeljet UK Ltd.	October 1, 2014	100.00%
voxeljet India Pvt. Ltd.	January 21, 2016	100.00%
voxeljet China Pvt. Ltd.	April 11, 2016	95.83%

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**CERTIFICATION OF CHIEF EXECUTIVE OFFICER  
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Dr. Ingo Ederer, certify that:

1. I have reviewed this Annual Report on Form 20-F of voxeljet AG;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or cause such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or other persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ DR. INGO EDERER

Dr. Ingo Ederer

*Chief Executive Officer*

*(Principal Executive Officer)*

Dated: March 28, 2019

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**CERTIFICATION OF CHIEF FINANCIAL OFFICER  
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Rudolf Franz, certify that:

1. I have reviewed this Annual Report on Form 20-F of voxeljet AG;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or cause such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or other persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ RUDOLF FRANZ

Rudolf Franz  
*Chief Financial Officer*  
*(Principal Financial Officer)*

Dated: March 28, 2019

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**CERTIFICATION OF CHIEF EXECUTIVE OFFICER  
PURSUANT TO 18 U.S.C. SECTION 1350,  
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report on Form 20-F of voxeljet AG (the "Company") for the year ended December 31, 2018 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Dr. Ingo Ederer, Chief Executive Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ DR. INGO EDERER

Dr. Ingo Ederer

*Chief Executive Officer*

*(Principal Executive Officer)*

Dated: March 28, 2019

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**CERTIFICATION OF CHIEF FINANCIAL OFFICER  
PURSUANT TO 18 U.S.C. SECTION 1350,  
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report on Form 20-F of voxeljet AG (the "Company") for the year ended December 31, 2018 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Rudolf Franz, Chief Financial Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ RUDOLF FRANZ

Rudolf Franz

*Chief Financial Officer*

*(Principal Financial Officer)*

Dated: March 28, 2019

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**Consent of Independent Registered Public Accounting Firm**

The Supervisory Board  
voxeljet AG:

We consent to the incorporation by reference in the registration statements (No. 333-217450) on Form S-8 and (No. 333-219965) on Form F-3 of voxeljet AG of our reports dated March 28, 2019, with respect to the consolidated statements of financial position of voxeljet AG as of December 31, 2018 and 2017, the related consolidated statements of comprehensive loss, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2018, and the related notes, and the effectiveness of internal control over financial reporting as of December 31, 2018, which reports appear in the December 31, 2018 annual report on Form 20-F of voxeljet AG.

Our report dated March 28, 2019, on the effectiveness of internal control over financial reporting as of December 31, 2018, expresses our opinion that voxeljet AG did not maintain effective internal control over financial reporting as of December 31, 2018 because of the effect of material weaknesses on the achievement of the objectives of the control criteria and contains an explanatory paragraph that states the following material weaknesses have been identified:

The Company did not have an effective control environment including:

- oversight by the Supervisory Board over the processes and internal controls over the five components of the COSO 2013 Framework;
- evaluation of the competence and expertise necessary to support the growth and complexity of the business, its financial reporting, and to develop an appropriate response to address any shortcomings effectively during 2018, and sufficient number of adequately trained personnel within the organization with assigned responsibility and accountability for the conduct of internal control over financial reporting or to supervise and review the work product of third party service providers engaged to assist the Company in its general information technology controls;
- effective controls to hold personnel accountable for their internal control responsibilities through performance measurement plans and goals, and
- sufficient training to personnel on the COSO 2013 Framework and their financial reporting and related internal control responsibilities.

The Company did not have an effective risk assessment process including:

- sufficient knowledge of IFRS, and assess the application of new or modified accounting standards to its significant accounting policies and to assess the required changes to its processes and related internal controls over financial reporting;
  - an effective continuous risk assessment process to identify and assess the financial reporting risks caused by changes in the operating environment, business operations, personnel or IT systems and to make necessary changes to its financial reporting processes and related internal controls to manage those risks;
  - consideration of materiality in the determination of the significant components of the entity, significant accounts and disclosures at the entity and component level, relevant assertions over the accounts and disclosures, and the determination of risk tolerance to business process activities and the precision of related internal controls; and
  - design of control activities that are responsive to the identified fraud risks, including the risk of bias and management override of controls.
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The Company did not have effective information and communication processes and controls including:

- sufficient processes and controls in place to ensure the timely identification and communication of relevant and reliable information sourced internally and externally to financial reporting personnel, management and Supervisory Board.

The Company did not have effective monitoring activities including:

- effective controls to ascertain whether the processes and internal controls related to the five COSO 2013 Framework components (and underlying principles) were present and functioning;
- effective controls to establish recurring monitoring activities over process level controls related to routine transactions or unusual nonrecurring transactions;
- an effective, functioning internal audit group to monitor the effectiveness of internal controls
- an effective process and controls to timely process to remediate existing control deficiencies.

The Company did not have effective control activities including:

- development of adequate written policies and procedures to support the effective implementation and operation of the controls;
- effective control activities at the transaction level over certain significant accounts to mitigate the risk of material misstatement in financial reporting ;
- effective general information technology controls (GITCs) over the information technology system that supports the Company's financial reporting processes to ensure that all relevant and reliable information used in financial reporting is protected, verifiable and retained, specifically:
  - inappropriate user access controls in the SAP ERP system to ensure appropriate segregation of duties and to adequately restrict user and privileged access to appropriate personnel commensurate with their job responsibilities;
  - ineffective program change management controls, specifically the Company did not properly document the nature of the program changes, performance of testing and the approval;
- effective automated process-level controls and manual controls that are dependent upon the completeness and accuracy of information derived from IT systems;
- effective end-user computing controls over manual spreadsheets used in the financial reporting process;
- effective process-level controls activities including:

*Financial Statement Close and Reporting Process*

- Ineffective design and implementation, and operation of controls over the completeness, existence and accuracy of the financial statement close and reporting process and financial statement disclosures;
  - Ineffective design and implementation, and operation of controls over the completeness, existence, accuracy and presentation of the consolidated statements of cash flows;
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- Ineffective design and implementation, and operation of controls to ensure intercompany transactions are completely and accurately identified, reconciled, evaluated and eliminated;

*Adoption of New Accounting Standards*

- Ineffective design and implementation and operation of controls over the completeness, existence, accuracy and presentation of account balances and disclosures related to the adoption of the new accounting standards, IFRS 15, *Revenue from Contracts with Customers* , and IFRS 9, *Financial Instruments* ;

*Impairment*

- Ineffective design and implementation and operation of controls to assess the existence of impairment indicators and to perform an impairment assessment of the Company's long-lived assets in accordance with IAS 36, *Impairment of Assets* including ineffective design and implementation and operation of controls over the appropriateness of the assumptions and methodology used to measure the fair value of cash-generating units.

/s/ KPMG AG Wirtschaftsprüfungsgesellschaft

Munich, Germany  
March 28, 2019

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