voxeljet AG

INDEX TO FINANCIAL STATEMENTS

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, 2019 and 2018, 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, 2019, 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, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2019, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 2 to the consolidated financial statements, the Company has suffered recurring losses and negative cash flows from operations and has breached debt covenants as of December 31, 2019 that raise substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 2. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Change in Accounting Principle

As discussed in Note 3 to the consolidated financial statements, the Company has changed its method of accounting for leases as of January 1, 2019 due to the adoption of IFRS 16, Leases.

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 Public Company Accounting Oversight Board (United States) (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. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

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
May 7, 2020

voxeljet AG

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

	Notes	December 31, 2019	December 31, 2018 [1]
		(€ in thousands)	
Current assets		**31,513**	**37,936**
Cash and cash equivalents	3	4,368	7,402
Financial assets	3, 12	7,408	12,905
Trade receivables	3, 7	5,915	6,030
Inventories	8	12,459	10,064
Income tax receivables		39	13
Other assets		1,324	1,522
Non-current assets		**30,792**	**31,416**
Financial assets	3, 12	2,019	2,234
Intangible assets	10	1,356	1,420
Property, plant and equipment	10, 21	27,343	27,675
Investments in joint venture		30	33
Other assets		44	54
Total assets		**62,305**	**69,352**

	Notes	December 31, 2019	December 31, 2018[1]
		(€ in thousands)	
Current liabilities		**18,855**	**6,302**
Trade payables	3	2,797	2,945
Contract liabilities	3	2,623	817
Financial liabilities	3, 12, 20	11,290	850
Other liabilities and provisions	11	2,145	1,690
Non-current liabilities		**10,119**	**16,575**
Deferred tax liabilities		69	76
Financial liabilities	3, 12, 20	9,866	16,321
Other liabilities and provisions	11	184	178
Equity		**33,331**	**46,475**
Subscribed capital	24	4,836	4,836
Capital reserves	24	88,077	86,803
Accumulated deficit	3	(60,367)	(46,400)
Accumulated other comprehensive income		798	1,201
Equity attributable to the owners of the company		**33,344**	**46,440**
Non-controlling interests		**(13)**	**35**
Total equity and liabilities		**62,305**	**69,352**

See accompanying notes to these consolidated financial statements.

[1] The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Note 3 of the consolidated financial statements.

voxeljet AG

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

		Year Ended December 31,		
		2019	**2018** [1]	**2017** [1] [2] [3]
	Notes	**(€ in thousands, except share and share data)**		
Revenues	3, 18	24,602	26,009	23,178
Cost of sales	13	(17,426)	(16,864)	(13,853)
Gross profit		**7,176**	**9,145**	**9,325**
Selling expenses		(7,118)	(7,332)	(6,474)
Administrative expenses		(6,952)	(5,587)	(5,129)
Research and development expenses		(7,212)	(6,334)	(5,528)
Other operating expenses	14	(945)	(751)	(1,844)
Other operating income	14	2,143	1,297	1,001
Operating loss		**(12,908)**	**(9,562)**	**(8,649)**
Finance expense	15	(1,458)	(1,143)	(190)
Finance income	15	144	1,952	365
Financial result	15	**(1,314)**	**809**	**175**
Loss before income taxes		**(14,222)**	**(8,753)**	**(8,474)**
Income tax expense	16	(9)	(11)	(80)
Net loss		**(14,231)**	**(8,764)**	**(8,554)**
Other comprehensive income (loss) that may be reclassified subsequently to profit or loss		(403)	(179)	505
Total comprehensive loss		**(14,634)**	**(8,943)**	**(8,049)**
Loss attributable to:				
Owner of the Company		(13,967)	(8,728)	(8,538)
Non-controlling interests		(264)	(36)	(16)
		(14,231)	**(8,764)**	**(8,554)**
Total comprehensive loss attributable to:				
Owner of the Company		(14,370)	(8,907)	(8,033)
Non-controlling interests		(264)	(36)	(16)
		(14,634)	**(8,943)**	**(8,049)**
Weighted average number of ordinary shares outstanding		4,836,000	3,940,636	3,720,000
Loss per share - basic/diluted (EUR)		(2.94)	(2.21)	(2.30)

See accompanying notes to these consolidated financial statements.

[1] The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Note 3 of the consolidated financial statements.

[2] Comparative figures for the year ended December 31, 2017 were restated for immaterial errors.

[3] The Company has initially applied IFRS 15 and IFRS 9 as of January 1, 2018. Under the transition methods chosen, comparative information has not been restated.

voxeljet AG

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

(€ in thousands)

	Attributable to the owners of the company						
	Subscribed capital	**Capital reserves**	**Accumulated deficit**	**Accumulated other comprehensive gain (loss)**	**Total**	**Non-controlling interests**	**Total equity**
Balance at January 1, 2017	**3,720**	**75,827**	**(28,971)**	**873**	**51,449**	**87**	**51,536**
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**
Balance at December 31, 2017 (1) (2) (3)	**3,720**	**76,227**	**(37,509)**	**1,380**	**43,818**	**71**	**43,889**
Adjustment on initial application of IFRS 15	--	--	**(100)**	--	**(100)**		**(100)**
Adjustment on initial application of IFRS 9	--		**(63)**		**(63)**		**(63)**
Adjusted balance at January 1, 2018	**3,720**	**76,227**	**(37,672)**	**1,380**	**43,655**	**71**	**43,726**
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**
Equity-settled share-based payment	--	604	--	--	**604**	--	**604**
Balance at December 31, 2018 (1)	**4,836**	**86,803**	**(46,400)**	**1,201**	**46,440**	**35**	**46,475**
Loss for the period	--	--	(13,967)	--	**(13,967)**	(264)	**(14,231)**
Net changes in fair value of debt investments at FVOCI	--	--	--	174	**174**	--	**174**
Foreign currency translations	--	--	--	(577)	**(577)**	--	**(577)**
Equity-settled share-based payment	--	671	--	--	**671**	--	**671**
Share-based payment transaction with the non-controlling shareholder of a subsidiary	--	603	--	--	**603**	216	**819**
Balance at December 31, 2019	**4,836**	**88,077**	**(60,367)**	**798**	**33,344**	**(13)**	**33,331**

See accompanying notes to these consolidated financial statements.

(1) The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Note 3 of the consolidated financial statements.

(2) Comparative figures for the year ended December 31, 2017 were restated for immaterial errors.

(3) The Company has initially applied IFRS 15 and IFRS 9 as of January 1, 2018. Under the transition methods chosen, comparative information has not been restated.

voxeljet AG

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2019	2018 [1]	2017 [1] [2] [3]
	(€ in thousands)		
Cash Flow from operating activities			
Loss for the period	**(14,231)**	**(8,764)**	**(8,554)**
Depreciation and amortization	4,211	3,506	3,163
Foreign currency exchange differences on loans to subsidiaries	(828)	(340)	1,056
Share-based compensation expense	671	604	386
Change in impairment of trade receivables	15	227	237
Non-cash expense on financial liabilities	874	781	17
Change in fair value of derivative equity forward	215	(1,877)	(352)
Change in inventory allowance	(21)	(417)	(515)
Loss on disposal of property, plant and equipment	354	--	--
Other	60	68	105
Change in working capital	**1,861**	**(1,502)**	**(2,373)**
Trade and other receivables, inventories and current assets	(757)	(1,556)	(2,697)
Trade payables	358	(310)	629
Other liabilities, contract liabilities and provisions	2,286	375	(310)
Income tax payable/receivables	(26)	(11)	5
Total	**(6,819)**	**(7,714)**	**(6,830)**
Cash Flow from investing activities			
Payments to acquire property, plant and equipment and intangible assets	(1,100)	(3,812)	(3,626)
Proceeds from disposal of financial assets	8,373	10,475	4,077
Payments to acquire financial assets	(2,725)	(8,690)	(5,542)
Other	--	--	156
Total	**4,548**	**(2,027)**	**(4,935)**
Cash Flow from financing activities			
Repayment of bank overdrafts and lines of credit	--	(58)	(167)
Repayment of sale and leaseback obligation	--	(324)	(383)
Repayment of lease liabilities (2018 and 2017: Repayment of finance lease obligations)	(397)	(37)	(51)
Repayment of long-term debt	(969)	(2,764)	(732)
Proceeds from issuance of long-term debt	529	1,639	12,612
Proceeds from issuance of shares	--	11,088	--
Total	**(837)**	**9,544**	**11,279**
Net increase (decrease) in cash and cash equivalents	**(3,108)**	**(197)**	**(486)**
Cash and cash equivalents at beginning of period	**7,402**	**7,569**	**7,849**
Changes to cash and equivalents due to foreign exchanges rates	**74**	**30**	**206**
Cash and cash equivalents at end of period	**4,368**	**7,402**	**7,569**
Supplemental Cash Flow Information			
Interest paid	320	231	210
Interest received	93	42	16
Property, plant and equipment added under finance lease	--	--	123

See accompanying notes to these consolidated financial statements.

[1] The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Note 3 of the consolidated financial statements.

[2] Comparative figures for the year ended December 31, 2017 were restated for immaterial errors.

[3] The Company has initially applied IFRS 15 and IFRS 9 as of January 1, 2018. Under the transition methods chosen, comparative information has not been restated.

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 70.00% 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 May 7, 2020.

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.

Going concern

The financial statements have been prepared on the basis of going concern which contemplates continuity of normal business activities and the realization of assets and settlement of liabilities in the ordinary course of business.

voxeljet has recognized continuous net losses during 2019, 2018 and 2017 amounting to kEUR 14,231, kEUR 8,764 and kEUR 8,554, respectively. Additionally, voxeljet had negative cash flows from operating activities in 2019, 2018 and 2017 of kEUR 6,819, kEUR 7,714 and kEUR 6,830, respectively, mainly due to continuous net losses.

Due to the global outbreak of a new strain of coronavirus ("COVID-19"), we may experience further loss in the coming years. It is possible that the continued spread of COVID-19 will further cause disruption in our supply chain; cause delay, or limit the ability of customers to make timely payments to us; impact investment performance; and cause other unpredictable events. We may be unable to perform fully on our contracts, which will likely result in increases in costs and reduction in revenue. Moreover, in recent months, the continued spread of COVID-19 has led to disruption and volatility in the global capital markets, which increases the cost of capital and adversely impacts access to capital. In particular voxeljet anticipates customer payment delays for 3D printers sold in the fourth quarter 2019 which could negatively impact our results of operations, however we do not expect defaults. In addition, management expects decline in revenues for the Services segment and service and maintenance business of the Systems segment mainly during the second quarter of 2020. Also, voxeljet expects some delays in installation of 3D printers at customers' facilities, which could lead to postponed revenue recognition for those transactions. If we experience difficulty in generating sufficient cash flow to meet our obligations and sustain our operations, which raises material uncertainties that cast significant doubt about our ability to continue as a going concern, we may have difficulties accessing government and state aid.

voxeljet has also entered into a number of loan agreements, mainly to finance its operations. The Company had a significant loan balance of kEUR 17,546 as of December 31, 2019 and kEUR 17,065 as of December 31, 2018. The Company had total cash and cash equivalents and short-term investments of kEUR 11,776 as of December 31, 2019 and kEUR 20,307 as of December 31, 2018, thereof restricted cash and short-term investments of kEUR 2,463 as of December 31, 2019 and kEUR 0 as of December 31, 2018.

The Company has breached its Total Net Financial Debt to EBITDA ratio financial covenant under the Finance Contract with the European Investment Bank ("EIB") as of June 30, September 30, and December 31, 2019, under which the Company has to comply with certain minimum thresholds. As a result of the breach, the Company has reclassified the loan of kEUR 10,000 from a non-current liability to a current liability as of December 31, 2019.

These events and conditions raise material uncertainties that may cast significant doubt upon voxeljet's ability to continue as a going concern.

After negotiations with the EIB; which started in July 2019, in March 2020, voxeljet received a waiver for the covenant breach in 2019 and also a grace period until March 31, 2021, for which voxeljet can rectify the breach and during which the EIB cannot demand immediate repayment. Before EIB issued such waiver, the Company registered a first rank land charge amounting to kEUR 10,000 on its land and facility located in Friedberg, Germany as collateral in favor of the EIB in March 2020.

Management is also taking steps to raise further funds including debt and equity financing. Management is in ongoing discussions with potential investors in Europe, America and Asia.

In addition, management has decided to restructure the voxeljet UK entity in order to consolidate 3D printing to serve all customers in Europe from the German service center. This will help to reduce overall costs and will lead to improved gross profit margins by realizing economies of scale in the German service center.

Further, management initiated a restructuring program at the German entity during the fourth quarter of 2019. This program includes the reduction of headcount mainly in the Systems segment in order to streamline the Company's operations and optimize efficiency. For further information, see Note 9 to the consolidated financial statements.

Despite the ongoing losses, reduced cash flow and cash facilities, and the other negative financial conditions, management assumes that voxeljet will continue as a going concern. However, while management assumes of continuing as a going concern, the going concern is dependent upon management and the Company being successful in:

- successful negotiations with the EIB over (i) an amendment to the Leverage Covenant under the Finance Contract and (ii) the draw down of tranche B;
- availability of credit lines for advance payment guarantees or letters of credit to support export systems sales;
- achievement of budgeted sales;
- achievement of cost reduction targets; and
- managing the COVID-19 impact to contain it to the magnitude included in the current liquidity forecast

Based on the approved budget for FY 2020, the current two-year liquidity forecast, which includes our best estimate of the COVID-19 impacts as described above, in combination with a strong order intake as of March 31, 2020, the Waiver and the grace period the Company received from the EIB support our operations. The order backlog for the sale of 3D printers as of March 31, 2020 amounts to kEUR 8,377. Most of these orders are expected to be fulfilled in the next 12 months.

As a result, the viability of the Company is dependent on the above matters, which give rise to material uncertainties that may cast significant doubt about the Company's ability to continue as a going concern. However, management believes that the Company will be successful in the above matters and, accordingly, have prepared the financial statements on a going concern basis.

3. Summary of significant accounting policies

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

The Group has initially adopted IFRS 16, *Leases* on January 1, 2019. A number of other new standards are effective from January 1, 2019 but these do not have a material effect on the Company's consolidated financial statements.

Due to the transition methods chosen by the Group in applying these standard, 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

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.

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 and continues to 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 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 control of ownership to the customers, generally upon shipment.

Revenue on the sale of customized printed products is recognized at the point in time when the control 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 not considered as a separate performance obligation. 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, requires advance payments prior to shipment. On the sale of new or refurbished 3D printers, the Company generally require advance payments prior to shipment and requires 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.

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.

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 € 3.8 million. The Company expects to realize approximately 59% of such amount in 2020 and the remainder in 2021. The amount of kEUR 584 included in contract liabilities at December 31, 2018 has been recognized as revenue in 2019 (2018: kEUR 507).

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 18).

	Year ended December 31,			
	SYSTEMS		SERVICES	
	2019	2018	2019	2018
Primary geographical markets				
EMEA	4,951	5,592	6,314	9,081
Asia Pacific	5,371	4,704	931	746
Americas	3,132	1,952	3,903	3,934
	13,454	12,248	11,148	13,761
Timing of revenue recognition				
Products transferred at a point in time	12,332	11,188	11,148	13,761
Products and services transferred over time	1,122	1,060	--	--
Revenue from contracts with customers	13,454	12,248	11,148	13,761

In 2019, voxeljet leased two 3D printers (2018: two 3D printers and 2017: one 3D printer) 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

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 replaced 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 accounting policies under IFRS 9 and the nature and effect of the changes to previous accounting policies are set out below.

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 funds 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 incurred.

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.

Impact of the 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 following tables provide information about the exposure to credit risk and ECLs for trade receivables as of December 31, 2019 and 2018, respectively. This was calculated after a specific assessment of the trade receivables and after recording a specific debt allowance.

December 31, 2019

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%	2,400	4	2,396
Grades 5-7:	Fair risk	B+ to BBB	1.3%	3,132	42	3,090
Grades 8-9:	Substandard	CCC- to B	7.0%	233	16	217
Grade 10:	Doubtful	C to CC	25.0%	283	71	212
Grade 11:	Loss	D	100.0%	--	--	--
				6,048	**133**	**5,915**

December 31, 2018

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	--
				6,187	**157**	**6,030**

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.

Leases

The Group has initially adopted IFRS 16 Leases from January 1, 2019. IFRS 16 introduced a single, on-balance sheet accounting model for lessees. As a result, the Group, as a lessee, has recognized right-of-use assets representing its rights to use the underlying assets and lease liabilities representing its obligation to make lease payments. Lessor accounting remains similar to previous accounting policies.

The Group has applied IFRS 16 using the modified retrospective approach, under which the cumulative effect of initial application is recognized in retained earnings as of January 1, 2019. Accordingly, the comparative information presented for 2018 has not been restated and is therefore presented as previously reported, under IAS 17 and related interpretations. The details of changes in accounting are disclosed below. Additionally, the disclosure requirements in IFRS 16 have not generally been applied to the comparative information.

Definition of a lease

Previously, the Company determined at contract inception whether an arrangement was or contained a lease under IFRIC 4 Determining Whether an Arrangement contains a Lease. The Company now assesses whether a contract is or contains a lease based on the new definition of a lease. Under IFRS 16, a contract is, or contains, a lease if the contract conveys a right to control the use of an identified asset for a period of time in exchange for consideration.

On transition to IFRS 16, the Company elected to apply the practical expedient to grandfather the assessment of which transactions are leases. It applies IFRS 16 only to contracts that were previously identified as leases. Contracts that were not identified as leases under IAS 17 and IFRIC 4 were not reassessed. Therefore, the definition of a lease under IFRS 16 has been applied only to contracts entered into or changed on or after January 1, 2019.

At inception or on reassessment of a contract that contains a lease component, the Company allocates the consideration in the contract to each lease and non-lease component on the basis of their relative stand-alone prices.

The Company as a lessee

The Company leases assets, including properties, production equipment and vehicles. As a lessee, the Company previously classified leases as operating or finance leases based on its assessment of whether the lease transferred substantially all of the risks and rewards of ownership. Under IFRS 16, the Company recognizes right-of-use assets and lease liabilities for most leases. These leases are on-balance sheet.

However, the Company has elected not to recognize right-of-use assets and lease liabilities for some leases of low-value assets (e.g. tools) as well as short-term leases (leases with less than 12 months of lease term). The Company recognizes the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

The Company presents right-of-use assets in "property, plant and equipment", in the same line item as it presents underlying assets of the same nature that it owns. The carrying amounts of right-of-use assets are as below:

	Property, plant and equipment			
	Property	**Production equipment**	**Others**	**Total**
		(€ in thousands)		
Balance at January 1, 2019	3,109	112	280	**3,501**
Balance at December 31, 2019	3,658	72	254	**3,984**

The Company presents lease liabilities within "financial liabilities" in the condensed consolidated statements of financial position.

Leases under IFRS 16

The Company recognizes a right-of-use asset and a lease liability at the lease commencement date. The right-of-use asset is initially measured at an amount equal to the lease liability, and subsequently at cost less any accumulated depreciation and impairment losses, and adjusted for certain remeasurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the Company's incremental borrowing rate.

The lease liability is subsequently measured at amortized cost using the effective interest method. It is remeasured when there is a change in the future lease payments arising from a change in an index or rate, a change in the estimate of the amount expected to be payable under a residual value guarantee, or as appropriate, changes in the assessment of whether it will exercise a purchase, extension or termination option.

The Company has applied judgement to determine the lease term for some lease contracts in which it is a lessee that include renewal options. The assessment of whether the Company is reasonably certain to exercise such options impacts the lease term, which significantly affects the amount of lease liabilities and right-of-use assets recognized.

Transition

Previously, the Company classified property plant and equipment leases as operating leases under IAS 17. These include manufacturing facilities. The leases typically run for a period of three to ten years. Some leases include an option to renew the lease for an additional three to five years after the end of the non-cancelable period.

At transition, for leases classified as operating leases under IAS 17, lease liabilities were measured at the present value of the remaining lease payments, discounted at the Company's incremental borrowing rates for similar assets as of January 1, 2019. Right-of-use assets are measured at an amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments.

The Company used the following practical expedients when applying IFRS 16 to leases previously classified as operating leases under IAS 17:

- Applied a single discount rate to a portfolio of leases with reasonably similar characteristics.
- Applied the exemption not to recognize right-of-use assets and liabilities for leases with less than 12 months of lease term.
- Used hindsight when determining the lease term if the contract contains options to extend or terminate the lease.

The Company leases a small number of items of production equipment. These leases were classified as finance leases under IAS 17. For these finance leases, the carrying amount of the right-of-use asset and the lease liability at January 1, 2019 were determined at the carrying amount of the lease asset and lease liability under IAS 17 immediately before that date.

The Company as a lessor

The Company leases out a small number of 3D printers. Those leases have been classified as operating leases.

The accounting policies applicable to the Company as a lessor are not different from those under IAS 17.

The Company is not required to make any adjustments on transition to IFRS 16 for leases in which it acts as a lessor.

Impacts on financial statements

Impacts on transition

On transition to IFRS 16, the Company recognized additional right-of-use assets, including property, plant and equipment and additional lease liabilities. The impact on transition is summarized below.

	Impact on adopting IFRS 16 at January 1, 2019 (€ in thousands)
Right-of-use assets presented in property plant and equipment	3,501
Lease liabilities as presented in financial liabilities	3,574

When measuring lease liabilities for leases that were classified as operating lease, the Company discounted lease payments using its incremental borrowing rates as of January 1, 2019. The weighted-average rate applied is 4.55%.

	January 1, 2019 (€ in thousands)
Operating lease commitment at December 31, 2018, as disclosed in the Group's consolidated financial statements	2,584
Discounted using the incremental borrowing rate at January 1, 2019	2,021
Finance lease liability recognized as at December 31, 2018	105
Recognition exemption for leases with less than 12 months of lease term at transition	(84)
Extension options reasonably certain to be exercised	1,532
Lease liabilities recognized at January 1, 2019	3,574

Impacts for the period

As a result of initially applying IFRS 16, in relation to the leases that were previously classified as operating leases, the Company recognized kEUR 3,984 of right-of-use assets and kEUR 3,610 of lease liabilities as of December 31, 2019.

Also in relation to those leases under IFRS 16, the Company has recognized depreciation and interest costs, instead of operating lease expenses. During the twelve months ended December 31, 2019, the Company recognized kEUR 765 of depreciation expenses and kEUR 190 of interest expense from these leases.

Within the statement of cash flows, cash payments for the principal portion of lease payments, as well as for the interest portion, have been classified as financing activities. Payments for short-term leases have been classified as operating activities.

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.

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
2019	1.1195	0.8778	78.8361	7.7355
2018	1.1810	0.8847	80.7332	7.8081
2017	1.1297	0.8767	73.5324	7.6290

Year end exchange rates to Euro

December 31,	Year End Rate			
	USD	GBP	INR	CNY
2019	1.1234	0.8508	80.1870	7.8205
2018	1.1450	0.8945	79.7298	7.8751

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.

Current tax comprises the expected tax payable or receivable on the taxable income or loss for the year and any adjustment to the tax payable or receivable in respect of previous years. The amount of the current tax payable or receivable is the best estimate of the tax amount to be paid or received that reflects uncertainty related to income tax, if any. It is measured using tax rates enacted or substantively enacted at the reporting date.

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 or the research and development function) 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. In those cases the assets are depreciated over their useful lives. Repair and maintenance expenditures are expensed as incurred. 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, if they change significantly, depreciation charges for current and future periods are adjusted accordingly.

Inventories

Raw materials and merchandise

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

Work in progress is 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.

	2019	2018
	(in thousands of shares)	
Issued ordinary shares at 1 January	**4,836**	**3,720**
Effect of shares issued on October 17, 2018	--	192
Effect of shares issued on November 8, 2018	--	29
Weighted-average number of ordinary shares at 31 December	**4,836**	**3,941**

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, 2019.

Others	01/2020	Amendments to References to the Conceptual Framework in IFRS Standards
IFRS 3	01/2020	Definition of a Business (Amendments to IFRS 3)
IAS 1, IAS 8	01/2020	Definition of Material (Amendments to IAS 1 and IAS 8)
IFRS 9, IAS 39 and IFRS 7	01/2020	Interest Rate Benchmark Reform (Amendments to IFRS 9, IAS 39 and IFRS 7)
IFRS 17	01/2021	Insurance Contracts
IAS 1	01/2022	Classifications of Liabilities as Current or Non-Current (Amendment to IAS 1)
IFRS 10, IAS 28	indefinite	Amendment Sale or Contribution of Assets between Investor and its Associate or Joint Venture

The Company has not yet determined what impact the new standards, amendments or interpretations will have on the financial statements.

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 assessment of the Company of the ability to continue as a going concern (see further discussion in Note 2), recognition of revenue, and the consideration of the renewal options of the lease contracts in determining the appropriate lease terms.

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 fiscal 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 and have been estimated by the Company's service department based on historical experience.

Lease term as a lessee

The Company leases certain property leases which contain extension options exercisable by the Company after the end of the non-cancellable contract period. The extension options held are exercisable only by the Company and not by the lessors. The Company assesses at lease commencement date whether it is reasonably certain to exercise the extension options. The Company reassesses whether it is reasonably certain to exercise the options if there is a significant event or significant changes in circumstances within its control.

6. Share based payment arrangements

Share option plan

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:

	Tranche 1	Tranche 2
Parameter		
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

	December 31,			
	2019		2018	
	Number of options	Weighted-average exercise price (USD)	Number of options	Weighted-average exercise price (USD)
Outstanding at January 1	353,400	14.46	279,000	13.90
Granted during the year	--	--	93,000	16.15
Exercised during the year	--	--	--	--
Forfeited during the year	--	--	(18,600)	14.46
Outstanding at December 31	353,400	14.46	353,400	14.46
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, 2019 no options are exercisable and 353,400 options are outstanding. The weighted-average contractual life of the options at December 31, 2019 amounts to 7.5 years (December 31, 2018: 8.5 years).

The expense recognized in the statement of comprehensive loss totaled kEUR 671, kEUR 604 and kEUR 386 for the years ended December 31, 2019, 2018 and 2017, respectively.

Increase of minority shareholding of voxeljet China

On March 1, 2019, voxeljet China moved into a new facility. The minority shareholder of voxeljet China has increased its shareholding in the entity from 4.175% to 30% through an in-kind capital contribution of a lease contract on the new facility. The lease term under IFRS 16 of the contract is six years, including a rent-free period during the first three years. The transaction is accounted for as a share-based payment transaction under IFRS 2 and resulted in an increase of non-controlling interest of kEUR 216 and capital reserves of kEUR 604. The Company also recorded a right-of-use asset of kEUR 813 and the corresponding lease liability on the commencement date of the lease. The fair value of the lease contract was measured based on the market observable lease payment of comparable properties in close proximity from the voxeljet China facility.

7. Trade receivables

Credit terms provided to customers are determined individually and are dependent on already existing customer relationships and the customer's payment history.

Change in the allowance for doubtful accounts

	Year Ended December 31,	
	2019	2018
	(€ in thousands)	
Balance at beginning of period	**383**	**545**
Provisions	38	227
Write-offs	(102)	(351)
Release to income	(132)	(38)
Balance at end of period	**187**	**383**

8. Inventories

Inventories consisted of the following for the years reported:

INVENTORIES BY CATEGORY

	December 31,	
	2019	2018
	(€ in thousands)	
Raw materials and merchandise	4,109	4,628
Work in progress	8,350	5,436
Total	**12,459**	**10,064**

The reserve for slow-moving inventory regarding work in progress was kEUR 1 and kEUR 22 in 2019 and 2018, respectively.

9. Restructuring

voxeljet AG

At the end of 2019, a provision of kEUR 453 was made to cover the costs associated with a restructuring program announced by Management in November 2019 for the German operation. This program includes the reduction of headcount mainly in production in order to adjust the capacity but also in further functions. Estimated restructuring costs mainly include employee termination benefits based on a voluntary program which has started on February 17, 2020. This program has been agreed with the workers' council in a company agreement. On April 16, 2020, the voluntary program expired with the result that the desired reduction in headcount has been completely achieved through the voluntary program, and therefore the cost saving targets have been fully implemented.

Line items in statement of comprehensive loss / Components of restructuring charges	Twelve months ended December 31, 2019 (€ in thousands)
Cost of sales	**302**
Employee termination costs	302
Selling expenses	**77**
Employee termination costs	77
Administrative expenses	**45**
Employee termination costs	45
Research and development expenses	**29**
Employee termination costs	29
Impact of restructuring	**453**

voxeljet UK

The Company decided to consolidate 3D printing to serve all customers in Europe from the German service center and restructure the voxeljet UK entity. The restructuring includes reduction in headcount and disposal of certain assets. Consequently the lease of the Milton Keynes facility has been early-terminated and will end at the end of May 2020.

Line items in statement of comprehensive loss / Components of restructuring charges	Twelve months ended December 31, 2019 (€ in thousands)
Cost of sales	**312**
Loss on disposal of assets	226
Employee termination costs	67
Impairment of Inventories	19
Selling expenses	**42**
Loss on disposal of assets	20
Employee termination costs	16
Write-off right-of-use asset	6
Administrative expenses	**274**
Loss on disposal of assets	81
Employee termination costs	35
Lease maintenance costs	100
Settlement of agreements	14
Legal Consulting	25
Write-off right-of-use asset	19
Impact of restructuring	**628**

10. Intangible assets and property, plant and equipment

Intangible assets

	December 31, 2019	2018
	(€ in thousands)	
Software	611	787
Licenses	83	109
Prepayments made on intangible assets	662	524
Total	**1,356**	**1,420**

The increase in prepayments made on intangible assets is due to capitalized customizing cost in connection with our ERP system. The decrease related to software is related to the scheduled amortization partially offset by additions.

Property, plant and equipment

	December 31, 2019	2018 [1]
	(€ in thousands)	
Land, buildings and leasehold improvements	20,045	17,085
Plant and machinery (2018 includes assets under finance lease)	5,779	9,072
Other facilities, factory and office equipment	1,459	1,502
Assets under construction and prepayments made	60	16
Total	**27,343**	**27,675**
Thereof pledged assets of Property, Plant and Equipment	6,618	6,691
Leased assets included in Property, Plant and Equipment:	**--**	**357**
Printers leased to customers under operating lease	--	208
Other factory equipment	--	149

[1] The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Note 3 of the consolidated financial statements.

The pledged assets consist of the new office building and the new production hall, which were completed in 2017, as well as eight (in 2018: six) 3D printers that serve as collateral for certain credit lines and loan agreements. In March 2020, voxeljet pledged land and facilities located in Friedberg, Germany in favor of the EIB. For further information, see Note 19 and Note 25.

Amounts added to plant and machinery relating to self-constructed 3D printers are considered non-cash transactions, which totaled to kEUR 883 and kEUR 2,531 in the years ended December 31, 2019 and 2018, respectively.

Table of Contents

The following table presents the composition of, and annual movement in, intangible assets and property, plant and equipment for the years 2019 and 2018, respectively:

2019

(€ in thousands)

	Acquisition and manufacturing cost									Accumulated depreciation and amortization						Carrying amount
	01/01/2019 [1]	Recognition of right-of-use asset on initial application of IFRS 16	Adjusted balance at 01/01/2019	Additions	Disposals	Revaluation	Transfer	FX	12/31/2019	01/01/2019	Current year	Disposals	Transfer	FX	12/31/2019	12/31/2019
Intangible assets																
Software	1,446	--	1,446	94	--	--	10	1	1,551	659	280	--	--	1	940	611
Licenses	245	--	245	--	--	--	--	--	245	136	26	--	--	--	162	83
Prepayments made on intangible assets	524	--	524	148	--	--	(10)	--	662	--	--	--	--	--	--	662
Total	**2,215**	**--**	**2,215**	**242**	**--**	**--**	**--**	**1**	**2,458**	**795**	**306**	**--**	**--**	**1**	**1,102**	**1,356**
Property, plant and equipment																
Land, buildings and leasehold improvements	18,909	3,109	22,018	1,651	369	(534)	--	119	22,885	1,824	1,095	83	--	4	2,840	20,045
Plant and machinery	19,211	112	19,323	1,194	6,769	(1)	40	245	14,032	10,164	2,198	4,162	13	40	8,253	5,779
Other facilities, factory and office equipment	3,801	280	4,081	449	411	(1)	--	24	4,142	2,423	608	356	--	8	2,683	1,459
Assets under construction and prepayments made	16	--	16	59	16	--	--	1	60	--	--	--	--	--	--	60
Subtotal	**41,937**	**3,501**	**45,438**	**3,353**	**7,565**	**(536)**	**40**	**389**	**41,119**	**14,411**	**3,901**	**4,601**	**13**	**51**	**13,776**	**27,343**
Leased products	**203**	**--**	**203**	**--**	**41**	**--**	**(163)**	**1**	**--**	**54**	**4**	**18**	**(40)**	**--**	**--**	**--**
Total	**42,140**	**3,501**	**45,641**	**3,353**	**7,606**	**(536)**	**(123)**	**390**	**41,119**	**14,465**	**3,905**	**4,619**	**(27)**	**51**	**13,776**	**27,343**

2018

(€ in thousands)

	Acquisition and manufacturing cost						Accumulated depreciation and amortization						Carrying amount
	01/01/2018	Additions	Disposals	Transfer	FX	12/31/2018	01/01/2018	Current year	Disposals	Transfer	FX	12/31/2018	12/31/2018 [1]
Intangible assets													
Software	1,004	230	--	211	1	1,446	431	228	--	--	--	659	787
Licenses	245	--	--	--	--	245	109	27	--	--	--	136	109
Prepayments made on intangible assets	402	333	--	(211)	--	524	--	--	--	--	--	--	524
Total	**1,651**	**563**	**--**	**--**	**1**	**2,215**	**540**	**255**	**--**	**--**	**--**	**795**	**1,420**
Property, plant and equipment													
Land, buildings and leasehold improvements	18,703	152	--	--	54	18,909	1,288	533	--	--	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	--	7	3,801	2,005	427	12	--	3	2,423	1,378
Assets under construction and prepayments made	8	17	--	(9)	--	16	--	--	--	--	--	--	16
Subtotal	**38,523**	**4,334**	**2,983**	**1,900**	**163**	**41,937**	**11,358**	**3,088**	**1,506**	**1,425**	**46**	**14,411**	**27,526**
Leased products	**2,098**	**2**	**--**	**(1,900)**	**3**	**203**	**1,314**	**163**	**--**	**(1,425)**	**2**	**54**	**149**
Total	**40,621**	**4,336**	**2,983**	**--**	**166**	**42,140**	**12,672**	**3,251**	**1,506**	**--**	**48**	**14,465**	**27,675**

[1] The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Note 3 of the consolidated financial statements.

Table of Contents

11. Other liabilities and provisions

	December 31,	
	2019	2018
	(€ in thousands)	
Liabilities from VAT	32	24
Employee bonus	397	413
Accruals for vacation and overtime	190	210
Accruals for licenses	62	69
Liabilities from payroll	301	298
Accruals for commissions	38	47
Accruals for compensation of Supervisory board	180	180
Accrual for warranty	241	240
Accrual for restructuring	604	--
Others	284	387
Total	**2,329**	**1,868**

The accruals for restructuring amounting to kEUR 604 relate to voxeljet AG (kEUR 453) and voxeljet UK (kEUR 151). For further information, see Note 9 of the consolidated financial statements.

	(€ in thousands)				
	January 1, 2019	Usage	Addition	Reversal	December 31, 2019
Accrual for warranty	240	(240)	241	--	241

The Group expects to settle the majority of the other liabilities and provisions over the next year.

12. 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: Inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices).
- 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

Further, for the current year the fair value disclosure of lease liabilities is not required.

Trade receivables and trade payables classified as held-for-sale are included in the table below. Their carrying amount is a reasonable approximation of the fair value.

The following table shows the carrying amounts and fair values of financial assets and financial liabilities, including their levels in the fair value hierarchy.

	Carrying amount					Fair Value			
12/31/2019	**FVTPL**	**FVOCI**	**Assets at amortized cost**	**Liabilities at amortized cost**	**Total carrying amount**	**Level 1**	**Level 2**	**Level 3**	**Total**
Financial assets measured at fair value									
Non-current assets									
Derivative financial instruments	2,014	--	--	--	2,014	--	2,014	--	2,014
Equity securities	--	5	--	--	5	--	--	5	5
Current assets									
Bond funds	--	3,667	--	--	3,667	3,667	--	--	3,667
Bond funds (restricted)	--	2,000	--	--	2,000	2,000	--	--	2,000
Note receivable	--	1,278	--	--	1,278	1,278	--	--	1,278
Financial assets not measured at fair value									
Current assets									
Cash and cash equivalents	--	--	4,368	--	4,368	4,368	--	--	4,368
Restricted Cash	--	--	463	--	463	463	--	--	463
Trade and other receivables	--	--	5,915	--	5,915	--	--	--	--
Financial liabilities not measured at fair value									
Non-current liabilities									
Long-term debt	--	--	--	6,682	6,682	--	6,148	--	6,148
Current liabilities									
Long-term debt	--	--	--	10,864	10,864	--	10,858	--	10,858
Trade payables	--	--	--	2,797	2,797	--	--	--	--

Table of Contents

12/31/2018	Carrying amount					Fair Value			
	FVTPL	FVOCI	Assets at amortized cost	Liabilities at amortized cost	Total carrying amount	Level 1	Level 2	Level 3	Total
Financial assets measured at fair value									
Non-current assets									
Derivative financial instruments	2,229	--	--	--	2,229	--	2,229	--	2,229
Equity securities	--	5	--	--	5	--	--	5	5
Current assets									
Bond funds	--	12,905	--	--	12,905	12,905	--	--	12,905
Financial assets not measured at fair value									
Current assets									
Cash and cash equivalents	--	--	7,402	--	7,402	7,402	--		7,402
Trade and other receivables	--	--	6,030	--	6,030	--	--	--	--
Financial liabilities not measured at fair value									
Non-current liabilities									
Long-term debt	--	--	--	16,250	16,250	--	15,231	--	15,231
Finance lease obligation	--	--	--	71	71	--	69	--	69
Current liabilities									
Long-term debt	--	--	--	816	816	--	809	--	809
Finance lease obligation	--	--	--	34	34	--	34	--	34
Trade payables	--	--	--	2,945	2,945	--	--	--	--

The financial assets with a carrying amount of kEUR 9,427 reported on the Company’s statement of financial position at December 31, 2019 were comprised of investments in four bond funds (kEUR 5,667, thereof kEUR 2,000 restricted), one note receivable (kEUR 1,278) and restricted cash (kEUR 463), all reported as current financial assets, an equity forward (kEUR 2,014) and equity securities (kEUR 5) reported as a noncurrent asset.

The financial assets with a carrying amount of kEUR 15,139 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 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.

13. 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,		
	2019	2018 [(1)]	2017 [(2)]
	(€ in thousands)		
Personnel expenses	(5,583)	(5,404)	(4,344)
Material costs	(6,796)	(7,082)	(6,443)
Depreciation	(2,686)	(2,197)	(2,071)
Other expenses	(2,382)	(2,598)	(1,510)
Allowance for slow-moving inventory	21	417	515
Total	**(17,426)**	**(16,864)**	**(13,853)**

[(1)] The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Note 3 of the consolidated financial statements.

[(2)] Comparative figures for the year ended December 31, 2017 were restated for immaterial errors.

In 2019, other expenses primarily consisted of cost of maintenance (kEUR 535), travel expenses (kEUR 312), expenses related to insurances (kEUR 269) rental and building expenses (kEUR 149) and license fees (kEUR 57).

In 2018, other expenses primarily consisted of rental and building expenses (kEUR 491), travel expenses (kEUR 294) and license fees (kEUR 92).

In 2017, other expenses primarily consisted of license fees (kEUR 404), rental and building expenses (kEUR 463) and travel expenses (kEUR 296).

14. 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,		
	2019	2018	2017
	(€ in thousands)		
Government grant income	21	11	120
Amortization of gain on sale and leaseback transactions	--	119	206
Reimbursement of transaction costs	127	121	254
Gains from foreign exchange transactions	1,657	794	135
Other	338	252	286
Total	**2,143**	**1,297**	**1,001**

Other operating income includes an amount of kEUR 132 (2018: kEUR 38, 2017: kEUR 33) for the movement of impairment on trade receivables.

OTHER OPERATING EXPENSE

	Year Ended December 31,		
	2019	2018	2017
	(€ in thousands)		
Impairment loss on trade receivables	60	224	240
Losses from foreign exchange transactions	880	511	1,585
Other	5	16	19
Total	**945**	**751**	**1,844**

15. Financial result

The details of financial result are presented for the years reported in the table below:

	Year Ended December 31,		
	2019	2018	2017
	(€ in thousands)		
Interest expense	**(1,458)**	**(1,143)**	**(190)**
Interest expense on lease liability (2018: Finance lease obligations)	(190)	(69)	(45)
Long-term debt	(993)	(944)	(100)
Expense from revaluation of derivative financial instruments	(215)	--	--
Other	(60)	(130)	(45)
Interest income	**144**	**1,952**	**365**
Payout of bond funds	126	58	11
Income from revaluation of derivative financial instruments	--	1,877	352
Other	18	17	2
Financial result	**(1,314)**	**809**	**175**

16. Income taxes

Income taxes consist of the following for the years reported:

Income tax (expense) benefit

	Year Ended December 31,		
	2019	2018	2017
	(€ in thousands)		
Current tax expense	--	--	--
Deferred tax (expense) benefit	(9)	(11)	(80)
Total	(9)	(11)	(80)

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, 2019		2018	
	(€ in thousands)			
	Deferred tax assets	Deferred tax liabilities	Deferred tax assets	Deferred tax liabilities
Trade receivables	--	(8)	1	(18)
Other receivables and current assets	1,050	(118)	959	(62)
Inventories	11	--	22	(10)
Property, Plant & Equipment	99	(603)	329	(85)
Trade liabilities	206	--	231	--
Current financial liabilities	1,020	(110)	209	--
Current financial assets	--	(710)	3	(624)
Other current liabilities and provisions	19	(887)	204	(729)
Contract liabilities	247	(247)	17	(141)
Non-current financial liabilities	--	--	--	(76)
Intangible assets	--	(1)	--	(1)
Tax losses carried forward	227	--	113	--
Valuation allowance	(265)	--	(418)	--
Tax assets (liabilities)	2,615	(2,684)	1,670	(1,746)
Set off of tax	(2,615)	2,615	(1,670)	1,670
Net tax	**--**	**(69)**	**--**	**(76)**

At December 31, 2019 voxeljet had gross loss carry-forwards for corporation tax and trade tax losses of kEUR 37,988 and kEUR 37,222, 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 17,357, 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, 2019	2018 [1]	2017 [2] [3]
	(€ in thousands)		
Loss before tax	(14,222)	(8,753)	(8,474)
Tax expense at prevailing statutory rate (28%)	3,982	2,451	2,373
Non-deductible expenses	(447)	(196)	(326)
Non-taxable income	--	242	266
Tax-rate related differences	(198)	(128)	(139)
Unrecognized temporary differences and tax losses	(3,346)	(2,380)	(2,254)
Income tax expense	**(9)**	**(11)**	**(80)**

17. 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,		
	2019	**2018**	**2017**
		(€ in thousands)	
Wages and salaries	13,885	12,772	10,769
Employee stock option plan	671	604	386
Social security contributions	2,710	2,527	2,197
Total	**17,266**	**15,903**	**13,352**

voxeljet AG offers to its employees a defined contribution plan called "MetallRente". The contributions paid by the Company amounted to kEUR 66, kEUR 61 and kEUR 62 for the years ended December 31, 2019, 2018 and 2017, respectively and is presented within social security contributions. The employer's contribution into the mandatory German state plan amounted to kEUR 889, kEUR 849 and kEUR 710 for the years ended December 31, 2019, 2018, and 2017, respectively.

18. 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. The chief operating decision maker mainly monitors the Company's revenues and gross profit, as the performance indicators.

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,					
	2019		**2018 [1]**		**2017 [1] [2] [3]**	
			(€ in thousands)			
	SYSTEMS	SERVICES	SYSTEMS	SERVICES	SYSTEMS	SERVICES
Revenues	13,454	11,148	12,248	13,761	11,534	11,644
Gross profit	4,284	2,892	3,708	5,437	4,258	5,067
Gross profit in %	31.8%	25.9%	30.3%	39.5%	36.9%	43.5%
PPE	13,093	14,250	11,804	15,871	13,070	14,628

[1] The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Note 3 of the consolidated financial statements.

[2] Comparative figures for the year ended December 31, 2017 were restated for immaterial errors.

[3] The Company has initially applied IFRS 15 and IFRS 9 as of January 1, 2018. Under the transition methods chosen, comparative information has not been restated.

Systems revenues include revenues from the sales of used 3D printers of kEUR 2,007, kEUR 1,489, and kEUR 2,556 for the years ended December 31, 2019, 2018, and 2017, 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,		
	2019	**2018**	**2017**
		(€ in thousands)	
EMEA	11,265	14,673	14,832
Germany	4,474	6,605	5,677
France	1,314	2,667	2,611
Great Britain	1,224	1,050	1,459
Others	4,253	4,351	5,085
Asia Pacific	6,302	5,450	2,526
Indonesia	55	1,819	--
China	3,993	2,134	1,549
South Korea	1,242	888	721
Others	1,012	609	256
Americas	7,035	5,886	5,820
United States	6,843	5,802	5,474
Others	192	84	346
Total	**24,602**	**26,009**	**23,178**

NON-CURRENT ASSETS BY GEOGRAPHICAL REGION

	December 31,	
	2019	**2018**
	(€ in thousands)	
EMEA	22,951	26,651
Germany	22,948	25,104
Great Britain	3	1,547
Asia Pacific	2,095	1,090
Americas	5,746	3,675
United States	5,746	3,675
Total	**30,792**	**31,416**

19. 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 2019.

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, U.S. 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, 2019 the amount loaned to voxeljet UK by voxeljet AG totaled GBP 7.8 million (€ 9.1 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 5.6 million (€ 5.0 million) as of December 31, 2019. An increase in the value of the Euro against U.S. Dollars of 10% would lead to a loss of € 0.5 million.

For the year ended December 31, 2019, voxeljet generated 30.6% 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 62% in 2019, 70% in 2018 and 70% in 2017 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 lease liabilities. 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 EIB 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 EIB 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 EIB 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 financials 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 € 17.7 million (2018: € 26.4 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, 2019 and 2018. 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

	Liabilities			Equity				
(€ in thousands)	**Other loans and borrowings**	**Finance lease liabilities**	**Lease liabilities**	**Subscribed capital**	**Capital reserves**	**Accumulated deficit**	**Non-controlling interests**	**Total**
Balance at January 1, 2019	**17,066**	**105**	**--**	**4,836**	**86,803**	**(46,400)**	**35**	**62,445**
Adjustment on initial application of IFRS 16	**--**	**(105)**	**3,574**	—	—	—	—	**3,469**
Restated balance at January 1, 2019	**17,066**	**—**	**3,574**	**4,836**	**86,803**	**(46,400)**	**35**	**65,914**
Changes from financing cash flows								
Proceeds from loans and borrowings	529	—	—	—	—	—	—	529
Repayment of borrowings	(969)	—	—	—	—	—	—	(969)
Payment of lease liabilities	—	—	(397)	—	—	—	—	(397)
Proceeds from issuance of shares	—	—	—	—	—	—	—	—
Total changes from financing cash flows	**(440)**	**—**	**(397)**	**—**	**—**	**—**	**—**	**(837)**
Other changes								
Liability-related								
New leases	—	—	954	—	—	—	—	954
Reclassification	920	—	(521)	—	—	—	—	399
Interest expense	993	—	190	—	—	—	—	1,183
Interest paid	(993)	—	(190)	—	—	—	—	(1,183)
Total liability-related other changes	**920**	**—**	**433**	**—**	**—**	**—**	**—**	**1,353**
Total equity-related other changes	**—**	**—**	**—**	**—**	**1,274**	**(13,967)**	**(48)**	**(12,741)**
Balance at December 31, 2019	**17,546**	**—**	**3,610**	**4,836**	**88,077**	**(60,367)**	**(13)**	**53,689**

(€ in thousands)	Liabilities			Equity				
	Bank overdrafts used for cash management purposes	**Other loans and borrowings**	**Finance lease liabilities**	**Subscribed capital**	**Capital reserves**	**Accumulated deficit [1] [2]**	**Non-controlling interests**	**Total**
Restated balance at January 1, 2018	**58**	**17,038**	**479**	**3,720**	**76,227**	**(37,672)**	**71**	**59,921**
Changes from financing cash flows								
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
Total changes from financing cash flows	**(58)**	**(1,125)**	**(361)**	**1,116**	**9,972**	**—**	**—**	**9,544**
Other changes								
Liability-related								
Capitalized borrowing costs	—		—	—	—	—	—	—
Reclassification	—	1,152	(13)					1,139
Interest expense	—	944	69	—	—	—	—	1,013
Interest paid	—	(943)	(69)	—	—	—	—	(1,012)
Total liability-related other changes	**—**	**1,153**	**(13)**	**—**	**—**	**—**	**—**	**1,140**
Total equity-related other changes	**—**	**—**	**—**	**—**	**604**	**(8,728)**	**(36)**	**(8,160)**
Balance at December 31, 2018	**—**	**17,066**	**105**	**4,836**	**86,803**	**(46,400)**	**35**	**62,445**

[1] Restated balance at January 1, 2018 includes restatement for immaterial errors.

[2] Restated balance at January 1, 2018 includes impact of the adoption of IFRS 9 and IFRS 15.

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. For further discussion see note 2.

The following table provides an overview of all outstanding loans voxeljet entered into:

	Currency	Nominal interest rate	Year of maturity	December 31, 2019		December 31, 2018	
				Face value	Carrying amount	Face value	Carrying amount
				(€ in thousands)			
Secured bank loan	EUR	3.27%	2020	800	73	700	215
Secured bank loan	EUR	2.29%	2021	700	254	700	395
Secured bank loan	EUR	2.35%	2021	1,000	278	1,000	481
Secured bank loan	EUR	2.47%	2038	2,000	1,774	2,000	1,850
Secured bank loan	EUR	2.72%	2038	1,000	887	1,000	924
Secured bank loan	EUR	2.42%	2038	500	448	500	466
Secured bank loan	EUR	2.73%	2046	500	446	500	465
Secured bank loan	EUR	1.75%	2042	1,000	899	1,000	935
Secured bank loan	EUR	2.48%	2022	675	376	675	511
Secured bank loan	EUR	2.49%	2024	500	429	500	--
Unsecured bank loan	EUR	3.92%	2025	29	24	--	--
Unsecured bank loan	USD	2.90%	2022	40	17	40	25
Unsecured bank loan	EUR	0.00%	2022	10,000	11,641	10,000	10,798
Lease liabilities (2018: finance lease liabilities)	EUR	1.6%-9.3%	2020-2029	3,988	3,610	210	106
Total interest-bearing liabilities				**22,732**	**21,156**	**18,825**	**17,171**

The secured bank loans are secured over land and buildings, machinery and equipment and pledged bond funds with a carrying amount of kEUR 5,000 (2018: kEUR 5,000), kEUR 1,618 (2018: kEUR 1,691) and kEUR 2,000 (2018: kEUR 0), respectively.

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 a 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. As of December 31, 2019, voxeljet was in non-compliance with that ratio and therefore pledged € 2.0 million of bond funds 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 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.

At the time the first tranche of € 10 million was received on December 22, 2017, the EIB under the Synthetic Warrant Agreement was entitled to receive as consideration 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.

The Company has breached its Total Net Financial Debt to EBITDA ratio financial covenant and was in non-compliance with the letters of credit limit under the Finance Contract with the European Investment Bank ("EIB") as of December 31, 2019, under which the Company has to comply with certain minimum thresholds. As a result of the breach, the Company has reclassified the face value of the loan of kEUR 10,000 from a non-current liability to a current liability as of December 31, 2019. After negotiations with the EIB, which started in July 2019, in March 2020, voxeljet received a waiver for the covenant breach in 2019 and also a grace period until March 31, 2021, for which voxeljet can rectify the breach and during which the EIB cannot demand immediate repayment. In return, the Company registered a first rank land charge amounting to kEUR 10,000 on its land and facility located in Friedberg, Germany as collateral in favor of the EIB in March 2020.

In April 2019, voxeljet entered into a loan agreement with Kreissparkasse Augsburg, Germany, to finance self-manufactured 3D printers which are operated in the German service center amounting to kEUR 500. The maturity date is five years after draw down and the drawn down occurred at the end of April 2019. The fixed interest rate amounts to 2.49%. voxeljet pledged two 3D printers from property plant and equipment as collateral.

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.

December 31, 2019
(€ in thousands)

		Contractual cash flow					
	carrying amount	**Total**	**2 months or less**	**2-12 months**	**1-3 years**	**3-5 years**	**More than 5 years**
Long-term debt	17,546	(19,132)	(178)	(10,818)	(1,252)	(2,378)	(4,506)
Lease liability	3,610	(4,409)	(102)	(447)	(1,054)	(1,307)	(1,499)
Trade payables	2,797	(2,797)	(2,797)	--	--	--	--
Total	**23,953**	**(26,338)**	**(3,077)**	**(11,265)**	**(2,306)**	**(3,685)**	**(6,005)**

December 31, 2018
(€ in thousands)

		Contractual cash flow					
	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)	--	--	--	--
Total	**20,116**	**(25,583)**	**(3,114)**	**(826)**	**(1,574)**	**(15,268)**	**(4,801)**

In spite of the significant cash outflow in 2019 and 2018, the Company's short liquidity needs are currently covered. This is supported through the current liquidity forecast including certain sensitivities. The 24-months business plan includes the raising of additional capital through additional debt, equity or other alternatives to ensure the cash requirements of the Company. As the cash position of the Company has significantly decreased within the last years, the mid-term liquidity risk is considered as high.

20. Capital management

Management's aim is to maintain a sufficient 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.

voxeljet's capital structure as of the end of the reporting periods 2019 and 2018 was as follows:

CAPITAL STRUCTURE

	December 31, 2019	December 31, 2018
	(€ in thousands)	
Equity	**33,331**	**46,475**
Share of total equity and liabilities	53.5%	67.0%
Current financial liabilities	11,290	850
Non-current financial liabilities	9,866	16,321
Total financial liabilities	**21,156**	**17,171**
Share of total equity and liabilities	34.0%	24.8%
Total equity and liabilities	**62,305**	**69,352**

21. Leases

The Group has initially adopted IFRS 16, *Leases* on January 1, 2019. For further information, see Part III, Item 18. Financial Statements, Note 3 **"**Summary of significant accounting policies" to the consolidated financial statements.

Leases as lessee

The Company leases assets, including properties, production equipment and vehicles. As a lessee, the Company previously classified leases as operating or finance leases based on its assessment of whether the lease transferred substantially all of the risks and rewards of ownership. Under IFRS 16, the Company recognizes right-of-use assets and lease liabilities for most leases. These leases are on-balance sheet.

However, the Company has elected not to recognize right-of-use assets and lease liabilities for some leases of low-value assets (e.g. tools) as well as short-term leases (leases with less than 12 months of lease term). The Company recognizes the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

Right-of-use assets:

	Property, plant and equipment			
	Property	Production equipment	Others	Total
	(€ in thousands)			
Balance at January 1, 2019	3,109	112	280	**3,501**
Depreciation charge of the year	(578)	(39)	(148)	**(765)**
Additions to the right-of-use assets	1,645	--	123	**1,768**
Revaluations to the right-of-use assets	(513)	(1)	(2)	**(516)**
Derecognition of the right-of-use assets	(24)	--	--	**(24)**
FX	19	--	1	**20**
Balance at December 31, 2019	3,658	72	254	**3,984**

The revaluation of kEUR 516 to the right-of-use assets is due to the early termination of the lease agreement of the facility in Milton Keynes, related to the restructuring of voxeljet UK.

Amounts recognized in profit or loss:

	2019
2019: Leases under IFRS 16	**(€ in thousands)**
Interest on lease liabilities	190
Expenses relating to short-term-leases	39
Depreciation charge of the year	765
2018: Operating leases under IAS 17	
Lease expense	528

Amounts recognized in statement of cash flows:

	2019
	(€ in thousands)
Total cash outflow for leases	(397)

Some property leases contain extension options exercisable by the Group up to one year before the end of the non-cancellable contract period. Where practicable, voxeljet seeks to include extension options in new leases to provide operational flexibility. The extension options held are exercisable only by the Group and not by the lessors. The Group assesses at lease commencement date whether it is reasonably certain to exercise the extension options. The Group reassesses whether it is reasonably certain to exercise the options, if there is a significant event or significant changes in circumstances within its control.

For all existing extension options, voxeljet assessed that the exercise of those is reasonably certain. Therefore the impact is already included within the lease liabilities.

Leases as lessor

The Company leases out a small number of 3D printers. Those leases have been classified as operating leases.

Lease income from operating lease:

(€ in thousands)	
2019 - Operating lease under IFRS 16	
Less than one year	38
2018 - Operating lease under IAS 17	
Less than one year	94

22. 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.

23. 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,		
	2019	2018	2017
	(€ in thousands)		
Fixed compensation	782	781	778
Compensation from stock option plan	353	360	231
Total	**1,135**	**1,141**	**1,009**

Management Board remuneration currently consists of a fixed monetary remuneration, other fixed benefits (including Company car allowances and contributions to a defined contribution plan) as well as the participation in a stock options plan, which was executed on April 7, 2017. There were no variable compensations for the years 2017, 2018 and 2019.

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	Minority shareholder of voxeljet China, Customer	04/11/2016-Current
Simon Franz	Employee	04/11/2017-07/31/2019
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 2019, 2018 and 2017. The rental of office space is ongoing and will continue in 2020. 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 each of 2018 and 2017. At the beginning of 2019, voxeljet acquired those paintings at a price of kEUR 2 and consequently the rental agreement pertaining to the paintings was terminated.

Further, voxeljet acquired goods amounting to kEUR 0, kEUR 7, and kEUR 15 in 2019, 2018 and 2017 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 56, kEUR 74 and kEUR 43 in 2019, 2018 and 2017 from ‘Andreas Schmid Logistik’, where the member of our supervisory board Dr. Stefan Söhn serves as the Chief Financial Officer.

Moreover, voxeljet received orders amounting to kEUR 164, kEUR 175 and kEUR 244 in 2019, 2018 and 2017 from ‘Suzhou Meimai Fast Manufacturing Technology Co., Ltd., which is our minority shareholder for voxeljet China.

Further, voxeljet received orders amounting to kEUR 13, kEUR 0 and kEUR 0 in 2019, 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 as an intern, who is the son of voxeljet’s CFO Rudolf Franz. He received a salary of kEUR 9, kEUR 12 and kEUR 3 in 2019, 2018 and 2017, respectively.

24. Equity

At December 31, 2019, 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 € 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 € 1.4 million.

Incremental costs of € 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 2,418 by issuing up to 2,418,000 new no par value ordinary shares against contribution in cash or in kind until May 28, 2024.

On April 20, 2020, we received a notice from the New York Stock Exchange ("NYSE") stating that we were not in compliance with 802.01C of the NYSE's Listed Company Manual, which requires that we maintain a minimum average closing price of at least $1.00 per share during a consecutive 30 trading-day period (the "$1.00 Price Standard"). As of April 17, 2020, the average closing price of our ADSs was less than $1.00 per share over a consecutive 30 trading-day period. The Company must regain compliance with the $1.00 Price Standard by the end of the six-month cure period, otherwise the NYSE will initiate delisting proceedings.

On August 23, 2019, the Company received a notice from the NYSE stating that the Company was not in compliance with the continued listing requirements established in Section 802.01B and, at the same time, the Company's shareholders' equity was less than $50 million. On January 24, 2020, the Company received a notice from the NYSE, notifying it that the NYSE agreed to accept the Company's compliance plan, and continue the listing of the Company for 18 months starting from August 23, 2019.

Because the Securities and Exchange Commission (the "SEC") declared effective on April 21, 2020 a COVID-19-triggered NYSE proposal to toll compliance with NYSE's $50 Million Market Capitalization Standard and $1.00 Price Standard through June 30, 2020, the Company's cure period for both the $50 Million Market Capitalization Standard and the $1.00 Price Standard will recommence on July 1, 2020.

In addition, if the Company's average global market capitalization over a consecutive 30 trading-day period is less than $15 million (the "$15 Million Market Capitalization Standard"), the NYSE will promptly initiate suspension and delisting procedures; the Company will not have any opportunity to regain compliance and the Company's ADSs will be delisted. However, in light of market-wide declines caused by the COVID-19 pandemic, on March 20, 2020, the SEC granted the NYSE's proposed suspension of the enforcement of the $15 Million Market Capitalization Standard, which suspension is to last until June 30, 2020.

25. Subsequent events

In March 2020, voxeljet received a waiver for the covenant breach in 2019 and also a grace period until March 31, 2021, for which voxeljet can rectify the breach and during which the EIB cannot demand immediate repayment. In return, the Company registered a first rank land charge on its land and facility located in Friedberg, Germany as collateral in favor of the EIB in March 2020. For further discussion see Note 2.

In late 2019 COVID-19 was identified in Wuhan, China, and has since spread globally, resulting in the ongoing COVID-19 pandemic. Many governments have declared states of emergency and imposed varying degrees of restrictions on social and commercial activities, to prevent and slow the spread of COVID-19. Such restrictive measures have resulted in significant disruption to business operations and a significant increase in economic uncertainty, with more volatile asset prices and currency exchange rates, and a marked decline in long-term interest rates in developed economies. These events and conditions create a level of uncertainty and risk that companies may not have encountered before, and may result in significant financial reporting implications for preparers of financial statements. Also, voxeljet expects adverse impacts from the COVID-19 pandemic, including decline in revenues for the Services segment and service and maintenance business of the Systems segment mainly during the second quarter of 2020. In addition, voxeljet expects some delays in installation of 3D printers at customers' facilities, which could lead to postponed revenue recognition for those transactions. Furthermore, voxeljet expects delays in payments from our customers related to receivables from the sale of 3D printers from the fourth quarter of 2019. However we currently do not expect payment defaults. In order to decrease the risk of contagion, most of the Company's administrative work is performed remotely. This could impede or slow down work processes caused by, among other things, increased difficulty in coordinating with other colleagues. However, voxeljet currently does not anticipate facing significant constraints and challenges with remote working as our employees are successfully utilizing advanced communication technology to work remotely and are highly flexible with work arrangements. Furthermore, we have implemented an initiative to promote telework and staggered work hours to ensure that our employees can continue to effectively perform their roles even if the COVID-19 pandemic continues to require protracted remote working. As the spread of COVID-19 is considered as a non adjusting subsequent event, the carrying amounts as of December 31, 2019 have not been adjusted.