voxeljet AG

INDEX TO FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft

To the Shareholders and Supervisory Board of voxeljet AG

Opinion on the Financial Statements

We have audited the accompanying consolidated statement of financial position of voxeljet AG and its subsidiaries (the "Company") as of December 31, 2020, and the related consolidated statements of comprehensive loss, changes in equity and cash flows for the year then ended, including the related notes (collectively referred to as 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, 2020, and the results of its operations and its cash flows for the year then ended in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

We also have audited the adjustments to revise the 2019 and 2018 consolidated financial statements for the correction of errors and retrospective adjustments, as described in Note 2 of the financial statements. In our opinion, such adjustments are appropriate and have been properly applied. We were not engaged to audit, review, or apply any procedures to the 2019 or 2018 consolidated financial statements of the Company other than with respect to the adjustments and, accordingly, we do not express an opinion or any other form of assurance on the 2019 or 2018 consolidated financial statements taken as a whole.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audit. 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 audit of these consolidated financial statements 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 audit 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 audit 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 audit 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 audit provides a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Recognition and Valuation of Embedded Derivative Financial Instruments

As described in Notes 2 to the consolidated financial statements, the Company has recognized embedded derivative financial assets amounting to kEUR 2,367 and embedded derivative financial liabilities amounting to kEUR 808 (collectively, the embedded derivative financial instruments), which are presented as current assets and liabilities, respectively. The embedded derivative financial instruments, which are embedded in Tranche A and B1 of the loan granted in EUR by the European Investment Bank ("EIB"), are required to be bifurcated and accounted for separate from the host contract because their value is dependent on the share price of the Company, which is not clearly and closely related to the host contract. The embedded derivative financial instruments are revalued at each balance sheet date, with changes in their fair value recorded within financial result of the consolidated statements of comprehensive loss. The fair value of the embedded derivative financial instruments, which are not traded in an active market, is determined by management using valuation techniques which are dependent on inputs such as share prices, share volume, discount rates and foreign currency exchange rates. Finance income (Tranche A) and expense (Tranche B1) resulting from the revaluations described above amounted to kEUR 93 and kEUR 808, respectively, for the year ended December 31, 2020.

The principal considerations for our determination that performing procedures relating to the recognition and valuation of embedded derivative financial instruments is a critical audit matter are that there is significant judgment and estimation by management when evaluating the recognition and valuation of the embedded derivative financial instruments. This in turn led to a high degree of auditor judgement, subjectivity, and effort in performing procedures to evaluate management's conclusion on the recognition and valuation of the embedded derivative financial instruments. Furthermore, the audit effort involved the use of professionals with specialized skill and knowledge to assist in performing these procedures and evaluating the audit evidence obtained. As disclosed by management, a material weakness existed related to this matter.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included, among others,

i. executing initial audit procedures regarding the appropriateness of the initial recognition and valuation of the embedded derivative financial instruments as they were bifurcated from the host contract, the valuation techniques used as well as the reasonableness of management’s assumptions and estimates included in the calculation of fair values of the embedded derivative financial instruments,
ii. evaluating management’s process for determining the fair values of the embedded derivative financial instruments as well as the recognition of deferred tax assets and liabilities on the embedded derivative financial instruments,
iii. evaluating the appropriateness of valuation techniques used as well as the reasonableness of management’s assumptions and estimates included in the calculation of fair values of the embedded derivative financial instruments,
iv. evaluating the quantitative factors (which consider share prices, discount rates and currency exchange rates) used by the Company in the calculation of the fair values of the embedded derivative financial instruments to source data provided by the Company and/or to externally available data,
v. evaluating the compliance of the underlying assumptions and input factors used in the fair value calculations performed by the Company for the determination of the fair values of the embedded derivative financial instruments with the terms of the loan agreements, including the correct application of the formulas used in the fair value calculations,
vi. assessing the permanence of methods used for the determination of deferred tax assets and liabilities on the embedded derivative financial instruments and
vii. evaluating management’s assessment to the disclosure requirements in reference to the embedded derivative financial instruments including their maturity and the Company’s compliance with financial covenants referenced in the agreement with the EIB.

Munich, Germany
March 30, 2021

PricewaterhouseCoopers GmbH
Wirtschaftsprüfungsgesellschaft

/s/ Katharina Deni	/s/ Sebastian Stroner
Wirtschaftsprüfer	Wirtschaftsprüfer
(German Public Auditor)	(German Public Auditor)

We have served as the Company's auditor since 2020.

Report of Independent Registered Public Accounting Firm KPMG AG Wirtschaftsprüfungsgesellschaft

To the Stockholders and Supervisory Board
voxeljet AG:

Opinion on the Consolidated Financial Statements

We have audited, before the effects of the adjustments for the correction of the errors and retrospective adjustments described in Note 2, the consolidated statement of financial position of voxeljet AG and subsidiaries (the Company) as of December 31, 2019, the related consolidated statements of comprehensive loss, changes in equity, and cash flows for each of the years in the two-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements). The 2019 and 2018 consolidated financial statements before the effects of the adjustments described in Note 2 are not presented herein. In our opinion, except for the errors and retrospective adjustments described in Note 2, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019, and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2019, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

We were not engaged to audit, review, or apply any procedures to the adjustments for the correction of the errors or retrospective adjustments described in Note 2, and accordingly, we do not express an opinion or any other form of assurance about whether such adjustments are appropriate and have been properly applied. Those adjustments were audited by other auditors.

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 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.

We served as the Company's auditor from 2007 to 2020.

Munich, Germany
May 7, 2020

voxeljet AG

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

	Notes	December 31, 2020	December 31, 2019 (1) (2)
		(€ in thousands)	
Current assets		**28,137**	**31,513**
Cash and cash equivalents	3	5,324	4,368
Financial assets	3, 12	5,351	7,408
Trade receivables	3, 7	4,680	5,915
Inventories	8	11,394	12,459
Income tax receivables		31	39
Other assets		1,357	1,324
Non-current assets		**25,090**	**31,052**
Financial assets	3, 12	5	2,279
Intangible assets	10	1,143	1,356
Property, plant and equipment	10, 21	23,774	27,343
Investments in joint venture		27	30
Other assets		141	44
Total assets		**53,227**	**62,565**

	Notes	December 31, 2020	December 31, 2019 (1) (2)
		(€ in thousands)	
Current liabilities		**26,215**	**18,855**
Trade payables	3	1,956	2,797
Contract liabilities	3	2,911	2,623
Financial liabilities	3, 12, 20	19,770	11,290
Other liabilities and provisions	11	1,578	2,145
Non-current liabilities		**7,371**	**10,192**
Deferred tax liabilities		52	142
Financial liabilities	3, 12, 20	7,314	9,866
Other liabilities and provisions	11	5	184
Equity		**19,641**	**33,518**
Subscribed capital	25	4,836	4,836
Capital reserves	25	88,748	88,077
Accumulated deficit	3	(75,463)	(60,124)
Accumulated other comprehensive income		1,675	742
Equity attributable to the owners of the company		**19,796**	**33,531**
Non-controlling interests		**(155)**	**(13)**
Total equity and liabilities		**53,227**	**62,565**

See accompanying notes to these consolidated financial statements.

(1) Comparative figures for the year ended December 31, 2019 were revised related to the amendment of classification of short-term investments. For further information, see Note 2 “Preparation of financial statements” to the consolidated financial statements.

(2) Comparative figures for the year ended December 31, 2019 were revised related to the recalculation of the performance participation interest related to the Finance Contract with the EIB. For further information, see Note 2 “Preparation of financial statements” to the consolidated financial statements.

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CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

		Year Ended December 31,		
		2020	**2019 (1) (2)**	**2018 (1) (2) (3)**
	Notes	**(€ in thousands, except share and share data)**		
Revenues	3, 18	21,567	24,602	26,009
Cost of sales	13	(14,812)	(17,426)	(16,864)
Gross profit		**6,755**	**7,176**	**9,145**
Selling expenses		(5,816)	(7,118)	(7,332)
Administrative expenses		(6,407)	(6,952)	(5,587)
Research and development expenses		(6,500)	(7,212)	(6,334)
Other operating expenses	14	(2,799)	(945)	(751)
Other operating income	14	1,603	2,143	1,297
Operating loss		**(13,164)**	**(12,908)**	**(9,562)**
Finance expense	15	(2,589)	(1,349)	(1,279)
Finance income	15	184	318	2,158
Financial result	15	**(2,405)**	**(1,031)**	**879**
Loss before income taxes		**(15,569)**	**(13,939)**	**(8,683)**
Income tax (expense) income	16	88	(39)	(64)
Net loss		**(15,481)**	**(13,978)**	**(8,747)**
Other comprehensive income (loss) that may be reclassified subsequently to profit or loss		933	(577)	(61)
Total comprehensive loss		**(14,548)**	**(14,555)**	**(8,808)**
Loss attributable to:				
Owner of the Company		(15,339)	(13,714)	(8,711)
Non-controlling interests		(142)	(264)	(36)
		(15,481)	**(13,978)**	**(8,747)**
Total comprehensive loss attributable to:				
Owner of the Company		(14,406)	(14,291)	(8,772)
Non-controlling interests		(142)	(264)	(36)
		(14,548)	**(14,555)**	**(8,808)**
Weighted average number of ordinary shares outstanding		4,836,000	4,836,000	3,940,636
Loss per share - basic/diluted (EUR)		(3.20)	(2.89)	(2.22)

See accompanying notes to these consolidated financial statements.

(1) Comparative figures for the year ended December 31, 2019 and December 31, 2018 were revised related to the amendment of classification of short-term investments. For further information, see Note 2 “Preparation of financial statements” to the consolidated financial statements.

(2) Comparative figures for the year ended December 31, 2019 and December 31, 2018 were revised related to the recalculation of the performance participation interest related to the Finance Contract with the EIB. For further information, see Note 2 “Preparation of financial statements” to the consolidated financial statements.

(3) 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 **“**Summary of significant accounting policies” to the consolidated financial statements.

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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, 2018[1] [2] [3]	**3,720**	**76,227**	**(37,699)**	**1,380**	**43,628**	**71**	**43,699**
Loss for the period [1] [2]	--	--	(8,711)	--	**(8,711)**	(36)	**(8,747)**
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] [2] [3]	**4,836**	**86,803**	**(46,410)**	**1,320**	**46,549**	**35**	**46,584**
Loss for the period [1] [2]	--	--	(13,714)	--	**(13,714)**	(264)	**(13,978)**
Foreign currency translations	--	--	--	(578)	**(578)**	--	**(578)**
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 [1] [2]	**4,836**	**88,077**	**(60,124)**	**742**	**33,531**	**(13)**	**33,518**
Loss for the period	--	--	(15,339)	--	**(15,339)**	(142)	**(15,481)**
Foreign currency translations	--	--	--	933	**933**	--	**933**
Equity-settled share-based payment	--	671	--	--	**671**	--	**671**
Balance at December 31, 2020	**4,836**	**88,748**	**(75,463)**	**1,675**	**19,796**	**(155)**	**19,641**

See accompanying notes to these consolidated financial statements.

[1] Comparative figures for the year ended December 31, 2019, December 31, 2018 and January 1, 2018 were revised related to the amendment of classification of short-term investments. For further information, see Note 2 “Preparation of financial statements” to the consolidated financial statements.

[2] Comparative figures for the year ended December 31, 2019 December 31, 2018 and January 1, 2018 were revised related to the recalculation of the performance participation interest related to the Finance Contract with the EIB. For further information, see Note 2 “Preparation of financial statements” to the consolidated financial statements.

[3] 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 **“**Summary of significant accounting policies” to the consolidated financial statements.

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CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2020	**2019 (1) (2)**	**2018 (1) (2) (3)**
		(€ in thousands)	
Cash Flow from operating activities			
Loss for the period	**(15,481)**	**(13,978)**	**(8,747)**
Depreciation and amortization	3,442	4,211	3,506
Foreign currency exchange differences on loans to subsidiaries	1,466	(828)	(340)
Changes in financial assets due to fair value valuation	11	(174)	119
Share-based compensation expense	671	671	604
Change in impairment of trade receivables	29	15	227
Non-cash expense on financial liabilities	1,505	874	781
Change in fair value of derivative equity forward	715	106	(2,028)
Change in inventory allowance	(1)	(21)	(417)
Interest paid	258	320	231
Interest received	(92)	(93)	(42)
Loss on disposal of intangibles and property, plant and equipment	42	354	--
Other	63	92	111
Change in working capital	**774**	**1,859**	**(1,336)**
Trade and other receivables, inventories and current assets	1,501	(759)	(1,390)
Trade payables	(781)	358	(310)
Other liabilities, contract liabilities and provisions	(417)	2,286	375
Change in restricted cash	463	--	--
Income tax payable/receivables	8	(26)	(11)
Total	**(6,598)**	**(6,592)**	**(7,331)**
Cash Flow from investing activities			
Payments to acquire property, plant and equipment and intangible assets	(139)	(1,100)	(3,812)
Proceeds from disposal of financial assets	4,962	8,373	10,475
Payments to acquire financial assets	(994)	(2,725)	(8,884)
Interest received	92	93	42
Other	--	--	--
Total	**3,921**	**4,641**	**(2,179)**
Cash Flow from financing activities			
Repayment of bank overdrafts and lines of credit	--	--	(58)
Repayment of sale and leaseback obligation	--	--	(324)
Repayment of lease liabilities (2018): Repayment of finance lease obligations)	(412)	(397)	(37)
Repayment of long-term debt	(863)	(969)	(2,764)
Proceeds from issuance of long-term debt	5,000	529	1,639
Proceeds from issuance of shares	--	--	11,088
Interest paid	(258)	(320)	(231)
Total	**3,467**	**(1,157)**	**9,313**
Net increase (decrease) in cash and cash equivalents	**790**	**(3,108)**	**(197)**
Cash and cash equivalents at beginning of period	**4,368**	**7,402**	**7,569**
Changes to cash and equivalents due to foreign exchanges rates	**166**	**74**	**30**
Cash and cash equivalents at end of period	**5,324**	**4,368**	**7,402**

See accompanying notes to these consolidated financial statements.

(1) Comparative figures for the year ended December 31, 2019 and December 31, 2018 were revised related to the amendment of classification of short-term investments. For further information, see Note 2 "Preparation of financial statements" to the consolidated financial statements.

(2) Comparative figures for the year ended December 31, 2019 and December 31, 2018 were revised related to the recalculation of the performance participation interest related to the Finance Contract with the EIB. For further information, see Note 2 "Preparation of financial statements" to the consolidated financial statements.

(3) 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 **"**Summary of significant accounting policies" to the consolidated financial statements.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Basis of preparation

1. The reporting entity

voxeljet AG (in the following referred to as '*voxeljet'*, 'Group', or the 'Company'*)* is a high-tech company headquartered in Friedberg, Germany which is listed on the NASDAQ Capital Market ("NASDAQ"). 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. In December 2020, management initiated the wind-up of voxeljet UK. For further information, see Note 9 to the consolidated financial statements.

As previously disclosed, on August 18, 2020, the Company announced that it would voluntarily transfer the listing of its American Depositary Shares ("ADSs") from the New York Stock Exchange (the "NYSE") to the NASDAQ, effective August 28, 2020, after market close. voxeljet's ADSs began trading as a NASDAQ-listed security at market open on August 31, 2020, and have continued to be listed under the ticker symbol "VJET."

As previously disclosed, on July 31, 2020, the Company announced that it would change the ratio of its ADSs to ordinary shares from each ADS representing one-fifth (1/5) of one ordinary share (5:1) to each ADS representing one ordinary share (1:1). For ADS holders, the ratio change had the same effect as a 1 for 5 reverse ADS split. The ratio change became effective on August 14, 2020 (the "Effective Date"). On the Effective Date, each ADS holder was required to exchange every five (5) ADSs then held for one (1) new ADS (e.g., if a holder of ADSs previously held 50 ADSs, following the ratio change on the Effective Date, such holder held 10 ADSs). Citibank, N.A., as depositary bank, has arranged for the exchange of the current ADSs for the new ones. There was no change to voxeljet's underlying ordinary shares.

As a manufacturer of three-dimensional ("3D") printing systems, voxeljet specializes in the development, production and distribution of industrial printing machines and the production and sale of customized printed products to industrial customers. The Company operates in two business divisions: Systems and Services.

The voxeljet Systems business division develops, manufactures and sells innovative 3D printers. Today, voxeljet has a product range that reaches from smaller entry models to large-format machines, and therefore offers 3D printer systems for a wide range of application areas.

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

2. Preparation of financial statements

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

The consolidated financial statements were authorized for issue by the Management Board on March 30, 2021.

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 profit or loss	Fair value
Non-derivative financial instruments at fair value through profit or loss	Fair value
Derivative financial instruments at fair value through profit or loss	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 the years 2020, 2019 and 2018 amounting to kEUR 15,481, kEUR 13,978 and kEUR 8,747, respectively. Additionally, voxeljet had negative cash flows from operating activities in 2020, 2019 and 2018 of kEUR 6,598, kEUR 6,592, kEUR 7,331, respectively, mainly due to continuous net losses. As of May 7, 2020, the issuance date of the Company's consolidated financial statements for the year ended December 31, 2019, the Company had concluded there was a material uncertainty that cast significant doubt on the Company's ability to continue as a going concern. As discussed below, management has subsequently taken certain actions, which management has concluded remove that significant doubt.

Due to the global outbreak of COVID-19, the Company has experienced and expects to continue to experience lower demand in both, the Systems and the Services segment. voxeljet's clients have postponed and may continue to postpone larger investments and therefore, the demand for 3D printers may also decrease. In addition, the COVID-19 situation could cause further delays in installation of 3D printers at customers' facilities, which could lead to postponed revenue recognition for those transactions. In the third quarter of 2020, the Company experienced a slight recovery of demand compared to the prior two quarters in 2020, and in the fourth quarter this positive trend has continued. Both a decrease in revenues as well as potential delays in the installations increase the risk and likelihood of lower cash inflows. Such risks have been evaluated by management and consequently have been considered in the Company's liquidity forecast, which assumes voxeljet's business plan is executed appropriately and sales track as expected. Management updates the liquidity forecast on an ongoing basis.

The COVID-19 situation raises uncertainties regarding the achievement of budgeted sales and the fulfillment of voxeljet's budget. Consequently, the Company could experience difficulty in generating sufficient cash flow to meet its obligations and sustain its operations. Material deviations from the forecasts could lead to a covenant breach in the future, which could result in an acceleration of voxeljet's obligation to repay all amounts outstanding under those facilities.

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, as the Company has been successful in drawing down kEUR 5,000 of the second tranche (tranche B1) of the loan granted by the EIB under the Finance Contract in June 2020. This improved the liquidity significantly. Also, the financial covenants under the Finance Contract have been renegotiated to replace the Total Net Financial Debt to EBITDA ratio with a minimum cash/cash equivalents requirement (the "Minimum Cash Covenant"). As of June 30, 2020, pursuant to the semi-annual financial testing prescribed by the Finance Contract, as amended, the Company was in compliance with the Minimum Cash Covenant. However, in March 2021, the Company discovered that its calculation of cash and cash equivalents for determining compliance with the Minimum Cash Covenant was incorrect and, accordingly, the Company was not in compliance with the Minimum Cash Covenant as of December 31, 2020. Also in March 2021, the Company received a waiver from the EIB for the noncompliance with the Minimum Cash Covenant, pursuant to which (i) the EIB agreed that it will not demand immediate repayment of the outstanding amounts owed and (ii) the EIB and the Company amended the financial covenants in the Finance Contract to clarify the calculation of cash and cash equivalents for determining compliance with the Minimum Cash Covenant.

In addition, the successful restructuring and the initiation of the wind-up of voxeljet UK, which included consolidating 3D printing to serve all customers in Europe from the German service center as well as transferring all employees to voxeljet AG has been finished. This helps to reduce overall costs and will lead to improved gross profit margins by realizing economies of scale in the German service center. The wind-up of voxeljet UK will lead to further cost savings, especially of administrative expenses. Management also initiated a restructuring program at the German entity during the fourth quarter of 2019. This program included the reduction of headcount mainly in the Systems segment in order to streamline the Company's operations and optimize efficiency. This restructuring was successfully completed at the end of June 2020 and already provides further cost reductions, which is reflected in our monthly detailed target-actual comparisons.

In January 2021, the Company has successfully completed its registered direct offering and sale of 621,170 ordinary shares in the form of ADS at a purchase price of € 13.33 per share (this equals $16.16 per ordinary share based on the exchange rate as of the close of business in New York on January 14, 2021). This provided voxeljet with gross proceeds of the offering amount to approximately $10 million (€ 8.3 million) before deducting fees and expenses. In February 2021, the Company completed another registered direct offering and sale of 443,414 ordinary shares in the form of ADS at a purchase price of € 22.27 per ordinary share (this equals $26.95 per ordinary share based on the exchange rate as of the close of business in New York on February 9, 2021). This provided voxeljet with gross proceeds of approximately $12 million (€ 9.9 million) before deducting fees and expenses. Those capital increases improved the Company's liquidity as well as equity ratio significantly. In spite of this success, management is taking further steps to raise further funds which may include debt or equity financing, not without mentioning, that there can be no assurance that voxeljet will be able to raise further funds on terms favorable to the Company, if at all.

Based on the Company's current liquidity and capital resources in combination with the current liquidity forecasts, as well as the implemented cost reduction program and the successful financing with the EIB, the waiver for the noncompliance with the Minimum Cash Covenant as of December 31, 2020 and the registered direct offerings, management believes that the Company has the ability to meet its financial obligations for at least the next 24 months and therefore continues as a going concern.

Impairment test

Non-financial assets are tested for impairment if there are indicators that the carrying amounts may not be recoverable. The Company considers the COVID-19 situation to be such an indicator. Therefore, voxeljet performed an impairment test for the non-financial assets for the end of the reporting period. 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. The impairment test, performed by management, did not lead to any write downs.

Revision to prior periods for correction of immaterial errors and retrospective adjustments to presentations and disclosures

a) Amendment of classification of short-term investments

In the first quarter of 2020, the Company amended the classification of short-term investments included in current financial assets. Before the amendment, those short-term investments have been classified in the category at fair value through OCI (FVOCI).

The new classification shall be the category at fair value through profit and loss (FVTPL). Accordingly, prior periods have been revised, which leads to movements between profit and loss and other comprehensive income as the changes in fair value are now presented within finance income or expense.

b) Recalculation of performance participation interest related to the Finance Contract with the EIB

In the first quarter of 2020, the Company recalculated the performance participation interest related to the Finance Contract with the EIB, due to a mistake in the calculation logic. Accordingly, prior periods have been revised, which leads to adjustments in non current financial assets, deferred tax liabilities as well as equity.

c) Impacts of amendment and recalculation

Due to the amendments and recalculations, which are described above, the opening balance as of January 1, 2018 of non current financial assets as well as deferred tax liabilities have decreased by kEUR 37 and kEUR 10, respectively. The opening balance as of January 1, 2018 of accumulated deficit increased by kEUR 27. Further, the loss for the year ended December 2018 decreased by kEUR 17. The opening balance as of January 1, 2019 of non current financial assets as well as deferred tax liabilities have increased by kEUR 151 and kEUR 43, respectively. The opening balance as of January 1, 2019 of accumulated deficit increased by kEUR 10, whereas the opening balance of accumulated other comprehensive gain increased by kEUR 118. As a result, the loss for the year ended December 2019 decreased by kEUR 253.

As of December 31, 2018, non current financial assets as well as deferred tax liabilities have increased by kEUR 151 and kEUR 43, respectively. For the period ending December 31, 2018 the balance of accumulated deficit increased by kEUR 10, whereas the balance of accumulated other comprehensive gain increased by kEUR 118. As of December 31, 2019, non current financial assets as well as deferred tax liabilities have increased by kEUR 260 and kEUR 73, respectively. For the period ending December 31, 2019 the balance of accumulated deficit decreased by kEUR 243, whereas the balance of accumulated other comprehensive gain decreased by kEUR 56.

For the year ended December 2018 the loss was reduced by kEUR 17 whereas net changes in fair value of debt investments at FVOCI was increased by kEUR 119. Further, the loss for the three months ended December 2019 was increased by kEUR 93 whereas net changes in fair value of debt investments at FVOCI was increased by kEUR 14. For the year ended December 2019 the loss was reduced by kEUR 253 whereas net changes in fair value of debt investments at FVOCI was reduced by kEUR 174.

The Company has evaluated the effect of these amendments, both qualitatively and quantitatively, and concluded that the change did not have a material impact on, nor require amendment of, any previously filed financial statements. Affected financial statement line items for prior periods are appended with a footnote.

d) Retrospective adjustments to presentations and disclosures of prior period information

Additionally, the Company has applied retrospective adjustments to presentations and disclosures of prior period information within the following footnotes:

- Consolidated statements of cash flow:

The Company has revised the presentation of interest paid and interest received for the years ended December 31, 2018 and December 31, 2019 both previously disclosed under supplemental cash flow information, now presented in cash flow from operating activities, cash flow from investing activities and cash flow from financing activities, respectively. Further, the Company has revised the presentation of changes in financial assets due to fair value valuation as well as change in fair value of derivative equity forward for the years ended December 31, 2018 and December 31, 2019 related to the amendment of classification of short-term investments and the recalculation of performance participation interest related to the Finance Contract with the EIB. As a consequence, the line item others has also been revised.

- Note 12. Additional disclosures to financial instruments:

The Company has changed the categorization of the fair value of long-term debt in financial liabilities as of December 31, 2019 from level 2 to level 3.

- Note 19. Financial risk management:

The Company revised the table contractual cash out flow as of December 31, 2019 regarding the three to five years bucket by including the cash outflow of kEUR 2,918 from the performance participation interest related to tranche A of the loan granted by the EIB.

- Note 24. Related party transactions:

The Company has included Michele Neuber for his employment as working student within the related party disclosure. His father Volker Neuber serves as a member of voxeljet's supervisory board since July 2020.

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.

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

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.

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. Refurbished 3D printers usually were produced for and used in our Services segment. On average, these refurbished printers have been operating within a voxeljet service center for 1.5 to 2.5 years prior to their sale. Before these 3D printers are sold, they are fully refurbished and a new printhead is installed. The cost of sales include the residual value as well as the costs related to the refurbishment.

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 accounted for as separate 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.

It is the Group's policy that it does not offer products to the end customer with a right of return. Therefore, neither a refund liability nor a right to the returned goods are recognized.

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. The extended warranty is considered as service-type warranty and therefore accounted as a separate performance obligation.

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 is € 6.8 million. The Company expects to realize the entire amount in 2021. The amount of kEUR 772 included in contract liabilities at December 31, 2019 has been recognized as revenue in 2020 (2019: kEUR 584). Management expects that 96% (kEUR 2,794) of the transaction price allocated to unsatisfied performance obligations as of December 31, 2020 will be recognized as revenue during the next reporting period. The remaining 4% (kEUR 117) will be recognised in the 2022 financial year.

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		
	2020	2019	2018	2020	2019	2018
Primary geographical markets						
EMEA	5,926	4,951	5,592	5,540	6,314	9,081
Asia Pacific	3,612	5,371	4,704	909	931	746
Americas	3,018	3,132	1,952	2,562	3,903	3,934
	12,556	**13,454**	**12,248**	**9,011**	**11,148**	**13,761**
Timing of revenue recognition						
Products transferred at a point in time	11,366	12,332	11,188	9,011	11,148	13,761
Products and services transferred over time	1,190	1,122	1,060	--	--	--
Revenue from contracts with customers	**12,556**	**13,454**	**12,248**	**9,011**	**11,148**	**13,761**

In 2020, voxeljet leased one 3D printer (2019: two 3D printers and 2018: two 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

Financial instruments are contracts that give rise to a financial asset in one entity and a financial liability or equity instrument in another entity. voxeljet recognizes financial assets and financial liabilities in the balance sheet when an entity of the Group becomes a contractual party to the financial instrument.

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

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

Initial measurement

At initial recognition, voxeljet measures a financial asset at its fair value plus, in the case of a financial asset at fair value through other comprehensive income, transactions costs that are directly attributable to the acquisition of the financial asset. Transaction costs of financial assets carried at fair value through profit or loss are expensed immediately. Financial liabilities are initially assigned to one of the following valuation categories in accordance with IFRS 9, measured at amortized cost or measured at fair value through profit or loss.

Subsequent measurement

The subsequent measurement of voxeljet's financial assets is based on their classification:

- at amortized cost: interest income from these financial assets is reported in the financial income using the effective interest method. Gains and losses on derecognition are recorded in the income statement and, considering related foreign currency gains and losses, reported under other operating income and expenses,
- at fair value through profit or loss: Gains or losses of derivative financial instruments and short term investments, which are subsequently measured at fair value through profit or loss, are included in the income statement as interest income or interest expense in the period in which they arise.

The subsequent measurement of voxeljet’s financial liabilities depends on their classification as follows:

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

Derecognition

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

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

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.

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 (AC), 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 (AC) 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 (FVOCI). 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, initially our short-term investments in bond funds were classified as fair value through other comprehensive income (FVOCI). In the first quarter of 2020, we amended our classification of short-term investments included in current financial assets as FVTPL. For further information, see Note 2.

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

- General approach:

Generally, financial assets are considered as having a low default risk at initial recognition resulting in a 12-month expected credit loss provision. In case of a significant increase in credit risk, the lifetime expected credit losses are recognized. Amongst others debtor’s payment delays of more than 90 days are considered as an indicator for increase in default risk. Further, when determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECLs, voxeljet 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.

- Simplified approach:

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

In order to measure expected credit losses, trade receivables are summarized on the basis of common credit risk characteristics and overdue days. The expected credit losses are based both quantitative and qualitative information and analysis, based on the Group's historical experience and informed credit assessment and including forward-looking information.

A default on a financial asset is when the counterparty fails to make contractual payments within 90 days of when they fall due and there are no information available, which are contradictory e.g. the counterparty commits the payment to a later time or the Company and the counterparty agreed upon a payment plan.

Financial assets are written off when there is no reasonable expectation of recovery, such as a debtor failing to engage in a repayment plan with the Company or a counterparty had declared insolvency. Where loans or receivables have been written off, the Company continues to engage in enforcement activity to attempt to recover the receivable due. Where recoveries are made, these are recognised in profit or loss.

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.

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 of 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.

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 or other operating income.

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. For information about the exposure to credit risk and ECLs for trade receivables as of December 31, 2020 and 2019, please refer to Note 19.

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 due to the excellent ratings of those banks to which voxeljet entrusted its funds.

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, 2020	3,658	72	254	**3,984**
Balance at December 31, 2020	2,892	45	254	**3,191**

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 was 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 applying IFRS 16, in relation to the leases that were previously classified as operating leases, as of December 31, 2020, the Company recognized kEUR 3,191 of right-of-use assets (as of December 2019: kEUR 3,984) and kEUR 3,124 of lease liabilities (as of December 31, 2019: kEUR 3,610).

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, 2020, the Company recognized kEUR 682 (2019: kEUR 765) of depreciation expenses and kEUR 167 (2019: 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 as the criteria set forth in IAS 38 for capitalizing such costs have not yet been met.

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.

Government grants in connection with government assistance to help businesses to mitigate adverse impacts from the COVID-19 global pandemic are recognized in profit or loss on a systematic basis over the periods in which the entity recognizes as expenses the related costs for which the grants are intended to compensate, provided that the entity complies with the conditions for the funding.

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. 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 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 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
2020	1.1422	0.8897	84.6392	7.8747
2019	1.1195	0.8778	78.8361	7.7355
2018	1.1810	0.8847	80.7332	7.8081

Year end exchange rates to Euro

December 31,	Year End Rate			
	USD	GBP	INR	CNY
2020	1.2271	0.8990	89.6605	8.0225
2019	1.1234	0.8508	80.1870	7.8205

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 and licenses, 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 continuously assesses or if there is a triggering event like the COVID-19 situation 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.

	2020	2019
	(in thousands of shares)	
Weighted-average number of ordinary shares at 31 December	**4,836**	**4,836**

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, 2020.

Standard	Effective date	Descriptions
IFRS 17	01/2021	Insurance Contracts
IAS 1	01/2022	Classifications of Liabilities as Current or Non-Current (Amendment to IAS 1)

The adoption of standards effective 01/2020 did not have a material impact on the financial statements as of and for the year ended December 31, 2020. The Company has not yet conclusively determined what impact the new standards, amendments or interpretations effective 01/2021 or later will have on its financial statements, but does not expect they will have a significant impact.

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.

Recognition of derivative financial instruments

As described in Notes 12 and 19 to the consolidated financial statements, the Company has recognized embedded derivative financial assets amounting to kEUR 2,367 and embedded derivative financial liabilities amounting to kEUR 808 (collectively, the embedded derivative financial instruments), which are presented as current assets and liabilities, respectively. The embedded derivative financial instruments, which are embedded in Tranche A and B1 of the loan granted in Euros by the EIB, are required to be bifurcated and accounted for separate from the host contract because their value is dependent on the share price of the Company, which is not clearly and closely related to the host contract. The embedded derivative financial instruments are revalued at each balance sheet date, with changes in their fair value recorded within financial result of the consolidated statements of comprehensive loss. The fair value of the embedded derivative financial instruments, which are not traded in an active market, is determined by management using valuation techniques which are dependent on inputs such as share prices, share volume, discount rates and foreign currency exchange rates. Finance income (Tranche A) and expense (Tranche B1) resulting from the revaluations described above amounted to kEUR 93 and kEUR 808, respectively, for the year ended December 31, 2020.

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:

Parameter	Tranche 1	Tranche 2
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,			
	2020		2019	
	Number of options	Weighted-average exercise price (USD)	Number of options	Weighted-average exercise price (USD)
Outstanding at January 1	353,400	14.46	353,400	14.46
Granted during the year	--	--	--	--
Exercised during the year	--	--	--	--
Forfeited during the year	--	--	--	--
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, 2020 no options are exercisable and 353,400 options are outstanding. The weighted-average contractual life of the options at December 31, 2020 amounts to 6.5 years (December 31, 2019: 7.5 years).

The expense recognized in the statement of comprehensive loss totaled kEUR 671, kEUR 671 and kEUR 604 for the years ended December 31, 2020, 2019 and 2018, respectively.

Increase of minority shareholding of voxeljet China

Set out below is summarized financial information for the subsidiary that has non-controlling interests that are material to the Group. The amounts disclosed for the subsidiary are based on IFRS and before inter-company eliminations.

	December 31,
	2020
	(€ in thousands)
voxeljet China Co. Ltd. **Summarized balance sheet**	
Current assets	2,603
Current liabilities	4,351
Current net liabilities	**1,748**
Non-current assets	1,831
Non-current liabilities	852
Non-current net assets	**979**
Net liabilities	**769**
Accumulated NCI	**(155)**

	Year Ended December 31,
	2020
	(€ in thousands)
voxeljet China Co. Ltd. **Summarized statement of comprehensive income**	
Revenue	2,179
Loss for the period	**(473)**
Other comprehensive income	--
Total comprehensive loss	**(473)**
Loss allocated to NCI	**(142)**

	Year Ended December 31,
	2020
	(€ in thousands)
voxeljet China Co. Ltd.	
Summarized cash flows	
Cash flows from operating activities	(1,504)
Cash flows from investing activities	(39)
Cash flows from financing activities	963
Net increase/ (decrease) in cash and cash equivalents	**(580)**

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.

The Company has not disclosed prior period information, as management considers it as not material.

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.

Due to the short-term nature of the current receivables, their carrying amount is considered to be the same as their fair value.

Impairment

	Year Ended December 31,	
	2020	2019
	(€ in thousands)	
Balance at beginning of period	**187**	**383**
Provisions	52	38
Write-offs	(26)	(102)
Release to income	(30)	(132)
Balance at end of period	**183**	**187**

Release to income includes changes in expected loss allowance which amounted to a gain of kEUR 23 for the business year 2020, and were recorded in other operating income in the Company's consolidated statements of comprehensive loss.

8. Inventories

Inventories consisted of the following for the years reported:

INVENTORIES BY CATEGORY

	December 31,	
	2020	2019
	(€ in thousands)	
Raw materials	3,733	4,109
Work in progress	7,661	8,350
Total	**11,394**	**12,459**

The reserve for slow-moving inventory regarding work in progress was kEUR 0 and kEUR 1 in 2020 and 2019, 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 included 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. The provision for the restructuring has been completely used within 2020.

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

In 2019, 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 included reduction in headcount and disposal of certain assets. Consequently the lease of the Milton Keynes facility has been early-terminated and ended 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**

After the restructuring launched in 2019, management initiated in December 2020 the liquidation process of voxeljet UK. Following cost-benefit considerations and taking into account the subsidiary's main purpose -particularly attracting customers attention to voxeljet's products- management came to the conclusion, that it is not necessary to maintain a legal entity in the UK. The remaining employees, solely sales representatives, have been transferred to voxeljet AG and will continue to focus on selling 3D printed parts and 3D printers in the United Kingdom and Northern Europe. The wind-up will help to reduce overall costs, especially within the function administration, but not at all adversely affect the activities of the UK colleagues.

10. Intangible assets and property, plant and equipment

Intangible assets

	December 31,	
	2020	**2019**
	(€ in thousands)	
Software	806	611
Licenses	56	83
Prepayments made on intangible assets	281	662
Total	**1,143**	**1,356**

In 2020, prepayments amounting to kEUR 454 related to capitalized customizing cost in connection with our ERP system have been transferred to software as the project has been completed. The decrease related to software is related to the scheduled amortization partially offset by additions.

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Property, plant and equipment

	December 31, 2020	December 31, 2019
	(€ in thousands)	
Land, buildings and leasehold improvements	18,698	20,045
Plant and machinery	3,982	5,779
Other facilities, factory and office equipment	1,039	1,459
Assets under construction and prepayments made	55	60
Total	**23,774**	**27,343**
Thereof pledged assets of Property, Plant and Equipment	13,069	6,618

The pledged assets consist of the new office building and the new production hall, which were completed in 2017, as well as seven (in 2019: eight) 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.

Amounts added to plant and machinery relating to self-constructed 3D printers are considered non-cash transactions, which totaled to kEUR 516 and kEUR 883 in the years ended December 31, 2020 and 2019, respectively.

The following table presents the composition of, and annual movement in, intangible assets and property, plant and equipment for the years 2020 and 2019, respectively:

2020

(€ in thousands)

	Acquisition and manufacturing cost						Accumulated depreciation and amortization					Carrying amount
	01/01/2020	Additions	Disposals	Transfer	FX	12/31/2020	01/01/2020	Current year	Disposals	FX	12/31/2020	12/31/2020
Intangible assets												
Software	1,551	69	26	454	(2)	2,046	940	327	26	(1)	1,240	806
Licenses	245	--	--	--	--	245	162	27	--	--	189	56
Prepayments made on intangible assets	662	89	16	(454)	--	281	--	--	--	--	--	281
Total	**2,458**	**158**	**42**	**0**	**(2)**	**2,572**	**1,102**	**354**	**26**	**(1)**	**1,429**	**1,143**
Property, plant and equipment												
Land, buildings and leasehold improvements	22,885	13	65	--	(370)	22,463	2,840	1,001	2	(74)	3,765	18,698
Plant and machinery	14,032	752	4,595	--	(529)	9,660	8,253	1,551	3,921	(205)	5,678	3,982
Other facilities, factory and office equipment	4,142	189	314	--	(41)	3,976	2,683	536	257	(25)	2,937	1,039
Assets under construction and prepayments made	60	--	--	--	(5)	55	--	--	--	--	--	55
Total	**41,119**	**954**	**4,974**	**0**	**(945)**	**36,154**	**13,776**	**3,088**	**4,180**	**(304)**	**12,380**	**23,774**

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**

(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 “Summary of significant accounting policies” to the consolidated financial statements.

11. Other liabilities and provisions

	December 31,	
	2020	2019
	(€ in thousands)	
Employee bonus	334	397
Liabilities from payroll	237	301
Accruals for commissions	236	38
Accrual for warranty	228	241
Accruals for compensation of supervisory board	180	180
Accruals for vacation and overtime	124	190
Accruals for licenses	68	62
Liabilities from VAT	27	32
Accrual for restructuring	--	604
Others	149	284
Total	**1,583**	**2,329**

As of December 31, 2020, other liabilities and provisions include kEUR 5 as non-current related to the line item others.

The accruals for restructuring as of December 31, 2019 amounting to kEUR 604 related 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, 2020	Usage	Addition	Reversal	December 31, 2020
Employee bonus	397	(397)	334	--	334
Liabilities from payroll	301	(301)	237	--	237
Accruals for commissions	38	(38)	236	--	236
Accrual for warranty	241	(241)	228	--	228
Accruals for compensation of supervisory board	180	(180)	180	--	180
Accruals for vacation and overtime	190	(190)	124	--	124
Accruals for licenses	62	(62)	68	--	68
Accruals for education and training	--	--	41	--	41
Accrual for restructuring	604	(604)	--	--	--
Total	**2,013**	**(2,013)**	**1,448**	**--**	**1,448**

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

12. Additional disclosures to 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 Group uses the following hierarchy for determining the fair value of financial instruments:

- 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

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

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			
12/31/2020	**FVTPL**	**FVOCI**	**Assets at amortized cost**	**Liabilities at amortized cost**	**Total carrying amount**	**Level 1**	**Level 2**	**Level 3**	**Total**
Total assets	**5,351**	**5**	**20,008**	**--**	**15,360**				
Current assets	**5,351**	**--**	**10,004**	**--**	**15,355**				
Cash and cash equivalents	**--**	**--**	**5,324**	**--**	**5,324**				
Financial assets	**5,351**	--	--	--	**5,351**	**2,984**	**2,367**	**--**	**5,351**
Bond funds	984	--	--	--	984	984	--	--	984
Bond funds (restricted)	2,000	--	--	--	2,000	2,000	--	--	2,000
Derivative financial instruments	2,367	--	--	--	2,367	--	2,367	--	2,367
Trade receivables, net	**--**	**--**	**4,680**	**--**	**4,680**				
Non-current assets	**--**	**5**	**--**	**--**	**5**				
Financial assets	**--**	**5**	**--**	**--**	**5**	**--**	**--**	**5**	**5**
Equity securities	--	5	--	--	5	--	--	5	5
Total liabilities	**808**	**--**	**--**	**25,108**	**29,040**				
Current liabilities	**808**	**--**	**--**	**20,606**	**21,726**				
Trade payables	**--**	**--**	**--**	**1,956**	**1,956**				
Financial liabilities	**808**	**--**	**--**	**18,650**	**19,770**	**--**	**808**	**24,858**	**25,666**
Derivative financial instruments	808	--	--	--	808	--	808	--	808
Long-term debt	--	--	--	18,650	18,650	--	--	24,858	24,858
Lease liability	--	--	--	--	312	--	--	--	n/a
Non-current liabilities	**--**	--	--	**4,502**	**7,314**				
Financial liabilities	**--**	--	--	**4,502**	**7,314**	--	**--**	**4,203**	**4,203**
Long-term debt	--	--	--	4,502	4,502	--	--	4,203	4,203
Lease liability	--	--	--	--	2,812	--	--	--	n/a

12/31/2019	Carrying amount FVTPL	FVOCI	Assets at amortized cost	Liabilities at amortized cost	Total carrying amount	Fair Value Level 1	Level 2	Level 3	Total
Financial assets measured at fair value									
Current assets									
Bond funds [1]	3,667	--	--	--	3,667	3,667	--	--	3,667
Bond funds (restricted) [1]	2,000	--	--	--	2,000	2,000	--	--	2,000
Note receivable [1]	1,278	--	--	--	1,278	1,278	--	--	1,278
Non-current assets									
Derivative financial instruments [2]	2,274	--	--	--	2,274	--	2,274	--	2,274
Equity securities	--	5	--	--	5	--	--	5	5
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									
Current liabilities									
Long-term debt [3]	--	--	--	10,864	10,864	--	--	10,858	10,858
Trade payables	--	--	--	2,797	2,797	--	--	--	n/a
Non-current liabilities									
Long-term debt [3]	--	--	--	6,682	6,682	--	--	6,148	6,148

[1] Comparative figures for the year ended December 31, 2019, were revised related to the amendment of classification of short-term investments. For further information, see Note 2 “Preparation of financial statements” to the consolidated financial statements.

[2] Comparative figures for the year ended December 31, 2019, were revised related to the recalculation of the performance participation interest related to the Finance Contract with the EIB. For further information, see Note 2 “Preparation of financial statements” to the consolidated financial statements.

[3] Previously presented under level 2.

The financial assets with a carrying amount of kEUR 5,356 reported on the Company’s statement of financial position at December 31, 2020 were comprised of investments in two bond funds (kEUR 2,984, thereof kEUR 2,000 restricted), a derivative financial instrument (kEUR 2,367) all reported as current financial assets and equity securities (kEUR 5) reported as a non-current asset.

The financial assets with a carrying amount of kEUR 9,687 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 2,274) and equity securities (kEUR 5) reported as a non-current asset.

The valuation techniques used to value financial instruments include the use of quoted market prices or dealer quotes for similar instruments as well as discounted cash flow analysis.

The fair value of the Company’s investments in the bond funds and note receivable was determined based on the quoted unit prices received by the fund management company.

The fair value of the derivative financial instruments that are not traded in an active market is determined using valuation techniques which maximise the use of observable market data and rely as little as possible on entity-specific estimates. The fair values have been determined based on share prices and the discount rates used were adjusted for counterparty or own credit risk.

The fair value of long-term debt was determined using discounted cash flow models based on the relevant forward interest rate yield curves, considering the credit risk of voxeljet.

Due to their short maturity and the current low level of interest rates, the carrying amounts of cash and cash equivalents, restricted cash, trade receivables, trade payables, credit lines and bank overdrafts approximate fair value.

The group's policy is to recognize transfers into and transfers out of fair value hierarchy levels as at the end of the reporting period.

In 2020, there were no transfers of financial instruments measured at fair value between level 1 and level 2.

The following table provides an overview of the gains and losses for financial assets and liabilities AC and FVTPL:

	Year Ended December 31, 2020 (€ in thousands)
Financial asset measured at amortized cost	**(31)**
Total interest expense	(3)
Other operating income from change of impairment	182
Other operating income from unrealized foreign currency translation	50
Other operating expense from change of impairment	(120)
Other operating expense from unrealized foreign currency translation	(140)
Financial asset measured at fair value through profit or loss	**94**
Total interest income	171
Total interest expense	(10)
Other operating income from unrealized foreign currency translation	32
Other operating expense from unrealized foreign currency translation	(99)
Financial liabilties measured at amortized cost	**(1,769)**
Total interest expense	(1,769)
Other operating income from unrealized foreign currency translation	3
Other operating expense from unrealized foreign currency translation	(3)
Financial liabilties measured at fair value through profit or loss	**(808)**
Total interest expense	(808)
Total	**(2,514)**

The Company has not disclosed prior period information, as management considers it as not material.

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

	Currency	Nominal interest rate	Year of maturity	December 31, 2020 Face value	December 31, 2020 Carrying amount	December 31, 2019 Face value	December 31, 2019 Carrying amount
				(€ in thousands)			
Secured bank loan	EUR	3.27%	2020	800	--	800	73
Secured bank loan	EUR	2.29%	2021	700	110	700	254
Secured bank loan	EUR	2.35%	2021	1,000	70	1,000	278
Secured bank loan	EUR	2.47%	2038	2,000	1,695	2,000	1,774
Secured bank loan	EUR	2.72%	2038	1,000	848	1,000	887
Secured bank loan	EUR	2.42%	2038	500	429	500	448
Secured bank loan	EUR	2.73%	2037	500	472	500	446
Secured bank loan	EUR	1.75%	2040	1,000	887	1,000	899
Secured bank loan	EUR	2.48%	2022	675	238	675	376
Secured bank loan	EUR	2.49%	2024	500	332	500	429
Unsecured bank loan	EUR	3.92%	2025	29	24	29	24
Unsecured bank loan	USD	2.90%	2022	40	10	40	17
Secured bank loan	EUR	0.00%	2022	10,000	12,549	10,000	11,641
Secured bank loan	EUR	12.00%	2025	5,000	5,478	--	--
Lease liabilities	EUR	1.6%-9.3%	2020-2029	3,592	3,124	3,988	3,610
Total interest-bearing liabilities				**27,336**	**26,266**	**22,732**	**21,156**

The secured bank loans are secured over land and buildings, machinery and equipment and pledged bond funds with a carrying amount of kEUR 15,000 (2019: kEUR 5,000), kEUR 1,104 (2019: kEUR 1,618) and kEUR 2,000 (2019: kEUR 2,000), 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 February 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%; (ii) in February 2016, the Company entered into a € 1.0 million loan agreement due April 30, 2038. Interest is payable at a fixed rate of 2.72%; (iii) in February 2016, the Company entered into a € 1.0 million loan agreement due April 30, 2040. Interest is payable at a variable rate of 1.75%; (iv) In December 2016, the Company entered into a € 0.5 million loan agreement due July 30, 2038. Interest is payable at a fixed rate of 2.42%; and (v) in December 2016, the Company entered into a € 0.5 million loan agreement due September 30, 2037. Interest is payable at a fixed rate of 2.73%. 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.

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.

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

Under the Finance 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 and beyond. 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 Finance 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 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 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, within which voxeljet could rectify the breach and during which the EIB could not 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 June 2020, the Company announced that the EIB and voxeljet further expanded their partnership. The EIB disbursed € 5.0 million of the second tranche (tranche B1) of the loan in June 2020 with a bullet repayment after five years. In addition, the EIB and the Company amended the financial covenants in the Finance Contract to replace the Total Net Financial Debt to EBITDA ratio with the Minimum Cash Covenant. As of June 30, 2020, pursuant to the semi-annual financial testing prescribed by the Finance Contract, as amended, the Company was in compliance with the Minimum Cash Covenant. However, in March 2021, the Company discovered that its calculation of cash and cash equivalents for determining compliance with the Minimum Cash Covenant was incorrect and, accordingly, the Company was not in compliance with the Minimum Cash Covenant as of December 31, 2020. Also in March 2021, the Company received a waiver from the EIB for the noncompliance with the Minimum Cash Covenant, pursuant to which (i) the EIB agreed that it will not demand immediate repayment of the outstanding amounts owed and (ii) the EIB and the Company amended the financial covenants in the Finance Contract to clarify the calculation of cash and cash equivalents for determining compliance with the Minimum Cash Covenant.

At the time tranche B1 of € 5 million was received in June 2020, the EIB under the Synthetic Warrant Agreement, as last amended on May 29, 2020, was entitled to receive as consideration cash equal to the market value of 404,928 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 of the first tranche). Related to tranche B1, voxeljet and the EIB also agreed under the Finance Contract, last amended on May 29, 2020, a PIK interest (payment in kind interest) rate of 5% in addition to a 7% fixed interest rate.

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,		
	2020	**2019**	**2018 (1)**
		(€ in thousands)	
Personnel expenses	(4,594)	(5,583)	(5,404)
Material costs	(6,559)	(6,796)	(7,082)
Depreciation	(2,158)	(2,686)	(2,197)
Other expenses	(1,502)	(2,382)	(2,598)
Allowance for slow-moving inventory	1	21	417
Total	**(14,812)**	**(17,426)**	**(16,864)**

(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 "Summary of significant accounting policies" to the consolidated financial statements.

In 2020, other expenses primarily consisted of expenses related to insurances (kEUR 283), cost of maintenance (kEUR 208), travel expenses (kEUR 171), rental and building expenses (kEUR 104) and license fees (kEUR 53).

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).

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,		
	2020	2019	2018
		(€ in thousands)	
Government grant income	321	21	11
Amortization of gain on sale and leaseback transactions	--	--	119
Reimbursement of transaction costs	68	127	121
Gains from foreign exchange transactions	849	1,657	794
Other	365	338	252
Total	**1,603**	**2,143**	**1,297**

Other operating income includes an amount of kEUR 75 (2019: kEUR 132, 2018: kEUR 38) for the movement of impairment on trade receivables.

OTHER OPERATING EXPENSE

	Year Ended December 31,		
	2020	2019	2018
		(€ in thousands)	
Impairment loss on trade receivables	120	60	224
Losses from foreign exchange transactions	2,545	880	511
Impairment loss on inventory	100	--	--
Other	34	5	16
Total	**2,799**	**945**	**751**

15. Financial result

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

	Year Ended December 31,		
	2020	2019 (1) (2)	2018 (1) (2)
		(€ in thousands)	
Interest expense	**(2,589)**	**(1,349)**	**(1,279)**
Interest expense on lease liability (2018: Finance lease obligations)	(167)	(190)	(69)
Long-term debt	(1,602)	(993)	(944)
Expense from revaluation of derivative financial instruments	(808)	(106)	--
Fair value valuation of financial assets	(10)	--	(136)
Other	(2)	(60)	(130)
Interest income	**184**	**318**	**2,158**
Payout of bond funds	78	126	58
Income from revaluation of derivative financial instruments	93	--	2,065
Fair value valuation of financial assets	--	174	18
Other	13	18	17

Financial result	**(2,405)**	**(1,031)**	**879**

[1] Comparative figures for the year ended December 31, 2019 and December 31, 2018 were revised related to the amendment of classification of short-term investments. For further information, see Note 2 “Preparation of financial statements” to the consolidated financial statements.

[2] Comparative figures for the year ended December 31, 2019 and December 31, 2018 were revised related to the recalculation of the performance participation interest related to the Finance Contract with the EIB. For further information, see Note 2 “Preparation of financial statements” to the consolidated financial statements.

16. Income taxes

Income taxes consist of the following for the years reported:

Income tax (expense) income

	Year Ended December 31,		
	2020	**2019 [1] [2]**	**2018 [1] [2]**
		(€ in thousands)	
Current tax (expense) income	--	--	--
Deferred tax (expense) income	88	(39)	(64)
Total	88	(39)	(64)

[1] Comparative figures for the year ended December 31, 2019 and December 31, 2018 were revised related to the amendment of classification of short-term investments. For further information, see Note 2 “Preparation of financial statements” to the consolidated financial statements.

[2] Comparative figures for the year ended December 31, 2019 and December 31, 2018 were revised related to the recalculation of the performance participation interest related to the Finance Contract with the EIB. For further information, see Note 2 “Preparation of financial statements” to the consolidated financial statements.

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,			
	2020		2019	
	(€ in thousands)			
	Deferred tax assets	Deferred tax liabilities	Deferred tax assets	Deferred tax liabilities
Trade receivables	--	(8)	--	(8)
Other receivables and current assets	1,092	(92)	1,050	(118)
Inventories	16	(291)	11	--
Property, Plant & Equipment	5	(559)	99	(603)
Trade liabilities	429	--	206	--
Current financial liabilities	1,148	--	1,020	(183)
Current financial assets	65	--	--	(710)
Other current liabilities and provisions	239	(2,053)	19	(887)
Contract liabilities	762	(762)	247	(247)
Non-current other assets	--	(28)	--	--
Non-current financial liabilities	764	--	--	--
Non-current financial assets	--	(663)		
Intangible assets	--	--	--	(1)
Tax losses carried forward	138	--	227	--
Valuation allowance	(248)	(6)	(265)	--
Tax assets (liabilities)	4,410	(4,462)	2,615	(2,757)
Set off of tax	(4,410)	4,410	(2,615)	2,615
Net tax	**--**	**(52)**	**--**	**(142)**

At December 31, 2020 voxeljet had gross loss carry-forwards for corporation tax and trade tax losses of kEUR 49,698 and kEUR 48,630, 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 from voxeljet Amercia amounting to kEUR 2,480, also without restriction for future offset against taxable profits.

Foreign tax loss carry-forwards from voxeljet China and voxeljet India amounting to kEUR 3,126 and kEUR 326, which can be carried forward for five and eight years, respectively for future offset against taxable profits.

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,		
	2020	2019 (1) (2)	2018 (1) (2) (3)
	(€ in thousands)		
Loss before tax	(15,569)	(13,939)	(8,683)
Tax expense at prevailing statutory rate (28%)	4,359	3,903	2,431
Non-deductible expenses	(732)	(447)	(196)
Non-taxable income	80	--	242
Tax-rate related differences	(69)	(198)	(128)
Unrecognized temporary differences and tax losses	(3,550)	(3,297)	(2,413)
Income tax (expense) income	**88**	**(39)**	**(64)**

(1) Comparative figures for the year ended December 31, 2019 and December 31, 2018 were revised related to the amendment of classification of short-term investments. For further information, see Note 2 “Preparation of financial statements” to the consolidated financial statements.

(2) Comparative figures for the year ended December 31, 2019 and December 31, 2018 were revised related to the recalculation of the performance participation interest related to the Finance Contract with the EIB. For further information, see Note 2 “Preparation of financial statements” to the consolidated financial statements.

(3) 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 **“**Summary of significant accounting policies” to the consolidated financial statements.

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,		
	2020	**2019**	**2018**
		(€ in thousands)	
Wages and salaries	11,568	13,885	12,772
Employee stock option plan	671	671	604
Social security contributions	2,289	2,710	2,527
Total	**14,528**	**17,266**	**15,903**

voxeljet AG offers to its employees a defined contribution plan called “MetallRente”. The contributions paid by the Company amounted to kEUR 65, kEUR 66 and kEUR 61 for the years ended December 31, 2020, 2019 and 2018, respectively and is presented within social security contributions. The employer’s contribution into the mandatory German state plan amounted to kEUR 754, kEUR 889 and kEUR 849 for the years ended December 31, 2020, 2019, and 2018, 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, 2020 (€ in thousands)			
	SYSTEMS	SERVICES	CONSO LIDATION	GROUP
Revenues	**13,159**	**9,011**	**(603)**	**21,567**
third party	12,556	9,011	—	21,567
intra-segment	603	—	(603)	—
Cost of sales	**(8,115)**	**(6,697)**		**(14,812)**
Gross profit	**4,441**	**2,314**		**6,755**
Gross profit in %	**35.4%**	**25.7%**		**31.3%**
Operating Expenses				**(18,723)**
Other operating expenses				**(2,799)**
Other operating income				**1,603**
Operating loss				**(13,164)**
Finance expense				(2,589)
Finance income				184
Financial result				**(2,405)**
Loss before income taxes				**(15,569)**
Income tax income (expense)				88
Net loss				**(15,481)**

	Year Ended December 31,			
	2019		2018 (1)	
	(€ in thousands)			
	SYSTEMS	SERVICES	SYSTEMS	SERVICES
Revenues	13,454	11,148	12,248	13,761
Gross profit	4,284	2,892	3,708	5,437
Gross profit in %	31.8%	25.9%	30.3%	39.5%
PPE	13,093	14,250	11,804	15,871

(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 "Summary of significant accounting policies" to the consolidated financial statements.

Systems revenues include revenues from the sales of used 3D printers of kEUR 2,328, kEUR 2,007, and kEUR 1,489 for the years ended December 31, 2020, 2019, and 2018, 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,		
	2020	2019	2018
		(€ in thousands)	
EMEA	**11,466**	**11,265**	**14,673**
Germany	4,647	4,474	6,605
France	841	1,314	2,667
Great Britain	963	1,224	1,050
Others	5,015	4,253	4,351
Asia Pacific	**4,521**	**6,302**	**5,450**
South Korea	1,787	1,242	888
China	1,101	3,993	2,134
Indonesia	93	55	1,819
Others	1,540	1,012	609
Americas	**5,580**	**7,035**	**5,886**
United States	5,453	6,843	5,802
Others	127	192	84
Total	**21,567**	**24,602**	**26,009**

Revenues generated in the region Asia Pacific included kEUR 1,406 related to Japan for the business year 2020, presented in others. Revenues generated in the region EMEA included kEUR 1,322 related to Russia for the business year 2020, presented in others.

NON-CURRENT ASSETS BY GEOGRAPHICAL REGION

	December 31,	
	2020	2019 (1) (2)
	(€ in thousands)	
EMEA	19,730	23,211
Germany	19,730	23,208
Great Britain	--	3
Asia Pacific	1,609	2,095
Americas	3,751	5,746
United States	3,751	5,746
Total	**25,090**	**31,052**

(1) Comparative figures for the year ended December 31, 2019 and December 31, 2018 were revised related to the amendment of classification of short-term investments. For further information, see Note 2 "Preparation of financial statements" to the consolidated financial statements.

(2) Comparative figures for the year ended December 31, 2019 and December 31, 2018 were revised related to the recalculation of the performance participation interest related to the Finance Contract with the EIB. For further information, see Note 2 "Preparation of financial statements" to the consolidated financial statements.

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 Company has 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. Portions of the long-term debt include two embedded derivative financial instruments, one recorded as a financial assets one recorded as a financial liabilities, related to a future interest payment which are linked to the Company's stock price (Performance Participation Interest).

The main risks arising from the Group's financial instruments are liquidity risk, foreign exchange risk, credit risk, interest rate risk and equity price risks. The measures taken by Management to manage each of these risks are summarized below.

Material transactions related to activities in the area of financial instruments like entering into loan agreements or investments in bond funds require the prior approval of the Chief Financial Officer. The Company did not enter into any derivative financial instruments for hedging purposes in 2020.

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 the Euro, U.S. Dollar, 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.

The Company invoiced 68% in 2020, 62% in 2019 and 70% in 2018 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.

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. 2020 the amount loaned to voxeljet UK by voxeljet AG totaled GBP 7.9 million (€ 8.7 million). A relative increase/decrease in the value of the Euro against the British Pound Sterling of 10% would lead to a loss of € 0.8 million/gain of € 1.0 million. 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 the British Pound Sterling of 10% would have led to a loss of € 0.8 million. The amount loaned to voxeljet America totaled to USD 9.0 million (€ 7.4 million) as of December 31, 2020. An increase/decrease in the value of the Euro against the U.S. Dollar of 10% would lead to a loss of € 0.7 million/gain of € 0.8 million. As of December 31, 2019 the amount loaned to voxeljet America totaled to USD 5.6 million (€ 5.0 million). An increase in the value of the Euro against the U.S. Dollar of 10% would have led to a loss of € 0.5 million.

For the year ended December 31, 2020, voxeljet generated 31.7% of its revenues in the eurozone. Additionally, the majority of the Company's sourcing transactions are also transacted in Euros in that zone.

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 base points in interest rates would increase or decrease interest expense by less than kEUR 2.

In connection with the first tranche amounting to € 10.0 million and the first portion of the second tranche (tranche B1) amounting to € 5.0 million, both related to the loan received by the EIB, the Company issued in each case 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. Both portions of the loan are accounted for according to the effective interest method. The effective interest rate of the first tranche is 7.58% and of the first portion of the second tranche is 17.57%. In each case, the effective interest rates were imputed after bifurcation of each embedded derivative financial instrument on the date of the loan disbursement. Changes in the market interest rate will not affect the loan accounting. However, the derivative instruments are 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 instruments; decreases in the risk-free rate will lead to an increase in the fair value of the derivative instruments.

Equity price risk

The Company is also exposed to equity price risks which arise from embedded derivative financial instruments (PPI) bifurcated from the loans received by the EIB as mentioned above, which depend upon the Company's share price. Changes in the Company's share price will affect the value of the equity forward derivative instruments (increasing share prices as compared to the share price at disbursement date will lead to a negative fair value of the derivatives, decreasing share prices will lead to a positive fair value of the derivatives). An increase/decrease of the price per share by USD 1.00 leads to a decrease/increase of the derivative asset (Tranche A) by approximately kEUR 207. An increase/decrease of the price per share by USD 1.00 leads to a increase/decrease of the derivative liability (Tranche B1) by approximately kEUR 330.

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, other current financial assets, and trade receivables represents the maximum credit exposure of € 15.4 million (2019: € 17.7 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. There were no customer loans outstanding as of December 31, 2020 and 2019. 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.

December 31, 2020

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%	1,686	2	1,684
Grades 5-7:	Fair risk	B+ to BBB	1.3%	2,209	29	2,180
Grades 8-9:	Substandard	CCC- to B	7.0%	876	61	815
Grade 10:	Doubtful	C to CC	25.0%	2	1	1
Grade 11:	Loss	D	100.0%	15	15	0
				4,788	**108**	**4,680**

Grades		Equivalent to external credit rating (Standard & Poor's)	Weighted-average loss rate	Gross carrying amount	Impairment loss allowance	Net carrying amount
December 31, 2019						
					(€ 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**

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.

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 and financing liabilities. For further discussion see Note 2.

The following are the contractual cash flows of financial liabilities and trade payables at the reporting date. The amounts are gross and undiscounted and include contractual interest payments.

December 31, 2020
(€ in thousands)

	carrying amount	Contractual cash flow: Total	2 months or less	2-12 months	1-3 years	3-5 years	More than 5 years
Long-term debt	23,152	(31,280)	(295)	(25,236)	(915)	(625)	(4,209)
Lease liability	3,124	(3,715)	(71)	(341)	(1,627)	(637)	(1,039)
Trade payables	1,956	(1,956)	(1,956)	--	--	--	--
Total	**28,232**	**(36,951)**	**(2,322)**	**(25,577)**	**(2,542)**	**(1,262)**	**(5,248)**

December 31, 2019
(€ in thousands)

	carrying amount	Contractual cash flow: Total	2 months or less	2-12 months	1-3 years	3-5 years	More than 5 years
Long-term debt	17,546	(22,050)	(178)	(10,818)	(1,252)	(5,296)	(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**	**(29,256)**	**(3,077)**	**(11,265)**	**(2,306)**	**(6,603)**	**(6,005)**

In spite of the significant cash outflow in 2020 and 2019, the Company's short and mid-term liquidity needs are currently covered. This is supported through the current liquidity forecast including certain sensitivities. The 24-months business plan includes further raising of additional capital through additional debt, equity or other alternatives to ensure the cash requirements of the Company. The cash position of the Company has significantly improved in the first quarter of 2021 due to two successful capital increases in January and February 2021.

20. Reconciliation of movements of liabilities to cash flows arising from financing activities

(€ in thousands)	Liabilities		Equity				
	Other loans and borrowings	Lease liabilities	Subscribed capital	Capital reserves	Accumulated deficit (1) (2)	Non-controlling interests	Total (1) (2)
Balance at January 1, 2020	**17,546**	**3,610**	**4,836**	**88,077**	**(60,124)**	**(13)**	**53,932**
Changes from financing cash flows							
Proceeds from loans and borrowings	5,000	—	—	—	—	—	**5,000**
Repayment of borrowings	(863)	—	—	—	—	—	**(863)**
Payment of lease liabilities	—	(412)	—	—	—	—	**(412)**
Total changes from financing cash flows	**4,137**	**(412)**	**—**	**—**	**—**	**—**	**3,725**
Other changes							
Liability-related							
New leases	—	(138)	—	—	—	—	**(138)**
Reclassification	—	22	—	—	—	—	**22**
Interest expense	1,602	167	—	—	—	—	**1,769**
Interest paid	(133)	(125)	—	—	—	—	**(258)**
Total liability-related other changes	**1,469**	**(74)**	**—**	**—**	**—**	**—**	**1,395**
							—
Total equity-related other changes	**—**	**—**	**—**	**671**	**(15,339)**	**(142)**	**(14,810)**
							—
Balance at December 31, 2020	**23,152**	**3,124**	**4,836**	**88,748**	**(75,463)**	**(155)**	**44,242**

(€ in thousands)	Liabilities			Equity				
	Other loans and borrowings	Finance lease liabilities	Lease liabilities	Subscribed capital	Capital reserves	Accumulated deficit (1) (2)	Non-controlling interests	Total (1) (2)
Balance at January 1, 2019	**17,066**	**105**	**—**	**4,836**	**86,803**	**(46,410)**	**35**	**62,435**
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**	**(46,410)**	**35**	**65,904**
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**	**(13,714)**	**(48)**	**(12,488)**
								—
Balance at December 31, 2019	**17,546**	**—**	**3,610**	**4,836**	**88,077**	**(60,124)**	**(13)**	**53,932**

(1) Comparative figures for the year ended December 31, 2019, were revised related to the amendment of classification of short-term investments. For further information, see Note 2 “Preparation of financial statements” to the consolidated financial statements.

(2) Comparative figures for the year ended December 31, 2019, were revised related to the recalculation of the performance participation interest related to the Finance Contract with the EIB. For further information, see Note 2 “Preparation of financial statements” to the consolidated financial statements.

21. 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 2020 and 2019 was as follows:

CAPITAL STRUCTURE

	December 31,	
	2020	**2019 (1) (2)**
	(€ in thousands)	
Equity	**19,641**	**33,518**
Share of total equity and liabilities	36.9%	53.6%
Current financial liabilities	19,770	11,290
Non-current financial liabilities	7,314	9,866
Total financial liabilities	**27,084**	**21,156**
Share of total equity and liabilities	50.9%	33.8%
Total equity and liabilities	**53,227**	**62,565**

(1) Comparative figures for the year ended December 31, 2019, were revised related to the amendment of classification of short-term investments. For further information, see Note 2 “Preparation of financial statements” to the consolidated financial statements.

(2) Comparative figures for the year ended December 31, 2019, were revised related to the recalculation of the performance participation interest related to the Finance Contract with the EIB. For further information, see Note 2 “Preparation of financial statements” to the consolidated financial statements.

LOAN COVENANTS

Under the terms of the major borrowing facilities, voxeljet is required to comply with the following financial covenants:

- Maintain a minimum amount of cash and cash equivalents
- Maintain a minimum total net financial debt ratio to total equity
- Pledge of a certain security deposit

The Company has breached the minimum cash and cash equivalents covenant as of December 31, 2020, as described in Note 2.

22. Leases

The Group has initially adopted IFRS 16, *Leases* on January 1, 2019. For further information, see 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, 2020	**3,658**	**72**	**254**	**3,984**
Depreciation charge of the year	(508)	(27)	(147)	**(682)**
Additions to the right-of-use assets	11	--	148	**159**
Derecognition of the right-of-use assets	(68)	--	--	**(68)**
FX	(201)	--	(1)	**(201)**
Balance at December 31, 2020	**2,892**	**45**	**254**	**3,191**

Amounts recognized in profit or loss:

	2020	2019
	(€ in thousands)	
Leases under IFRS 16		
Interest on lease liabilities	167	190
Expenses relating to short-term-leases	--	39
Depreciation charge of the year	682	765

Amounts recognized in statement of cash flows:

	2020	2019
	(€ in thousands)	
Total cash outflow for leases	(412)	(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:

	2020	2019
	(€ in thousands)	
Operating lease under IFRS 16		
Less than one year	--	38

23. 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.

24. 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,		
	2020	**2019**	**2018**
		(€ in thousands)	
Fixed compensation	761	782	781
Variable compensation	--	--	--
Compensation from stock option plan	353	353	360
Total	**1,114**	**1,135**	**1,141**

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 2018, 2019 and 2020.

Ordinary members of the Supervisory Board receive a fixed remuneration in the amount of kEUR 40 per annum. The chairman and vice chairman of the Supervisory Board receive a higher fixed remuneration in the amount of kEUR 80 per annum and kEUR 60 per annum, respectively. If a member of the Supervisory Board does not serve for a full year term, the remuneration is paid pro rata temporis. In 2020, the total remuneration for the Supervisory Board amounted to kEUR 180.

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, Gersthofen	Supplier	05/01/2017 - Current
Suzhou Meimai Fast Manufacturing Technology Co., Ltd, Suzhou	Minority shareholder of voxeljet China, Customer	04/11/2016 - Current
DSCS Digital Supply Chain Solutions GmbH, Gersthofen	Customer	05/11/2017 - Current
Michele Neuber	Employee	07/01/2019 - Current

Transactions with Franz Industriebeteiligungen AG comprise the rental of office space in Augsburg, Germany. Rental expenses amounted to kEUR 3, kEUR 2, and kEUR 2 in 2020, 2019 and 2018, respectively. The rental of office space is ongoing and will continue in 2021. In addition, Franz Industriebeteiligungen AG received payments related to the use of certain paintings which are placed in the administrative building in Friedberg. Associated rental expenses amounted to kEUR 2 in 2018. 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 0 and kEUR 7 in 2020, 2019 and 2018, respectively 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 25, kEUR 56 and kEUR 74 in 2020, 2019 and 2018, respectively from 'Andreas Schmid Logistik', where voxeljet's Supervisory Board member Dr. Stefan Söhn served as the Chief Financial Officer until December 2020.

Moreover, voxeljet received orders amounting to kEUR 25, kEUR 164 and kEUR 175 in 2020, 2019 and 2018, respectively from 'Suzhou Meimai Fast Manufacturing Technology Co., Ltd., which is our minority shareholder for voxeljet China.

Further, voxeljet received orders amounting to kEUR 0, kEUR 13 and kEUR 0 in 2020, 2019 and 2018, respectively from 'DSCS Digital Supply Chain Solutions GmbH', which is an associated company of which we own 33.3%.

In addition, voxeljet employs Michele Neuber as an intern. Michele Neuber is the son of Volker Neuber, who has been a member of voxeljet's Supervisory Board since July 2020. He received a salary of kEUR 2 and kEUR 2 in 2020 and 2019, respectively.

voxeljet employed Simon Franz, who is the son of voxeljet's Chief Financial Officer Rudolf Franz, as an intern until July 31, 2019. He received a salary of kEUR 9 and kEUR 12 in 2019 and 2018, respectively.

All related party transactions, voxeljet entered into, were made on an arm's length basis.

25. Equity

At December 31, 2020, 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 18, 2018, voxeljet issued 972,000 ordinary shares, equivalent to 4,860,000 American Depository Shares ("ADS"), at an offering price of $2.57 per ADS (the "Public Offering Price"). The Company received net proceeds of approximately € 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.

On July 31, 2020, the Company announced that it would change the ratio of its ADSs to ordinary shares from each ADS representing one-fifth (1/5) of one ordinary share (5:1) to each ADS representing one ordinary share (1:1). For ADS holders, the ratio change had the same effect as a 1 for 5 reverse ADS split. The ratio change became effective on August 14, 2020 (the "Effective Date"). On the Effective Date, each ADS holder was required to exchange every five (5) ADSs then held for one (1) new ADS (e.g., if a holder of ADSs previously held 50 ADSs, following the ratio change on the Effective Date, such holder helds 10 ADSs). Citibank, N.A., as depositary bank, has arranged for the exchange of the current ADSs for the new ones. There was no change to voxeljet's underlying ordinary shares.

On August 18, 2020, the Company announced that it would voluntarily transfer the listing of the ADSs from the New York Stock Exchange (the "NYSE") to the NASDAQ, effective August 28, 2020, after market close. voxeljet's ADSs began trading as a NASDAQ-listed security at market open on August 31, 2020, and have continued to be listed under the ticker symbol "VJET." Due to the transfer of the listing to the NASDAQ, the Company is no longer subject to the listing requirements of the NYSE. As of December 31, 2020, voxeljet was in compliance with the NASDAQ Listing Rules.

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 € 1,353,416 by issuing up to 1,353,416 new no-par value ordinary shares against contribution in cash or in kind until May 28, 2024. On January 25, 2021 and on February 17, 2021, the Company completed two registered direct offerings and sold of 621,170 and 443,414 ordinary shares in the form ADS. For further information, see Note 26 "Subsequent events" to the consolidated financial statements.

26. Subsequent events

Capital Increases

On January 25, 2021, the Company announced that it has completed its registered direct offering and sale of 621,170 ordinary shares in the form of ADS at a purchase price of € 13.33 per share (this equals $16.16 per ordinary share based on the exchange rate as of the close of business in New York on January 14, 2021).

The gross proceeds of the offering amount to approximately $10 million (€ 8.3 million) before deducting fees and expenses. The Company intends to use the net proceeds of the offering for general corporate purposes. A.G.P./Alliance Global Partners acted as sole placement agent for the offering.

On February 17, 2021, the Company announced that it has completed its registered direct offering and sale of 443,414 ordinary shares in the form of ADS at a purchase price of € 22.27 per share (this equals $26.95 per ordinary share based on the exchange rate as of the close of business in New York on February 9, 2021).

The gross proceeds of the offering amount to approximately $12 million (€ 9.9 million) before deducting fees and expenses. The Company intends to use the net proceeds of the offering for general corporate purposes. A.G.P./Alliance Global Partners acted as sole placement agent for the offering.

After those two capital increases, the number of outstanding shares of the Company as of March 1, 2021 amounts to 5,900,584. Based on this number of shares, loss per share – basic and diluted – for fiscal year 2020 amounts to € 2.61.

Finance Contract Debt Covenant

In June 2020, the Company announced that the EIB and voxeljet further expanded their partnership. The EIB disbursed € 5.0 million of the second tranche (tranche B1) of the loan in June 2020 with a bullet repayment after five years. In addition, the EIB and the Company amended the financial covenants in the Finance Contract to replace the Total Net Financial Debt to EBITDA ratio with the Minimum Cash Covenant. As of June 30, 2020, pursuant to the semi-annual financial testing prescribed by the Finance Contract, as amended, the Company was in compliance with the Minimum Cash Covenant. However, in March 2021, the Company discovered that its calculation of cash and cash equivalents for determining compliance with the Minimum Cash Covenant was incorrect and, accordingly, the Company was not in compliance with the Minimum Cash Covenant as of December 31, 2020. Also in March 2021, the Company received a waiver from the EIB for the noncompliance with the Minimum Cash Covenant, pursuant to which (i) the EIB agreed that it will not demand immediate repayment of the outstanding amounts owed and (ii) the EIB and the Company amended the financial covenants in the Finance Contract to clarify the calculation of cash and cash equivalents for determining compliance with the Minimum Cash Covenant.

DESCRIPTION OF THE REGISTRANT'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE
SECURITIES EXCHANGE ACT OF 1934

The following description sets forth certain material terms and provisions of the securities of voxeljet AG ("voxeljet," or the "Company," "we," "us," and "our") that are registered under Section 12 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). This description also summarizes relevant provisions of German corporate law, including the German Stock Corporation Act (Aktiengesetz, or AktG). The following summary does not purport to be complete and is subject to, and is qualified in its entirety by reference to, the applicable provisions of German corporate law, our rules of procedure of the supervisory board, our rules of procedure of the management board, our articles of association and Deposit Agreement, as amended from time to time, which are incorporated by reference as exhibits to the Annual Report on 20-F of which this Exhibit is a part. We encourage you to read these exhibits for additional information.

General

Our securities include (a) our ordinary shares, at no par value and €1.00 nominal value per share, and (b) our American Depositary Shares (the "ADSs"), each representing one ordinary share, €1.00 nominal value per share. Our ordinary shares are registered under the Exchange Act not for trading purposes, but only in connection with the registration of ADSs pursuant to the requirements of the Securities and Exchange Commission (the "Commission").

Our ADSs are listed on the NASDAQ Capital Market under the trading symbol "VJET."

The following is a description of the rights of (i) the holders of ordinary shares and (ii) ADS holders. Ordinary shares underlying the outstanding ADSs are held by Citibank N.A., as depositary.

Ordinary Shares

The following is a summary of the rights of our holders of our ordinary shares as specified in our articles of association.

Type and Class of Securities

Each ordinary share has no par value and a nominal value of €1.00 per share.

Authorized Ordinary Shares

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 € 1,353,416 by issuing up to 1,353,416 new no par value ordinary shares against contribution in cash or in kind until May 28, 2024. The outstanding shares of our ordinary share are duly authorized, validly issued, fully paid and nonassessable.

Subscription Rights

In principle, shareholders shall be granted subscription rights for new shares. Under German law, the statutory subscription right may also be offered in such a way that the new shares are taken over by a bank or by a financial institution which is then obligated to offer them indirectly to the shareholders for subscription.

Under our articles of association, with the consent of the supervisory board, the management board is authorized to exclude the shareholders' subscription rights in the following circumstances:

- to exclude fractional amounts resulting from the subscription ratio from the statutory subscription right of the shareholders;
- in the case of increases of the share capital against contributions in kind, in particular, but without limitation, to acquire companies, divisions of companies or interests in companies; or
- in the case that the increase of the share capital is against contributions in cash, and provided that the issue price of the new shares is not substantially lower (as defined in the German Stock Corporation Act) than the stock exchange price for our shares of the same class and having the same conditions already listed at the time of the final determination of the issue price, and further provided that the amount of the share capital represented by the shares issued under the exclusion of the statutory subscription right granted pursuant to German law does not exceed 10% of the share capital at the time of this authorization coming into effect or being exercised. The 10% threshold shall include new or treasury shares of the Company which are issued or transferred during the term of this authorized capital on another legal basis under the exclusion of the statutory subscription rights granted pursuant to German law.

According to the German Stock Corporation Act, every shareholder is generally entitled to subscription rights (commonly known as preemptive rights) to any new shares issued within the framework of a capital increase, including convertible bonds, bonds with warrants, profit-sharing rights or income bonds in proportion to the number of shares he or she holds in the corporation's existing share capital. Under German law, these rights do not apply to shares issued out of conditional capital. A minimum subscription period of two weeks must be provided for the exercise of such subscription rights.

Under German law, the shareholders' meeting may pass a resolution excluding subscription rights if at least three-quarters of the share capital represented adopts the resolution. To exclude subscription rights, the management board must also make a report available to the shareholders justifying the exclusion and demonstrating that the company's interest in excluding the subscription rights outweighs the shareholders' interest in having them. In addition to approval by the general shareholders' meeting, the exclusion of subscription rights requires a justification. The justification must be based on the principle that our interest in excluding subscription rights outweighs the shareholders' interest in their subscription rights and may be subject to judicial review. Accordingly, under German law, the exclusion of subscription rights upon the issuance of new shares is permitted, in particular, if we increase the share capital against cash contributions, if the amount of the capital increase does not exceed 10% of the existing share capital and the issue price of the new shares is not significantly lower than the market price of our shares.

The authorization of the management board to issue convertible bonds or other securities convertible into shares must be limited to a period not exceeding five years as of the respective shareholder resolution.

Shareholders' Meetings, Resolutions and Voting Rights

Pursuant to our articles of association, shareholders' meetings may be held at our registered offices, at the registered seat of a German stock exchange or in a German city with more than 100,000 inhabitants. In general, shareholders' meetings are convened by our management board. The supervisory board is additionally required to convene a shareholders' meeting in cases where this is required under binding statutory law (i.e., if this is in the best interest of the Company). In addition, shareholders who, individually or as a group, own at least 5% or €500,000 of our share capital may request that modified or additional items be added to the agenda and that these items be published before the shareholders' meeting take place, and that our management board convene a shareholders' meeting. If our management board does not convene a shareholders' meeting upon such a request, the shareholders may petition the competent German court for authorization to convene a shareholders' meeting.

Each share carries one vote at a shareholders' meeting.

Our articles of association provide that the resolutions of the shareholders' meeting are adopted by a simple majority of the votes cast. To the extent required by law, certain resolutions may have to be approved by a simple majority of share capital represented at the meeting, in addition to the majority of votes cast.

Neither the German laws nor our articles of association provide for a minimum participation for a quorum for our shareholders' meetings.

Under German law, certain resolutions of fundamental importance require the vote of at least three-quarters of the share capital present or represented in the voting at the time of adoption of the resolution. Resolutions of fundamental importance include, in particular, capital increases with exclusion of subscription rights, capital decreases, the creation of authorized or conditional share capital, the dissolution of a company, a merger into or with another company, split-offs and split-ups, the conclusion of inter-company agreements (*Unternehmensverträge*), in particular control agreements (*Beherrschungsverträge*) and profit and loss transfer agreements (*Ergebnisabführungsverträge*), and a change of the legal form of a company.

Dividend Rights

Under German law, distributions of dividends on shares for a given fiscal year are generally determined by a process in which the management board and supervisory board submit a proposal to our annual general shareholders' meeting held in the subsequent fiscal year and such annual general shareholders' meeting adopts a resolution. German law provides that a resolution concerning dividends and distribution thereof may be adopted only if the company's unconsolidated financial statements under the applicable law show net retained profits.

Shareholders participate in profit distributions in proportion to the number of shares they hold. Dividends on shares resolved by the general shareholders' meeting are paid annually, shortly after the general shareholders' meeting, in compliance with the rules of the respective clearing system. Dividend payment claims are subject to a three-year statute of limitation in the company's favor.

Liquidation Rights

Apart from liquidation as a result of insolvency proceedings, we may be liquidated only with a vote of the holders of at least three-quarters of the share capital represented at the shareholders' meeting at which such a vote is taken. If we are liquidated, any assets remaining after all of our liabilities have been paid off would be distributed among our shareholders in proportion to their holdings in accordance with German statutory law. The German Stock Corporation Act provides certain protections for creditors which must be observed in the event of liquidation.

Authorization to Acquire Treasury Shares

The shareholders' meeting adopted a resolution on June 30, 2020 authorizing us, for a period until June 29, 2025, to acquire treasury shares in the total amount of up to 10% of the share capital existing at the time the resolution was passed by the shareholders' meeting or – if lower – at the time the authorization is exercised. The shares acquired on the basis of this authorization and the other shares of the Company already acquired and still held by, or to be attributable to it pursuant to the provisions of the German Stock Corporation Act, must at no time exceed 10% of the relevant share capital. This authorization comprises the acquisition of listed ADRs of the Company, provided that, with regard to the limitation of the acquisition volume to 10% of the share capital, the number of ADRs shall be divided by the number of ADRs representing one share. The acquisition shall occur by means of purchase on the stock exchange on which the shares / respectively ADRs of the Company are traded or by means of a purchase offer addressed to all shareholders.

We are authorized to utilize the treasury shares / respectively ADRs acquired on the basis of this authorization in accordance with the provisions of the German Stock Corporation Act for all other statutory permissible purposes, besides a sale on the stock exchange, particularly for the following:

- The treasury shares / respectively ADRs may be offered and transferred with the supervisory board's consent for non-cash consideration, particularly in the course of corporate mergers or in the course of the direct or indirect acquisition of companies, divisions of companies, operational activities, branches of activity, shares in companies or other assets.

- The treasury shares / respectively ADRs may be sold with the supervisory board's consent also in another way than on the stock exchange if they are sold for cash consideration at a price that is not materially lower than the stock exchange price of the shares / respectively ADRs of the Company at the time of their sale. The relevant stock exchange price within the meaning of the provision above shall be the arithmetic mean of the closing price of the ADRs during the last three trading days prior to the day of the sale of treasury shares. The provision above shall apply to the sale of treasury shares with the proviso that, in the calculation of the permissible selling price, the stock exchange price of an ADR shall be multiplied by the number of ADRs representing one share. This authorization is limited to the disposal of shares or ADRs representing no more than 10% of the share capital at the time this authorization takes effect or – if that value is lower, of the share capital existing at the point in time this authorization is exercised. Shares / respectively ADRs that are issued or sold during the duration of this authorization until the time of its exercise under the simplified exclusion of the statutory subscription rights granted pursuant to German law shall be credited against this limitation of 10% of the share capital.
- With the consent of the supervisory board, treasury shares may be redeemed without requiring another resolution of the general meeting for the redemption or its enforcement. Redemption may be enforced by means of a capital decrease or without capital decrease by adjusting the proportionate amount of the remaining shares in the share capital. For this purpose, the management board is authorized to amend the number of shares in the articles of association.
- With the consent of the supervisory board, treasury shares may also be delivered to the holders of warrants or convertible bonds of the Company or its group companies. This also applies to the delivery of ADRs as a result of the exercise of subscription rights which in the case of a disposal of treasury shares or ADRs or in the case of a capital increase with subscription rights may be granted to the holders of warrant or convertible bonds of the Company or its group companies to the extent to which the holders of warrant or convertible bonds would be entitled to a subscription right for shares of our company upon exercise of the warrant or conversion right or fulfilment of the warrant or conversion obligation. On aggregate, the shares or ADRs transferred on the basis of this authorization may not exceed 10% of the share capital at the time the authorization takes effect or – if this value is lower – of the share capital existing on the date of the exercise of the authorization, provided that the shares or ADRs are used for the fulfilment of warrant or conversion rights or warrant or conversion obligations which were granted or created under the simplified exclusion of statutory subscription rights pursuant to German law. The said 10% threshold shall also include shares of the Company and ADRs which are issued or transferred during the term of this authorization on another legal basis under the simplified exclusion of the statutory subscription rights granted pursuant to German law. The limitation of the issue volume to 10% of the share capital shall apply to ADRs with the provision that the number of ADRs is to be divided by the number of ADRs representing one share.

The above authorizations may, in each case, be exercised independently of each other, once or repeatedly, individually or jointly, fully or partially, even by group companies or third parties acting for the account of the Company or its group companies. Any acquired treasury shares may also be transferred to group companies.

Squeeze-Out of Minority Shareholders

Under German law, the shareholders' meeting of a stock corporation may resolve upon request of a shareholder that holds at least 95% of the share capital that the shares held by any remaining minority shareholders be transferred to this shareholder against payment of “adequate cash compensation” (*Ausschluss von Minderheitsaktionären)*. This amount must take into account the full value of the company at the time of the resolution, which is generally determined using the future earnings value method (*Ertragswertmethode*).

Preemptive and Other Rights

Under our articles of association, with exception of the subscription rights in case of capital increase described above, holders of our ordinary shares are not entitled to preemptive rights with respect to any shares which may be issued, and there are no conversion rights or redemption, purchase, retirement or sinking fund provisions with respect to our ordinary shares. Moreover, the management board is authorized to determine, subject to the consent of the supervisory board, the further details regarding the rights attached to the shares and the conditions of the share issue.

Certain Anti-Takeover Effects

Certain provisions of our articles of association, our rules of procedure of the supervisory board could have certain anti-takeover effects and may delay, deter or prevent a tender offer or takeover attempt that a stockholder might consider to be in its best interests, as discussed below:

Extraordinary Meeting of the Supervisory Board. Our rules of procedure of the supervisory board provide that the chairman of the supervisory board may, if required, convene an extraordinary meeting of the supervisory board if he is informed by the chairman of the management board of important events which are essential for the assessment of the situation and development as well as for the management of the Company. Each member of the supervisory board or the management board, indicating the purpose and the reasons for the request, shall be entitled to have the chairman of the supervisory board convene a meeting of the supervisory board without delay. Should this request be denied, the member of the supervisory board or the management board may provide an agenda and convene the supervisory board themselves.

Prior approval by the supervisory board. Our rules of procedure of the management board provide that, among other things, the following require prior approval by the supervisory board: i) the purchase or sale of legal entities, and ii) the purchase, sale, creation, extension, reduction or termination of business activities, including tangible or intangible assets and joint ventures, if the relevant price or value, in each case, exceeds €50,000.

Prior approval by the management board. Our rules of procedure of the management board provide that, among other things, the following require prior approval by the management board: fundamental organizational measures, such as the conclusion of or amendment to company transfer agreements (Section 291 et seqq. German Stock Corporation Act), transformation measures within the meaning of the German Transformation of Companies Act (*Umwandlungsgesetz*), sale or acquisition of material company assets as well as issues of strategy and business planning as set out in Section 90 para. 1 no. 1 German Stock Corporation Act.

No Cumulative Voting or Classified Board. Our articles of association do not provide for cumulative voting on the election of directors and we currently do not have a classified board.

American Depositary Shares

Depositary

We have appointed Citibank, N.A. (“Citibank”) as the depositary for the ADSs pursuant to a deposit agreement (the “Deposit Agreement”). Citibank's depositary offices are located at 388 Greenwich Street, New York, New York 10013.

Provisions

Each ADS represents the right to receive, and to exercise the beneficial ownership interest in, one ordinary share on deposit with the custodian. An ADS also represents the right to receive any other property received by the depositary or the custodian on behalf of the owner of the ADS but that has not been distributed to the owners of ADSs because of legal restrictions or practical considerations.

The custodian, the depositary and their respective nominees will hold all deposited property for the benefit of the holders and beneficial owners of ADSs. The deposited property does not constitute the proprietary assets of the depositary, the custodian or their nominees. Beneficial ownership in the deposited property will under the terms of the Deposit Agreement be vested in the beneficial owners of the ADSs. The depositary, the custodian and their respective nominees will be the record holders of the deposited property represented by the ADSs for the benefit of the holders and beneficial owners of the corresponding ADSs. A beneficial owner of ADSs may or may not be the holder of ADSs. Beneficial owners of ADSs will be able to exercise beneficial ownership interests in the deposited property only through the registered holders of the ADSs, by the registered holders of the ADSs (on behalf of the applicable ADS owners) only through the depositary, and by the depositary (on behalf of the owners of the corresponding ADSs) directly, or indirectly through the custodian or their respective nominees, in each case upon the terms of the Deposit Agreement.

An owner of ADSs is not treated as one of our shareholders and will not have direct shareholder rights. The depositary will hold the shareholder rights attached to the ordinary shares on the owner's behalf. An owner of ADSs will be able to exercise the shareholders rights for the ordinary shares represented by the owner's ADSs through the depositary only to the extent contemplated in the Deposit Agreement. To exercise any shareholder rights not contemplated in the Deposit Agreement, the owner will need to arrange for the cancellation of ADSs and become a direct shareholder.

Dividends and Distributions

A holder of ADSs generally has the right to receive the distributions we make on the securities deposited with the custodian. Receipt of these distributions may be limited, however, by practical considerations and legal limitations. Holders of ADSs will receive such distributions under the terms of the Deposit Agreement in proportion to the number of ADSs held as of a specified record date, after deduction of the applicable fees, taxes and expenses.

Distributions of Cash

Whenever we make a cash distribution for the securities on deposit with the custodian, we will deposit the funds with the custodian. Upon receipt of confirmation of the deposit of the requisite funds, the depositary will arrange for the funds to be converted into U.S. dollars and for the distribution of the U.S. dollars to the holders, subject to the laws and regulations of Germany.

The conversion into U.S. dollars will take place only if practicable and if the U.S. dollars are transferable to the United States. The depositary will apply the same method for distributing the proceeds of the sale of any property (such as undistributed rights) held by the custodian in respect of securities on deposit.

The distribution of cash will be made net of the fees, expenses, taxes and governmental charges payable by holders under the terms of the Deposit Agreement. The depositary will hold any cash amounts it is unable to distribute in a non-interest bearing account for the benefit of the applicable holders and beneficial owners of ADSs until the distribution can be effected or the funds that the depositary holds must be escheated as unclaimed property in accordance with the laws of the relevant states of the United States.

Distributions of Ordinary Shares

Whenever we make a free distribution of ordinary shares for the securities on deposit with the custodian, we will deposit the applicable number of ordinary shares with the custodian. Upon receipt of confirmation of such deposit, the depositary will *either* distribute to holders new ADSs representing the ordinary shares deposited *or* modify the ADS-to-ordinary shares ratio, in which case each ADS held will represent rights and interests in the additional ordinary shares so deposited. Only whole new ADSs will be distributed. Fractional entitlements will be sold and the proceeds of such sale will be distributed as in the case of a cash distribution.

The distribution of new ADSs or the modification of the ADS-to-ordinary shares ratio upon a distribution of ordinary shares will be made net of the fees, expenses, taxes and governmental charges payable by holders under the terms of the Deposit Agreement. In order to pay such taxes or governmental charges, the depositary may sell all or a portion of the new ordinary shares so distributed.

No such distribution of new ADSs will be made if it would violate a law (*i.e.*, the U.S. securities laws) or if it is not operationally practicable. If the depositary does not distribute new ADSs as described above, it may sell the ordinary shares received upon the terms described in the Deposit Agreement and will distribute the proceeds of the sale as in the case of a distribution of cash.

Distributions of Rights

Whenever we intend to distribute rights to purchase additional ordinary shares, we will give prior notice to the depositary and we will assist the depositary in determining whether it is lawful and reasonably practicable to distribute rights to purchase additional ADSs to holders.

The depositary will establish procedures to distribute rights to purchase additional ADSs to holders and to enable such holders to exercise such rights if it is lawful and reasonably practicable to make the rights available to holders of ADSs, and if we provide all of the documentation contemplated in the Deposit Agreement (such as opinions to address the lawfulness of the transaction). Holders may have to pay fees, expenses, taxes and other governmental charges to subscribe for the new ADSs upon the exercise of their rights. The depositary is not obligated to establish procedures to facilitate the distribution and exercise by holders of rights to purchase new ordinary shares other than in the form of ADSs.

The depositary will *not* distribute the rights to the holders if:

- we do not timely request that the rights be distributed to the holders or we request that the rights not be distributed to the holders;
- we fail to deliver satisfactory documents to the depositary;
- the depositary determines that it is not reasonably practicable to distribute the rights; or
- any rights to be distributed are not exercised and appear to be about to lapse.

The depositary will sell the rights that are not exercised or not distributed if such sale is lawful and reasonably practicable. The proceeds of such sale will be distributed to holders as in the case of a cash distribution. If the depositary is unable to sell the rights, it will allow the rights to lapse.

Elective Distributions

Whenever we intend to distribute a dividend payable at the election of shareholders either in cash or in additional ADSs, we will give prior notice thereof to the depositary and will indicate whether we wish the elective distribution to be made available to the holders. In such case, we will assist the depositary in determining whether such distribution is lawful and reasonably practicable.

The depositary will make the election available to the holders only if it is reasonably practicable and if we have provided all of the documentation contemplated in the Deposit Agreement. In such case, the depositary will establish procedures to enable the holders to elect to receive either cash or additional ADSs, in each case as described in the Deposit Agreement.

If the election is not made available to the holders, the holders will receive either cash or additional ADSs, depending on what a shareholder in Germany would receive upon failing to make an election, as more fully described in the Deposit Agreement.

Other Distributions

Whenever we intend to distribute property other than cash, ordinary shares or rights to purchase ordinary shares, we will notify the depositary in advance and will indicate whether we wish such distribution to be made to the holders. If so, we will assist the depositary in determining whether such distribution to holders is lawful and reasonably practicable.

If it is reasonably practicable to distribute such property to the holders and if we provide all of the documentation contemplated in the Deposit Agreement, the depositary will distribute the property to the holders in a manner it deems practicable.

The distribution will be made net of fees, expenses, taxes and governmental charges payable by holders under the terms of the Deposit Agreement. In order to pay such taxes and governmental charges, the depositary may sell all or a portion of the property received.

The depositary will *not* distribute the property to holders and will sell the property if:

- we do not timely request that the rights be distributed to the holders or we request that the rights not be distributed to the holders;
- we fail to deliver satisfactory documents to the depositary; or
- the depositary determines that all or a portion of the distribution is not reasonably practicable.

The proceeds of such a sale will be distributed to holders as in the case of a cash distribution.

Changes Affecting Ordinary Shares

The ordinary shares held on deposit for ADSs may change from time to time. For example, there may be a change in nominal or par value, a split-up, cancellation, consolidation or any other reclassification of such ordinary shares or a recapitalization, reorganization, merger, consolidation or sale of assets of the Company.

If any such change were to occur, the ADSs would, to the extent permitted by law, represent the right to receive the property received or exchanged in respect of the ordinary shares held on deposit. The depositary may in such circumstances deliver new ADSs to the holders, amend the Deposit Agreement, the ADRs and the applicable registration statement(s), call for the exchange of the holders' existing ADSs for new ADSs and take any other actions that are appropriate to reflect as to the ADSs the change affecting the ordinary shares. If the depositary may not lawfully distribute such property to the holders, the depositary may sell such property and distribute the net proceeds as in the case of a cash distribution.

Withdrawal of Ordinary Shares Upon Cancellation of ADSs

Holders will be entitled to present their ADSs to the depositary for cancellation and then receive the corresponding number of underlying ordinary shares at the custodian's offices. Holders' ability to withdraw the ordinary shares may be limited by U.S. and German considerations applicable at the time of withdrawal. In order to withdraw the ordinary shares represented by the ADSs, holders will be required to pay to the depositary the fees for cancellation of ADSs and any charges and taxes payable upon the transfer of the ordinary shares being withdrawn. Holders assume the risk for delivery of all funds and securities upon withdrawal. Once canceled, the ADSs will not have any rights under the Deposit Agreement.

Holders will have the right to withdraw the securities represented by their ADSs at any time except for:

- temporary delays caused by closing the transfer books of the depositary or the Company or the deposit of ordinary shares in connection with voting at a shareholders' meeting or the payment of dividends;
- the payment of fees, taxes and similar charges;
- compliance with any U.S. or foreign laws or governmental regulations relating to the ADSs or the withdrawal of securities on deposit; or
- other circumstances specifically contemplated by Instruction I.A.(l) of the General Instructions to Form F-6 (as such General Instructions may be amended from time to time).

The Deposit Agreement may not be modified to impair a holder's right to withdraw the securities represented by the holder's ADSs except to comply with mandatory provisions of law.

Voting Rights

Holders generally have the right under the Deposit Agreement to instruct the depositary to exercise the voting rights for the ordinary shares represented by the ADSs. At our request, the depositary will distribute to the holders any notice of a shareholders' meeting together with information explaining how to instruct the depositary to exercise the voting rights of the securities represented by ADSs.

If the depositary timely receives voting instructions from a holder of ADSs, it will endeavor to vote the securities (in person or by proxy) represented by the holder's ADSs in accordance with such voting instructions.

Amendments and Termination

We may agree with the depositary to modify the Deposit Agreement at any time without holders' consent. We undertake to give holders 30 days' prior notice of any modifications that would materially prejudice any of their substantial rights under the Deposit Agreement. Holders will be bound by the modifications to the Deposit Agreement if they continue to hold our ADSs after the modifications to the Deposit Agreement become effective. The Deposit Agreement cannot be amended to prevent the holders from withdrawing the ordinary shares represented by the ADSs (except as permitted by law).

We have the right to direct the depositary to terminate the Deposit Agreement. Similarly, the depositary may in certain circumstances on its own initiative terminate the Deposit Agreement. In either case, the depositary must give notice to the holders at least 30 days before termination. Until termination, holders' rights under the Deposit Agreement will be unaffected.

After termination, the depositary will continue to collect distributions received (but will not distribute any such property until holders request the cancellation of their ADSs) and may sell the securities held on deposit. After the sale, the depositary will hold the proceeds from such sale and any other funds then held for the holders of ADSs in a non-interest bearing account. At that point, the depositary will have no further obligations to holders other than to account for the funds then held for the holders of ADSs still outstanding (after deduction of applicable fees, taxes and expenses).

Books of Depositary

The depositary will maintain ADS holder records at its depositary office. Holders may inspect such records at the office during regular business hours, but solely for the purpose of communicating with other holders in the interest of business matters relating to the ADSs and the Deposit Agreement.

The depositary will maintain in New York facilities to record and process the issuance, cancellation, combination, split-up and transfer of ADSs. These facilities may be closed from time to time, to the extent not prohibited by law.

Limitations on Obligations and Liabilities

The Deposit Agreement limits our obligations and the depositary's obligations to the holders:

- we and the depositary are obligated only to take the actions specifically stated in the Deposit Agreement without negligence or bad faith;
- the depositary disclaims any liability for any failure to carry out voting instructions, for any manner in which a vote is cast or for the effect of any vote, provided it acts in good faith and in accordance with the terms of the Deposit Agreement;
- the depositary disclaims any liability for any failure to determine the lawfulness or practicality of any action, for the content of any document forwarded to the holders on our behalf or for the accuracy of any translation of such a document, for the investment risks associated with investing in ordinary shares, for the validity or worth of the ordinary shares, for any tax consequences that result from the ownership of ADSs, for the credit-worthiness of any third party, for allowing any rights to lapse under the terms of the Deposit Agreement, for the timeliness of any of our notices or for our failure to give notice;
- we and the depositary will not be obligated to perform any act that is inconsistent with the terms of the Deposit Agreement;
- we and the depositary disclaim any liability if we or the depositary are prevented or forbidden from or subject to any civil or criminal penalty or restraint on account of, or delayed in, doing or performing any act

or thing required by the terms of the Deposit Agreement, by reason of any provision, any present or future law or regulation, or by reason of any present or future provision of our articles of association, or any provision of or governing the securities on deposit, or by reason of any act of God or war or other circumstances beyond our control;

- we and the depositary disclaim any liability by reason of any exercise of, or failure to exercise, any discretion provided for in the Deposit Agreement or in our articles of association or in any provisions of or governing the securities on deposit;
- we and the depositary further disclaim any liability for any action or inaction in reliance on the advice or information received from legal counsel, accountants, any person presenting ordinary shares for deposit, any holder of ADSs or authorized representatives thereof, or any other person believed by either of us in good faith to be competent to give such advice or information;
- we and the depositary also disclaim liability for the inability by a holder to benefit from any distribution, offering, right or other benefit that is made available to holders of ordinary shares but is not, under the terms of the Deposit Agreement, made available to the holders;
- we and the depositary may rely without any liability upon any written notice, request or other document believed to be genuine and to have been signed or presented by the proper parties;
- we and the depositary also disclaim liability for any consequential or punitive damages for any breach of the terms of the Deposit Agreement; and no disclaimer of any liability under the Securities Act of 1933, as amended, is intended by any provision of the Deposit Agreement.

Notices and Reports

On or before the first date on which we give notice of any meeting of holders of ordinary shares or other securities on deposit, or of any adjourned meeting of such holders, or of the taking of any action by such holders other than at a meeting, or of the taking of any action in respect of any cash or other distributions or the offering of any rights in respect of the securities on deposit, we shall transmit to the depositary and the custodian a copy of the notice thereof in English but otherwise in the form given or to be given to the holders of ordinary shares or other securities on deposit. We shall also furnish to the custodian and the depositary a summary, in English, of any applicable provisions or proposed provisions of our articles of association that may be relevant or pertain to such notice of meeting or be the subject of a vote thereat.

We will also transmit to the depositary (a) an English version of the other notices, reports and communications which are made generally available by us to holders of ordinary shares or other securities on deposit, and (b) the English versions of our annual reports, provided that the requirement in clause (b) shall be deemed completed if we file such annual report with the Commission on the Electronic Data-Gathering, Analysis, and Retrieval (EDGAR) system. The depositary shall arrange, at our request and expense, to provide copies thereof to all ADS holders or make such notices, reports and other communications available to all ADS holders. We have delivered to the depositary and the custodian a copy of our articles of association, and, promptly upon any amendment thereto or change therein, we shall deliver to the depositary and the custodian a copy of such amendment thereto or change therein. The depositary may rely upon such copy for all purposes of the Deposit Agreement.

Fees and Charges

ADS holders will be required to pay the following fees under the terms of the Deposit Agreement:

Service	**Fees**
(1) Issuance of ADSs upon deposit of shares (excluding issuances as a result of distributions of shares described in (4) below)	Up to U.S. $5.00 per 100 ADSs (or fraction thereof) issued.
(2) Cancellation of ADSs	Up to U.S. $5.00 per 100 ADSs (or fraction thereof) surrendered.

(3) Distribution of cash dividends or other cash distributions (*i.e.*, sale of rights or other entitlements)	Up to U.S. $5.00 per 100 ADSs (or fraction thereof) held.
(4) Distribution of ADSs pursuant to (i) stock dividends or other free stock distributions or (ii) exercise of rights to purchase additional ADSs	Up to U.S. $5.00 per 100 ADSs (or fraction thereof) held.
(5) Distribution of securities other than ADSs or rights to purchase additional ADSs (*i.e.*, spin-off shares)	Up to U.S. $5.00 per 100 ADSs (or fraction thereof) held.
(6) ADS Services	Up to U.S. $5.00 per 100 ADSs (or fraction thereof) held on the applicable record date(s) established by the depositary.

ADS holders will also be responsible to pay certain charges such as:

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

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

Note that the fees and charges the holders may be required to pay may vary over time and may be changed by us and by the depositary.

Европейска инвестиционна банка
Evropská investiční banka
Den Europæiske Investeringsbank
Europäische Investitionsbank
Euroopa Investeerimispank
Ευρωπαϊκή Τράπεζα Επενδύσεων
European Investment Bank
Banco Europeo de Inversiones
Banque européenne d'investissement
An Banc Eorpach Infheistíochta
Europska investicijska banka
Banca europea per gli investimenti
Eiropas Investīciju banka
Europos investicijų bankas
Európai Beruházási Bank
Bank Ewropew tal-Investiment
Europese Investeringsbank
Europejski Bank Inwestycyjny
Banco Europeu de Investimento
Banca Europeană de Investiții
Európska investičná banka
Evropska investicijska banka
Euroopan investointipankki
Europeiska investeringsbanken

Exhibit 4.9

CERTAIN PORTIONS OF THIS EXHIBIT, MARKED BY BRACKETS AND ASTRISKS [***], WERE EXCLUDED BECAUSE THOSE PORTIONS ARE BOTH NOT MATERIAL AND WOULD BE COMPETITIVELY HARMFUL TO THE COMPANY IF PUBLICLY DISCLOSED.

CONFIDENTIAL

Sent by DHL and anticipated by pdf

voxeljet AG
Paul-Lenz-Straβe la
86316 Friedberg
Germany

To *the attention of:* Vorstand/Management Board

Luxembourg, 24 March 2021

JUOPS1/NP/ML/mlv 2021-0684
EIB — Confidential

Subject: **Voxeliet (EGFF) SERAPIS (2016-1017), FI (87310; 88614)**

Finance Contract dated 9 November 2017 (as amended from time to time) between the Borrower and the Bank (the "Finance Contract")

Waiver of a breach under the Finance Contract and Amendment Letter to the Finance Contract

Dear Sirs,

reference is made to:

(i) the Finance Contract as defined above;

(ii) the Amendment Letter No. 1 to the Finance Contract entered into between the Bank and the Borrower on 29 May 2020 (the **"Amendment Letter");**

(iii) your e-mail dated 15 March 2021 by which you informed the Bank of not complying with the "Minimum cash/cash equivalents" Financial Ratio of Schedule K *(Financial Covenants)* of the Finance Contract (such non-compliance continuing) as of 31 December 2020 which constitutes:

a. the non-compliance with the undertaking in Article 7.5 of the Finance Contract with respect to compliance with the "Minimum cash/cash equivalents" Financial Ratio of Schedule K *(Financial Covenants)* of the Finance Contract; and

b. the non-compliance with the "Minimum cash/cash equivalents" Financial Ratio of Schedule K *(Financial Covenants)* of the Finance Contract;

CERTAIN PORTIONS OF THIS EXHIBIT, MARKED BY BRACKETS AND ASTRISKS [***], WERE EXCLUDED BECAUSE THOSE PORTIONS ARE BOTH NOT MATERIAL AND WOULD BE COMPETITIVELY HARMFUL TO THE COMPANY IF PUBLICLY DISCLOSED.

(the foregoing circumstance set out under paragraph (iii) above, the **"Event").**

1 INTERPRETATION

Unless otherwise defined, capitalised terms used in this letter (the **"Letter")** have the same meaning attributed to them in the Finance Contract. References to Articles are references to Articles in the Finance Contract.

In this Letter, **"Effective Date"** means the date on which the Bank confirms to the Borrower in writing (including by electronic mail or other electronic means) that the Bank has received in a form and substance satisfactory to it:

(a) a **PDF** copy of this Letter duly countersigned on behalf of the Borrower, together with a copy of the relevant authority of signatories;

(b) a copy of any other authorisation or other document, opinion or assurance which the Bank considers to be necessary or desirable in connection with the entry into and performance of the transaction contemplated by this Letter; and

(c) an evidence of the payment of the waiver fee set out in Paragraph *7 (Waiver and Amendment Fee)* below.

2 WAIVER OF BREACH WITH RESPECT TO THE EVENT

With effect as of the Effective Date, the Bank waives its rights to demand repayment pursuant to paragraph 9.1(m) of the Finance Contract arising from the breach of Article 7 *(Borrower Undertakings, financial covenants and Representations)* and Schedule K *(Financial Covenants)* of the Finance Contract, with exclusive reference to the Event.

3 AMENDMENT TO THE FINANCE CONTRACT

As of the Effective Date, Schedule K *(Financial Covenants)* of the Finance Contract as amended by the Amendment Letter, shall be replaced by the following:

ML

CERTAIN PORTIONS OF THIS EXHIBIT, MARKED BY BRACKETS AND ASTRISKS [***], WERE EXCLUDED BECAUSE THOSE PORTIONS ARE BOTH NOT MATERIAL AND WOULD BE COMPETITIVELY HARMFUL TO THE COMPANY IF PUBLICLY DISCLOSED.

"SCHEDULE K
FINANCIAL COVENANTS

1. Financial covenants

The Borrower shall ensure that the following financial ratios (the ***"Financial Ratios"****) will be maintained on a consolidated basis for the Group:*

Relevant Period during which a Compliance Certificate is submitted in accordance with paragraph 2 below:	***Total Net Financial Debt to Total Equity shall not be more than:***	***Minimum cash/cash equivalents[1]***
2020	*[***]*	*[***]*
2021	*[***]*	*[***]*
2022	*[***]*	*[***]*
2023	*[***]*	*[***]*
2024	*[***]*	*[***]*
2025	*[***]*	*[***]*

2. Financial Testing

The Financial Ratios shall be calculated in accordance with IFRS (as applied by the Borrower on the date of this Contract and as IFRS is amended from time to time) and tested by reference to the semi-annual consolidated financial statements delivered in accordance with Paragraph 2(a) of Schedule I (Information and Visits) as at the end of each Relevant Period, and set out in the Compliance Certificate delivered to the Bank along with such financial statements."

[1] *Cash & cash equivalents including liquid financial assets on balance sheet such as investments in short term bond funds which can be converted into cash at any time, but excluding any restricted cash.*

CERTAIN PORTIONS OF THIS EXHIBIT, MARKED BY BRACKETS AND ASTRISKS [***], WERE EXCLUDED BECAUSE THOSE PORTIONS ARE BOTH NOT MATERIAL AND WOULD BE COMPETITIVELY HARMFUL TO THE COMPANY IF PUBLICLY DISCLOSED.

4 CONTINUING OBLIGATIONS

The Borrower acknowledges and agrees that, other than as expressly set out and agreed hereby, this Letter does not constitute a waiver granted by the Bank or amendment of any other term or condition of the Finance Contract and that the waiver constituted under this Letter is limited to the Event. The Bank reserves any and all contractual and legal rights it has under the Finance Contract and the applicable law.

5 REPRESENTATIONS

By countersigning this Letter the Borrower represents that, with the exception of the Event, all the representations and warranties which are repeated under and pursuant to Article 7 *(Borrower Undertakings, financial covenants and Representations)* of the Finance Contract are correct in all respects (by reference to the facts and circumstances then existing) on: (i) the date of this Letter; and (ii) the Effective Date.

6 DESIGNATION

In accordance with the Finance Contract, the Borrower and the Bank designate this Letter as a Finance Document. With effect from the Effective Date, the Finance Contract and this Letter shall be read and construed as one document.

7 WAIVER AND AMENDMENT FEE

A waiver and amendment fee of EUR 15,000 (fifteen thousand euros) shall be due by the Borrower to the Bank in connection with the execution of this Letter. This amount shall be paid following the date of the relevant invoice sent by the Bank to the Borrower, indicating the number of the Bank's invoice as reference.

The waiver fee once paid is non-refundable and non-creditable against any other fees payable to the Bank.

8 GOVERNING LAW AND JURISDICTION

The provisions of Article 10 *(Law and Jurisdiction, Miscellaneous)* of the Finance Contract shall apply *mutatis mutandis* to this Letter.

9 COUNTERPARTS

This letter may be executed in any number of counterparts, all of which taken together shall constitute one and the same instrument. Each counterpart is an original, but all counterparts shall together constitute one and the same instrument.

ML

CERTAIN PORTIONS OF THIS EXHIBIT, MARKED BY BRACKETS AND ASTRISKS [***], WERE EXCLUDED BECAUSE THOSE PORTIONS ARE BOTH NOT MATERIAL AND WOULD BE COMPETITIVELY HARMFUL TO THE COMPANY IF PUBLICLY DISCLOSED.

If you are in agreement with the above, please have two (2) originals of this letter returned to the Bank, to the attention of Marie Lesschaeve (m.lesschaeve@eib.org), initialled in each page, dated and duly signed in the name and on behalf of voxeljet AG in its capacity as Borrower, together with each document listed in section 1 (i) through to (and including) (vii) and a certified copy of the relevant authority of signatories.

Yours faithfully,

EUROPEAN INVESTMENT BANK

Donald Fitzpatrick Head of Division	Alessandro Thomas Transaction Management Officer

Acknowledged and agreed for and on behalf of,
voxeljet AG
as the Borrower

_________________________________-
(name and function)

Date:

Acknowledged and agreed for and on behalf of,
voxeljet America Inc
as the Guarantor

_________________________________-
(name and function)

Date:

Exhibit 8.1

Subsidiaries of voxeljet AG

Business-Entity	First consolidation date	Shares
voxeljet America Inc.	February 5, 2014	100.00%
voxeljet UK Ltd. (in liquidation since December 17, 2020)	October 1, 2014	100.00%
voxeljet India Pvt. Ltd.	January 21, 2016	100.00%
voxeljet China Co. Ltd.	April 11, 2016	70.00%

Exhibit 12.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Dr. Ingo Ederer, certify that:

1. I have reviewed this Annual Report on Form 20-F of voxeljet AG;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or cause such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or other persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ DR. INGO EDERER
Dr. Ingo Ederer
Chief Executive Officer
(Principal Executive Officer)

Dated: March 30, 2021

Exhibit 12.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Rudolf Franz, certify that:

1. I have reviewed this Annual Report on Form 20-F of voxeljet AG;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or cause such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or other persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ RUDOLF FRANZ
Rudolf Franz
Chief Financial Officer
(Principal Financial Officer)

Dated: March 30, 2021

Exhibit 13.1

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report on Form 20-F of voxeljet AG (the “Company”) for the year ended December 31, 2020 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), the undersigned, Dr. Ingo Ederer, Chief Executive Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ DR. INGO EDERER
Dr. Ingo Ederer
Chief Executive Officer
(Principal Executive Officer)

Dated: March 30, 2021

Exhibit 13.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 20-F of voxeljet AG (the “Company”) for the year ended December 31, 2020 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), the undersigned, Rudolf Franz, Chief Financial Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ RUDOLF FRANZ
Rudolf Franz
Chief Financial Officer
(Principal Financial Officer)

Dated: March 30, 2021

Exhibit 15.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statement on Form S-8 (No. 333-217450) of voxeljet AG of our report dated March 30, 2021 relating to the financial statements, which appears in this Form 20-F.

Munich, Germany
March 30, 2021

PricewaterhouseCoopers GmbH
Wirtschaftsprüfungsgesellschaft

/s/ Katharina Deni
Wirtschaftsprüfer

/s/ Sebastian Stroner
Wirtschaftsprüfer

Exhibit 15.2

Consent of Independent Registered Public Accounting Firm

The Supervisory Board
voxeljet AG:

We consent to the incorporation by reference in the registration statement (No. 333-217450) on Form S-8 of voxeljet AG (the Company) of our report dated May 7, 2020, with respect to the consolidated statement of financial position of voxeljet AG as of December 31, 2019, the related consolidated statements of comprehensive loss, changes in equity, and cash flows for each of the years in the two-year period ended December 31, 2019, and the related notes, before the effects of the adjustments for the correction of the errors and retrospective adjustments described in Note 2, which report appears in the December 31, 2020 annual report on Form 20-F of the Company.

Our audit report dated May 7, 2020 contains an explanatory paragraph that states that the Company has suffered recurring losses and negative cash flows from operations and has breached debt covenants which raises substantial doubt about its ability to continue as a going concern. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Our audit report also refers to a change to the method of accounting for leases as of January 1, 2019 due to the adoption of IFRS 16 Leases.

/s/ KPMG AG Wirtschaftsprüfungsgesellschaft

Munich, Germany
March 30, 2021