				9	EUR	
NAT.	Filing Date	Nr.	P.	U.	D.	CONSO 1

CONSOLIDATED ANNUAL ACCOUNTS AND OTHER DOCUMENTS TO BE FILED UNDER BELGIAN COMPANY LAW

IDENTIFICATION DETAILS

NAME OF THE CONSOLIDATING COMPANY ~~OR THE CONSORTIUM~~ [1] [2]: Materialise

Legal Form: Public limited company

Address: Technologielaan Nr.: 15 Box:

Postal code: 3000 Municipality: Leuven

Country: Belgium

Register of Legal persons – commercial court Leuven

Internetadres[3]: http://www.

Company identification number: BE 0441.131.254

CONSOLIDATED ANNUAL ACCOUNTS: IN THOUSANDS OF EURO[4]

approved by the general meeting of: 29/06/2021

Regarding the financial year from	01/01/2020	to	31/12/2020
Preceding financial year from	01/01/2019	tot	31/12/2019

The amounts for the preceding period **are / ~~are not~~**[1] identical to the ones previously published.

Included with these consolidated accounts are:
- the consolidated annual report
- the auditors report on the consolidated annual accounts

IN CASE THE CONSOLIDATED ACCOUNTS OF A FOREIGN COMPANY ARE SUBMITTED BY A BELGIAN SUBSIDIARY
Name of the Belgian subsidiary which deposits the accounts *(article 3:26, §2, 4°, a) of the Company Law)*

Company identification number of the Belgian subsidiary which deposits the accounts

Total number of pages deposited: 76 Numbers of sections of the standard form not deposited because they serve no useful purpose:

Peter Leys
Peter Leys (Jun 4, 2021 15:32 GMT+2)

Wilfried Vancraen,
CEO

Peter Leys,
Executive Chairman

1 Strike out what is nog applicable.
2 A consortium has to fill in CONSO 5.4.
3 Optional information.
4 If necessary, adapt the unity and currency in which the amounts are expressed.

LIST OF DIRECTORS AND MANAGERS OF THE CONSOLIDATING COMPANY AND OF THE AUDITORS REGARDING A COMPLIMENTARY REVIEW OR CORRECTION ASSIGNMENT OF THE CONSOLIDATED ANNUAL ACCOUNT

LIST OF THE DIRECTORS, MANAGERS AND AUDITORS

COMPLETE LIST with surname, first names, profession, place of residence (address, number, postal code and municipality) and position within the company

A TREC *BE 0456.384.307* *Timmermansstraat 32, 8340 Damme, Belgium* *Represented by:* *Johan De Lille* *Gaversesteenweg 604, 9820 Merelbeke, Belgium*	*Director* *03/06/2008 – 29/06/2021*
Wilfried, Frans, Isidoor Vancraen *Jan Van der Vorstlaan 19, 3040 Huldenberg, Belgium*	*Director* *18/11/2003 – 29/06/2021*
Jos Van der Sloten *Langestraat 62, 3190 Boortmeerbeek, Belgium*	*Director* *03/06/2008 – 29/06/2021*
Pol Ingelaere *Hazegoedweg 13, 8800 Roeselare, Belgium*	*Director* *07/06/2011 – 02/06/2020*
Peter Leys *Strooistraat 57, 1860 Meise, Belgium*	*Director* *28/11/2013 – 29/06/2021*
Jurgen Gino Ingels *Clemenceaustraat 117 bus A, 2860 Sint-Katelijne-Waver, Belgium*	*Director* *28/11/2013 – 29/06/2021*
Lieve Verplancke (Arts) *Dikkemeerweg 54, 1653 Dworp, Belgium*	*Director* *02/06/2015 – 29/06/2021*
Hilde Ingelaere *Jan Van der Vorstlaan 19, 3040 Huldenberg, Belgium*	*Director* *18/11/2003 – 29/06/2021*
Bart Luyten *Hanswijkstraat 37 bus A, 2820 Bonheiden, Belgium*	*Director* *06/06/2017 – 29/06/2021*
Volker Hammes *Albachstrasse 25, 67435 Neustadt An der Weinstrasse, Germany*	*Director* *28/11/2018 – 29/06/2021*
Sander Vancraen *Jan Van der Vorstlaan 19, 3040 Huldenberg, Belgium*	*Director* *02/06/2020 – 29/06/2021*
KPMG Bedrijfsrevisoren BV – KPMG Réviseurs d'Entreprises SRL *BE 0419.122.548* *Luchthaven Brussel Nationaal 1K, 1930 Zaventem, Belgium* *Membership number.: B00001* *Represented by:* *Götwin Jackers* *Luchthaven Brussel Nationaal 1K, 1930 Zaventem, Belgium* *Membership number.: A02158*	*Auditor* *05/11/2020 – 07/06/2023*

Consolidated income statements

in 000€, except per share data	Notes	For the year ended December 31, 2020	2019*	2018
Revenue	22,1	170,449	196,679	184,721
Cost of sales	22,2	(76,446)	(87,052)	(82,299)
Gross profit		**94,003**	**109,627**	**102,422**
Research and development expenses	22,3	(27,104)	(23,348)	(22,416)
Sales and marketing expenses	22,4	(44,636)	(52,989)	(46,303)
General and administrative expenses	22,5	(29,337)	(31,786)	(32,310)
Net other operating income	22,6	2,436	5,432	3,771
Operating profit (loss)		**(4,639)**	**6,936**	**5,164**
Financial expenses	22,8	(5,995)	(3,682)	(4,864)
Financial income	22,9	2,452	1,377	3,627
Share in loss of joint venture, after tax	8	(39)	(392)	(475)
Profit (loss) before taxes		**(8,221)**	**4,239**	**3,452**
Income tax benefit/(expense)	22.10	949	(2,595)	(425)
Net profit (loss) for the year		**(7,272)**	**1,644**	**3,027**
Net profit (loss) attributable to:				
The owners of the parent		(7,124)	1,586	3,027
Non-controlling interest		(148)	58	—
Earnings per share attributable to the owners of the parent				
Basic	23	(0.13)	0.03	0.06
Diluted	23	(0.13)	0.03	0.06

* The year 2019 has been restated to reflect the final accounting of the business combination with Engimplan. See additional information in Notes 2 and 4.

The accompanying notes from page F-10 to page F-74 form an integral part of these consolidated financial statements.

Table of Contents

Consolidated statements of comprehensive income

in 000€		For the year ended December 31, 2020	2019*	2018
Net profit (loss) for the year		**(7,272)**	**1,644**	**3,027**
Other comprehensive (loss)/ income				
Recycling				
Exchange differences on translation of foreign operations		(6,176)	244	(47)
Non-recycling				
Fair value adjustment through OCI—Equity instruments	10	489	—	—
Other comprehensive (loss)/ income, net of taxes		**(5,687)**	**244**	**(47)**
Total comprehensive (loss)/ income for the year, net of taxes		**(12,959)**	**1,888**	**2,980**
Total comprehensive (loss)/ income attributable to:				
The owners of the parent		(11,896)	2,041	2,980
Non-controlling interest		(1,063)	(153)	—

* The year 2019 has been restated to reflect the final accounting of the business combination with Engimplan. See additional information in Notes 2 and 4.

The accompanying notes from page F-10 to page F-74 form an integral part of these consolidated financial statements.

Table of Contents

Consolidated statements of financial position

in 000€	Notes	As of December 31, 2020	2019*	2018
Assets				
Non-current assets				
Goodwill	5	20,342	19,607	17,491
Intangible assets	6	32,981	27,395	26,326
Property, plant & equipment	7	88,267	91,006	92,537
Right-of-use assets	7	10,996	10,586	—
Investments in joint ventures	8	—	39	—
Deferred tax assets	22.10	201	192	315
Investments in convertible loans	10	6,203	2,750	—
Investments in non-listed equity instruments	10	3,842	3,046	2,701
Other non-current assets	10	4,093	3,594	4,536
Total non-current assets		**166,925**	**158,215**	**143,906**
Current assets				
Inventories and contracts in progress	9	10,043	12,696	9,986
Trade receivables	11	30,871	40,977	36,891
Other current assets	10	8,290	8,616	6,936
Cash and cash equivalents	12	111,538	128,897	115,506
Total current assets		**160,742**	**191,186**	**169,319**
Total assets		**327,667**	**349,401**	**313,225**

* The year 2019 has been restated to reflect the final accounting of the business combination with Engimplan. See additional information in Notes 2 and 4.

The accompanying notes from page F-10 to page F-74 form an integral part of these consolidated financial statements.

Consolidated statements of financial position

in 000€	Notes	As of December 31, 2020	2019*	2018
Equity and liabilities				
Equity				
Share capital	13	4,096	3,066	3,050
Share premium	13	141,274	138,090	136,637
Retained earnings	13	(7,395)	(272)	(1,857)
Other reserves	13	(4,871)	(1,378)	(1,841)
Equity attributable to the owners of the parent		**133,104**	**139,506**	**135,989**
Non-controlling interest	13	—	3,276	—
Total equity		**133,104**	**142,782**	**135,989**
Non-current liabilities				
Loans & borrowings	15	90,502	104,673	92,440
Lease liabilities	15	7,086	6,427	—
Deferred tax liabilities	22.10	6,805	5,747	6,226
Deferred income	18	5,327	5,031	4,587
Other non-current liabilities	16	398	696	868
Total non-current liabilities		**110,118**	**122,574**	**104,121**
Current liabilities				
Loans & borrowings	15	13,984	13,389	13,598
Lease liabilities	15	3,539	3,449	—
Trade payables		17,698	18,517	18,667
Tax payables	17	974	3,363	2,313
Deferred income	18	29,555	27,641	23,195
Other current liabilities	19	18,695	17,686	15,342
Total current liabilities		**84,445**	**84,045**	**73,115**
Total equity and liabilities		**327,667**	**349,401**	**313,225**

* The year 2019 has been restated to reflect the final accounting of the business combination with Engimplan. See additional information in Notes 2 and 4.

The accompanying notes from page F-10 to page F-74 form an integral part of these consolidated financial statements.

Table of Contents

Consolidated statements of changes in equity

in 000€	Notes	Share capital	Share premium	Retained earnings	Other reserves	Total	Non-controlling interest	Total equity
		Attributable to the owners of the parent						
At January 1, 2020 as reported*		**3,066**	**138,090**	**(211)**	**(1,378)**	**139,567**	**3,107**	**142,675**
Restatement 2019—Engimplan PPA	4	—	—	(61)	—	(61)	169	107
At January 1, 2020 Restated*	2	**3,066**	**138,090**	**(272)**	**(1,378)**	**139,506**	**3,276**	**142,782**
Net loss for the year		—	—	(7,124)	—	(7,124)	(148)	(7,272)
Other comprehensive (loss)		—	—	—	(4,772)	(4,772)	(915)	(5,687)
Total comprehensive income (loss)		—	—	**(7,124)**	**(4,772)**	**(11,896)**	**(1,063)**	**(12,959)**
Capital increase through conversion of convertible bonds	13	1,000	—	—	—	1,000	—	1,000
Capital increase through exercise of warrants	13	30	3,082	—	—	3,112	—	3,112
Acquisition NCI Engimplan	13	—	—	—	1,279	1,279	(2,213)	(934)
Equity-settled share-based payment expense	14	—	103	—	—	103	—	103
At December 31, 2020		**4,096**	**141,274**	**(7,395)**	**(4,871)**	**133,104**	**—**	**133,104**

in 000€	Notes	Share capital	Share premium	Retained earnings	Other reserves	Total	Non-controlling interest	Total equity
		Attributable to the owners of the parent						
At January 1, 2019		**3,050**	**136,637**	**(1,857)**	**(1,841)**	**135,989**	**—**	**135,989**
Net profit for the year		—	—	1,646	—	1,646	78	1,724
Other comprehensive loss		—	—	—	456	456	(211)	245
Total comprehensive income (loss)		**—**	**—**	**1,646**	**456**	**2,102**	**(133)**	**1,969**
Capital increase through exercise of warrants	13	16	1,252	—	—	1,268	—	1,268
Acquisition NCI Engimplan		—	—	—	—	—	3,240	3,240
Equity-settled share-based payment expense	14	—	201	—	7	208	—	208
At December 31, 2019 as reported		**3,066**	**138,090**	**(211)**	**(1,378)**	**139,567**	**3,107**	**142,675**

in 000€	Notes	Share capital	Share premium	Retained earnings	Other reserves	Total	Non-controlling interest	Total equity
		Attributable to the owners of the parent						
At January 1, 2018		**2,729**	**79,839**	**(4,884)**	**(1,803)**	**75,881**	**—**	**75,881**
Net profit for the year		—	—	3,027	—	3,027	—	3,027
Other comprehensive income/ (loss)		—	—	—	(47)	(47)	—	(47)
Total comprehensive income (loss)		**—**	**—**	**3,027**	**(47)**	**2,980**	**—**	**2,980**
Capital increase in cash	12	312	59,575	—	—	59,887	—	59,887
Capital increase through exercise of warrants	14	9	593	—	—	602	—	602
Capital increase Rapidfit+	—	—	(4,003)	—	—	(4,003)	—	(4,003)
Equity-settled share-based payment expense	14	—	633	—	9	642	—	642
At December 31, 2018		**3,050**	**136,637**	**(1,857)**	**(1,841)**	**135,989**	**—**	**135,989**

* The year 2019 has been restated to reflect the final accounting of the business combination with Engimplan. See additional information in Notes 2 and 4.

The accompanying notes from page F-10 to page F-74 form an integral part of these consolidated financial statements.

Consolidated cash flow statements

in 000€	Notes	For the year ended December 31, 2020	2019*	2018
Operating activities				
Net profit (loss) for the year*		(7,272)	1,644	3,027
Non-cash and operational adjustments				
Depreciation of property, plant & equipment*	7	14,932	14,419	12,223
Amortization of intangible assets	6	4,742	4,859	5,064
Impairment of goodwill and intangible assets	5; 6	4,606	—	—
Share-based payment expense	14	752	302	1,075
Loss (gain) on disposal of property, plant & equipment	7	10	165	(83)
Movement in provisions		137	138	5
Movement in reserve for bad debt and slow moving inventory		516	121	1,293
Financial income	22.9	(2,300)	(1,377)	(581)
Financial expense	22.8	5,821	3,682	2,172
Impact of foreign currencies		61	(176)	(299)
Share in loss of joint venture (equity method)	8	39	392	475
Income taxes and deferred taxes	22.10	(970)	2,595	425
Fair value adjustment	4; 10	(1,093)	—	(192)
Other		—	(245)	87
Working capital adjustment and income tax paid				
Decrease (increase) in trade receivables and other receivables		9,205	216	(3,156)
Decrease (increase) in inventories and contracts in progress		2,724	(745)	812
Increase in trade payables and other payables		583	4,196	7,341
Income tax paid		(2,618)	(2,139)	(1,368)
Interest received		103	355	—
Net cash flow from operating activities		**29,978**	**28,402**	**28,320**

* The year 2019 has been restated to reflect the final accounting of the business combination with Engimplan. See additional information in Notes 2 and 4.

The accompanying notes from page F-10 to page F-74 form an integral part of these consolidated financial statements.

Table of Contents

Consolidated cash flow statements

in 000€	Notes	For the year ended December 31, 2020	2019*	2018
Investing activities				
Purchase of property, plant & equipment	7	(11,032)	(13,472)	(18,270)
Purchase of intangible assets	6	(6,618)	(2,193)	(1,836)
Proceeds from the sale of property, plant, equipment and intangibles (net)		552	278	281
Acquisition of subsidiary (net of cash)	4	(8,031)	(6,331)	—
Investments in joint-ventures / shares	8	—	(875)	—
Convertible loan granted	10	(2,836)	(2,743)	—
Other equity investments in non-listed entities	10	(300)	(281)	(2,671)
Interest received		—	—	363
Net cash flow used in investing activities		**(28,265)**	**(25,617)**	**(22,133)**
Financing activities				
Proceeds from loans & borrowings	15	—	29,000	32,554
Repayment of loans & borrowings	15	(13,736)	(12,126)	(18,820)
Repayment of leases	15	(3,640)	(5,283)	(3,102)
Capital increase in parent company	13	4,112	1,268	60,489
Direct attributable expense capital increase	13	—	—	(4,003)
Interest paid		(2,268)	(2,286)	(1,733)
Other financial income (expense), net		(1,356)	208	(150)
Net cash flow from financing activities		**(16,888)**	**10,781**	**65,235**
Net increase/(decrease) of cash and cash equivalents		**(15,175)**	**13,566**	**71,422**
Cash and cash equivalents at beginning of the year	12	128,897	115,506	43,175
Exchange rate differences on cash and cash equivalents		(2,184)	(175)	908
Cash and cash equivalents at end of the year	12	111,538	128,897	115,506

* The year 2019 has been restated to reflect the final accounting of the business combination with Engimplan. See additional information in Notes 2 and 4.

The accompanying notes from page F-10 to page F-74 form an integral part of these consolidated financial statements.

Notes to the consolidated financial statements

1 Corporate information

Materialise NV is a limited liability company with its registered office at Technologielaan 15, 3001 Leuven, Belgium. The consolidated financial statements comprise Materialise NV (the "Company" or "Parent") and its subsidiaries (collectively, the "Group" or "we," "us" and "our"). See Note 28 for a list of subsidiaries of the Company.

The Group is a leading provider of additive manufacturing (AM) software and of sophisticated 3D printing services. The products and services of the Group are organized in the three segments: Materialise Medical, Materialise Software and Materialise Manufacturing. The Group sells its products in Europe, the Americas, Africa and Asia-Pacific.

The consolidated financial statements of the Group for the year ended December 31, 2020 were approved and authorized for issue on April 28, 2021 in accordance with a resolution of the Parent's Board of Directors.

2 Basis of preparation

The consolidated financial statements of the Group for the three years ended December 31, 2020, 2019 and 2018 were prepared in accordance with the International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB) and as adopted by the EU (collectively "IFRS").

These consolidated financial statements have been prepared on a historical cost basis, except for the assets and liabilities that have been acquired as part of a business combination, which have been initially recognized at fair value, and certain financial assets such as the non-listed equity instruments and the convertible loan receivable which are both included in the other non-current assets, the share appreciation rights, and the written put option of Rapidfit which are measured at fair value.

The financial statements are prepared on a going concern basis.

The consolidated financial statements are presented in thousands of euros (K€ or thousands of €) and all "currency" values are rounded to the nearest thousand (€ 000), except when otherwise indicated.

The preparation of financial statements in compliance with IFRS requires the use of certain critical accounting estimates. It also requires Group management to exercise judgment in applying the Group's accounting policies. The areas where significant judgment and estimates have been made in preparing the financial statements and their effect are disclosed in Note 3.

Impacts of COVID-19 on our Business

The current challenges as a result of the COVID-19 outbreak have impacted our operations. We have been taking, and continue to take, the necessary measures in terms of safety and sanitary health provisions, diverse related risk mitigations, and financial measures to manage the challenges that this Covid-period is imposing on running a business. The coronavirus global health crisis adversely impacted our business and results of operations in 2020 and may have a material adverse impact on our business, results of operations, financial condition, cash flows or liquidity during 2021 and beyond.

During 2020, the coronavirus pandemic negatively affected each of our Materialise Software, Materialise Medical and Materialise Manufacturing segments, and had a major impact on our consolidated results of operations

COVID-19 impact on 2020 results. The economic downturn related to the coronavirus pandemic has caused significant reduction in demand for services, production and investments, and has affected our global operations negatively. With respect to each our market segments, for example:

- Materialise Software: A significant portion of the sales of this segment comes from parties that either sell or use 3D printing systems. During 2020, 3D printing manufacturers suffered from canceled orders due to reduced investments from their customers. In addition, our direct sales suffered from a similar negative customer investment climate.
- Materialise Medical: A significant percentage of this segment's revenue stems, directly or indirectly, from elective surgeries. During the second quarter of 2020 in particular, non-elective surgeries were delayed in order to prioritize COVID-19 treatments. In addition, certain of our customer's investments were delayed or canceled.
- Materialise Manufacturing: This segment operates as part of the overall manufacturing sector in Europe. The manufacturing sector has been severely impacted generally by the pandemic, including the automotive and the aerospace industries in particular. There have been far less co-creation initiatives, as well as lower levels of demand for 3D printing service bureaus.

As a result of the negative effect on all of our segments, the coronavirus pandemic had a major impact on our consolidated results of operations.

We were not impacted in 2020 by an increase of bad trade debt, or major delays in trade payments.

New standards, interpretations and amendments adopted by the Group

The following amendments and interpretations issued by the IASB and IFRIC apply for the first time in 2020, but do not have a significant impact on the consolidated financial statements of the Group.

- Amendments to IAS 1 and IAS 8 Definition of Material
- Amendments to IFRS 3 Business Combinations: Definition of a Business
- Amendments to IFRS 9, IAS 39 and IFRS 7 Interest Rate Benchmark Reform – Phase 1
- Amendments to references to the Conceptual Framework in IFRS standards

The Group has not early adopted any standards, interpretations or amendments that have been issued but are not yet effective.

Restatements in the reporting year 2019

The Group has restated the reporting year 2019 for the following impacts:

- Our consolidated financial statements for the year ended December 31, 2019 appearing in our Annual Report on Form 20-F, as filed with the U.S. Securities and Exchange Commission on April 30, 2020 (the "FY 2019 Form 20-F"), included provisional accounting for the Engimplan business combination. The fair value analysis with respect to the assets and liabilities acquired was not yet finalized as of the reporting date.

  As of July 16th, 2020, we completed the fair value analysis of the Engimplan business combination, with corresponding adjustments to goodwill, property, plant and equipment and non-controlling interest as if the accounting for the business combination had been completed at acquisition date. The impact has been accounted for as retrospective adjustments to our consolidated statement of financial position as of December 31, 2019 and our consolidated income statement for the year ended December 31, 2019. Furthermore it includes an additional depreciation charge resulting from a higher adjustment to PP&E as at December 31, 2019, with a total impact on the consolidated reserves and non-controlling interest for the year ended December 31, 2019 amounting to K€ (61) and K€169 respectively.

  We refer to Note 4 for a detailed discussion of the Engimplan business combination.

The impact of the restatements on the consolidated statement of financial position as of December 31, 2019 and the consolidated income statement for the year ended December 31, 2019 is as follows:

Restatement impact on statement of financial position in 000€	As of December 31, 2019 As previously reported	IFRS 3 Engimplan	As restated
Assets			
Non-current assets			
Goodwill	20,174	(567)	19,607
Intangible assets	27,395	—	27,395
Property, plant & equipment	90,331	674	91,005
Right-of-use assets	10,586	—	10,586
Investments in joint ventures	39	—	39
Deferred tax assets	192	—	192
Other non-current assets	9,391	—	9,391
Total non-current assets	**158,108**	**107**	**158,215**
Current assets			
Inventories and contracts in progress	12,696	—	12,696
Trade receivables	40,977	—	40,977
Other current assets	8,616	—	8,616
Cash and cash equivalents	128,897	—	128,897
Total current assets	**191,186**	**—**	**191,186**
Total assets	**349,294**	**107**	**349,401**

Equity and liabilities			
Equity			
Share capital	3,066	—	3,066
Share premium	138,090	—	138,090
Consolidated reserves	(195)	(61)	(256)
Other comprehensive loss	(1,394)	(1)	(1,395)
Equity attributable to the owners of the parent	**139,567**	**(62)**	**139,506**
Non-controlling interest	3,107	169	3,276
Total equity	**142,674**	**107**	**142,782**
Non-current liabilities			
Loans & borrowings	104,673	—	104,673
Lease liabilities	6,427	—	6,427
Deferred tax liabilities	5,747	—	5,747
Deferred income	5,031	—	5,031
Other non-current liabilities	697	—	697
Total non-current liabilities	**122,575**	**—**	**122,575**
Current liabilities			
Loans & borrowings	13,389	—	13,389
Lease liabilities	3,449	—	3,449
Trade payables	18,517	—	18,517
Tax payables	3,363	—	3,363
Deferred income	27,641	—	27,641
Other current liabilities	17,686	—	17,686
Total current liabilities	**84,045**	**—**	**84,045**
Total equity and liabilities	**349,294**	**107**	**349,402**

Restatement impact on income statement in 000€	Notes	**For the year ended December 31, 2019**		
		As previously reported	**IFRS 3 Engimplan**	**As restated**
Revenue		196,679	—	196,679
Cost of sales		(86,972)	(80)	(87,052)
Gross profit		**109,707**	**(80)**	**109,627**
Research and development expenses		(23,348)	—	(23,348)
Sales and marketing expenses		(52,989)	—	(52,989)
General and administrative expenses		(31,786)	—	(31,786)
Net other operating income / (expenses)		5,432	—	5,432
Operating profit (loss)		**7,016**	**(80)**	**6,936**
Financial expenses		(3,682)	—	(3,682)
Financial income		1,377	—	1,377
Share in loss of joint venture		(392)	—	(392)
Loss before taxes		**4,319**	**(80)**	**4,239**
Income taxes		(2,595)	—	(2,595)
Net loss for the year		**1,724**	**(80)**	**1,644**
Net loss attributable to:				
The owners of the parent		1,646	(60)	1,586
Non-controlling interest		78	(20)	58

3 Summary of significant accounting policies

Basis for consolidation

The consolidated financial statements comprise the financial statements of the Group and its subsidiaries.

Entities are fully consolidated from the date of acquisition, which is the date when the Group obtains control, and continue to be consolidated until the date when such control ceases. The financial statements of the entities are prepared for the same reporting period as the parent company, using consistent accounting policies. All intra-Group balances, transactions, unrealized gains and losses resulting from intra-Group transactions and dividends are fully eliminated.

The Group attributes profit or loss and each component of other comprehensive income to the owners of the parent company and to the non-controlling interest based on present ownership interests, even if the results in the non-controlling interest have a negative balance.

A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction. If the Group loses control over the subsidiary, it will derecognize the assets (including goodwill) and liabilities of the subsidiary, any non-controlling interest and the other components of equity related to the subsidiary. Any surplus or deficit arising from the loss of control is recognized in profit or loss. If the Group retains an interest in the previous subsidiary, then such interest is measured at fair value at the date the control is lost.

The proportion allocated to the parent and non-controlling interests in preparing the consolidated financial statements is determined based solely on present ownership interests.

As of 9 November 2020, the Group acquired full control over RS Sprint and RS Sprint entered into fully consolidated scope after having been accounted for as a joint venture under the equity method up to 8 November 2020 – see Note 8.

Non-controlling interests

The Group has the choice, on a transaction by transaction basis, to initially recognize any non-controlling interest in the acquiree which is a present ownership interest and entitles its holders to a proportionate share of the entity's net assets in the event of liquidation at either acquisition date fair value or, at the present ownership instruments' proportionate share in the recognized amounts of the acquiree's identifiable net assets. Other components of non-controlling interest such as outstanding share options are generally measured at fair value. The Group has not elected to take the option to use fair value in acquisitions completed to date. Currently the only non-controlling interest resulting from business combinations resulted from Engimplan up to December 1, 2020 at which date the Group acquired the remaining 25% stake in Engimplan Engenharia de Implante Industria & Comércio Ltda. See also note 4.

Foreign currency translation

The Group's consolidated financial statements are presented in euros, which is also the parent company's functional currency. For each entity, the Group determines the functional currency, and items included in the financial statements of each entity are measured using the functional currency.

Financial statements of foreign subsidiaries

Foreign subsidiaries use the local currencies of the country where they operate. The statement of financial position is translated into euro at the closing rate on the reporting date and their income statement is translated at the average exchange rate at each month-end. Differences resulting from the translation of the financial statements of said subsidiaries are recognized in other comprehensive income as "exchange differences on translation of foreign operations".

Foreign currency transactions

Transactions denominated in foreign currencies are translated into euro at the exchange rate at the end of the previous month-end. Monetary items in the statement of financial position are translated at the closing rate at each reporting date and the relevant translation adjustments are recognized in financial or operating result depending on its nature.

Business combinations and goodwill

Business combinations are accounted for using the acquisition method at the acquisition date, which is the date at which the Group obtains control over the entity. The cost of an acquisition is measured as the amount of the consideration transferred to the seller, measured at the acquisition date fair value, and the amount of any non-controlling interest in the acquiree.

The Group measures goodwill initially at cost at the acquisition date, being:

- the fair value of the consideration transferred to the seller, plus

- the amount of any non-controlling interest in the acquiree, plus
- if the business combination is achieved in stages, the fair value of the existing equity interest in the acquiree re-measured at the acquisition date, less
- the fair value of the net identifiable assets acquired and assumed liabilities

Goodwill is recognized with any impairment in carrying value being charged to the consolidated income statement. Where the fair value of identifiable assets, liabilities and contingent liabilities exceed the fair value of consideration paid, the excess is credited in full to the consolidated income statement on acquisition date.

Acquisition costs incurred are expensed and included in general and administrative expenses.

Any contingent consideration to be transferred by the acquirer will be recognized at fair value at the acquisition date. Subsequent changes to the fair value of the contingent consideration, which is deemed to be an asset or liability, will be recognized in profit or loss. If the contingent consideration is classified as equity, it is not re-measured until it is finally settled within equity.

Acquisition of non-controlling interests are accounted for as an equity transaction.

Investments in joint ventures

The Group carried investment in a joint venture (RS Print NV) up to 8 November 2020, afterwards the Group acquired full control over RS Sprint as of 9 November 2020. We refer to Note 8 on applied accounting treatment in the Group's consolidated financial statements and to Note 4 regarding the accounting treatment applied in acquiring RS Print NV via a business combination in stages.

The Group's investments in its joint venture are accounted for using the equity method up to the moment the Group acquired control. Under the equity method, the investment in the joint venture was initially recognized at cost. The carrying amount of the investment was adjusted to recognize changes in the Group's share of net assets of the joint venture since the acquisition date up to the moment control was obtained after which RS Print NV was fully consolidated.. Goodwill relating to the joint venture was included in the carrying amount of the investment and was not tested for impairment individually.

The income statement reflects the Group's share of the results of operations of the joint venture. Any change in other comprehensive income of the joint venture is presented as part of the Group's other comprehensive income. In addition, when there has been a change recognized directly in the equity of the joint venture, the Group recognizes its share of the change in the statement of changes in equity. If the Group's share of the results in the joint venture equals or exceeds its interest in the joint venture, the Group discontinues recognising its share of further losses. The interest in the joint venture is the carrying amount of the investment in the joint venture together with any long-term interests that in substance form part of the Group's net investment in the joint venture. Unrealized gains and losses resulting from transactions between the Group and the joint venture are eliminated to the extent of the interest in the joint venture. A liability is recognized to the extent that the Group has an obligation to fund the investee's operations or has made payments on behalf of the investee.

After applying equity accounting, the investment is tested for impairment when there is an indication of a possible impairment. At each reporting date, the Group determines whether there is objective evidence that an investment in a joint venture is impaired. If there is such evidence, the Group calculates the amount of impairment as the difference between the recoverable amount of the Group's interest in the joint venture (higher of value in use and fair value less costs to sell), and then recognizes the loss as 'Share of profit or loss of joint ventures' in the income statement.

Property, plant & equipment

Property, plant and equipment is stated at cost, net of accumulated depreciation and/or accumulated impairment losses, if any. Such cost includes borrowing costs directly attributable to construction projects if the asset necessarily takes a substantial period of time to get ready for its intended use, it is probable that they will result in future economic benefits to the Group and the cost can be measured reliably. When significant parts of property, plant and equipment are required to be replaced at intervals, the Group recognizes such parts as individual assets with specific useful lives and depreciates them accordingly. Likewise, when a major inspection is performed, its cost is recognized in the carrying amount of the property, plant and equipment as a replacement if the recognition criteria are satisfied. All other repair and maintenance costs are recognized in the income statement as incurred.

Depreciation is calculated on a straight-line basis over the estimated useful lives of the assets as follows:

• Buildings:	20-30 years
• Machinery:	5-12 years
• IT assets:	3-5 years
• Fixtures & Furniture:	10-15 years
• Vehicles:	2-4 years
• Leasehold Building Improvements:	10 years

Land is not depreciated.

An item of property, plant and equipment and any significant part initially recognized is derecognized upon disposal or when no future economic benefits are expected from its use or disposal. 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 asset) is included in the income statement when the asset is derecognized.

The assets’ residual values, useful lives and methods of depreciation are reviewed at each financial year-end and adjusted prospectively, if appropriate.

Right-of-use assets and related liabilities

Right-of-use assets:

The Company recognizes right-of-use assets at the commencement date of the lease (i.e., the date the underlying asset is available for use). Right-of-use assets are measured at cost, less any accumulated depreciation and impairment losses, and adjusted for any remeasurement of lease liabilities. The cost of right-of-use assets includes the amount of lease liabilities recognized, initial direct costs incurred, the estimated cost of any asset retirement obligation and lease payments made at or before the commencement date less any lease incentives received. Unless the Company is reasonably certain to obtain ownership of the leased asset at the end of the lease term, the recognized right-of-use assets are depreciated on a straight-line basis over the shorter of its estimated useful life and the lease term:

• Property leased Assets:	Lease terms up to 10 years or useful life of 10-15 years when reasonable certain ownership will be obtained at the end of the lease
• Leased machines:	Lease terms up to 10 years or useful life of 5-10 years when reasonable certain ownership will be obtained at the end of the lease
• Leased vehicles:	Lease terms up to 4 years or useful life of 4 years when reasonable certain ownership will be obtained at the end of the lease

Right-of-use assets are subject to impairment.

Lease liabilities:

At the commencement date of the lease, the Company recognizes lease liabilities measured at the present value of lease payments to be made over the lease term. The lease payments include fixed payments (including in substance fixed payments) less any lease incentives receivable, variable lease payments that depend on an index or a rate, and amounts expected to be paid under residual value guarantees. The lease payments also include the exercise price of a purchase option reasonably certain to be exercised by the Company and payments of penalties for terminating a lease, if the lease term reflects the Company exercising the option to terminate. The variable lease payments that do not depend on an index or a rate are recognized as expense in the period on which the event or condition that triggers the payment occurs. In calculating the present value of lease payments, the Company uses the incremental borrowing rate at the lease commencement date if the interest rate implicit in the lease is not readily determinable. After the commencement date, the amount of lease liabilities is measured at amortized cost using the effective interest rate method.

In addition, the carrying amount of lease liabilities is remeasured when there is a change in future lease payments arising from a change in an index or rate, if there is a change in the Group’s estimate of the amount expected to be payable under a residual value guarantee, if the Group changes its assessment of whether it will exercise a purchase, extension or termination option or if there is a revised in-substance fixed lease payment. When the lease liability is remeasured in this way, a corresponding adjustment is made to the carrying amount of the right-of-use asset, or is recorded in profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

Short-term leases and leases of low-value assets:

The Company applies the short-term lease recognition exemption to its short-term leases of machinery and equipment (i.e., those leases that have a lease term of 12 months or less from the commencement date and do not contain a purchase option) however this exemption is not applied for property leases. It also applies the lease of low-value assets recognition exemption to leases of office equipment that are considered of low value (i.e., below k€ 5). Lease payments on short-term leases and low-value assets are recognized in the income statement when incurred.

Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production of a qualified asset that necessarily takes a substantial period of time to prepare for its intended use or sale are capitalized as part of the cost of the respective assets. All other borrowing costs are expensed in the period they occur. Borrowing costs consist of interest and other costs that an entity incurs in connection with the borrowing of funds.

Research and development

Research and development includes the costs incurred by activities related to the development of software solutions (new products, updates and enhancements), guides and other products.

Development activities involve the application of research findings or other knowledge to a plan or a design of new or substantially improved (software) products before the start of the commercial use.

Development expenditures on an individual project are recognized as an intangible asset when the Group can demonstrate:

- the technical feasibility of completing the intangible asset so that the asset will be available for use or sale;
- its intention to complete and its ability to use or sell the asset;
- how the asset will generate future economic benefits;
- the availability of resources to complete the asset; and
- the ability to measure reliably the expenditure during development.

The Group has determined that the conditions for recognizing internally generated intangible assets from proprietary software, guide and other product development activities are not met until shortly before the products are available for sale, unless either (i) the Group has strong evidence that the above criteria are met and a detailed business plan is available showing the asset will on a reasonable basis generate future economic benefits or (ii) the development is done based upon specific request of the customer, it is highly likely that the Group will be able to market the product also to other parties than the customer, the development is subject to an agreement and the substance of the agreement is that the customer reimburses the Group for a significant portion, but not all, of the development expenses incurred. As such, development expenditures not satisfying the above criteria and expenditures on the research phase of internal projects are recognized in the consolidated income statement as incurred. Internally generated intangible assets from proprietary software are amortized over their useful lives, starting from the moment they are ready for use/available for sale.

Following initial recognition of the development expenditure as an asset, the asset is carried at cost less any accumulated amortization and accumulated impairment losses. Amortization of the asset begins when development is complete and the asset is available for use. It is amortized over the period of expected future benefit, which is determined on a project-by-project basis. Amortization is recorded in cost of sales. During the period of development, the asset is tested for impairment at least annually or whenever there is an indication of impairment.

Intangible assets other than goodwill and capitalized development expenditures

Intangible assets comprise acquired technology and customer portfolio, patents and licenses and technology and customers acquired in connection with business combinations. Those intangible assets are measured on initial recognition at cost, except for the acquired technology and customers arising from business combinations, which are measured initially at fair value. Following initial recognition, intangible assets other than goodwill are carried at cost less any accumulated amortization and accumulated impairment losses, if any.

The useful life of the intangible assets is as follows:

• Software:	3 years;
• Perpetual licences for ERP & front end software :	10 years;
• Software with subscription license :	subscription term
• Patents and licenses:	10 years;
• Acquired customers and Technology:	5-20 years;
• Order Backlog:	Period over which orders will be completed.

The intangible assets with finite lives are amortized over their useful economic life and assessed for impairment whenever there is an indication that the intangible asset may be impaired. The amortization period and the amortization method for an intangible asset with a finite useful life are reviewed at least at the end of each reporting period. The amortization expense on intangible assets with finite lives acquired through business combination is recognized in the consolidated income statement in the line "net other operating income".

Impairment of goodwill and other non-financial assets (excluding inventories and deferred tax assets)

Impairment tests on goodwill and other intangible assets with indefinite useful economic lives, assets under construction or capitalized development expenses which are not amortized yet, are undertaken annually at the financial year end. Other non-financial assets and goodwill are subject to impairment tests whenever events or changes in circumstances indicate that their carrying amount may not be recoverable. Where the carrying value of an asset exceeds its recoverable amount (i.e. the higher of value in use and fair value less costs to sell), the asset is written down accordingly.

Where it is not possible to estimate the recoverable amount of an individual asset, the impairment test is carried out on the smallest Group of assets to which it belongs for which there are separately identifiable cash flows: its cash generating units (CGUs). Goodwill is allocated on initial recognition to each of the Group's CGUs that are expected to benefit from the synergies of the combination giving rise to the goodwill.

The Group bases its impairment calculation on detailed budgets and forecast calculations, which are prepared separately for each of the Group's CGUs to which the individual assets are allocated. These budgets and forecast calculations generally cover a period of five years. For longer periods, a long-term growth rate is calculated and applied to future cash flows projected after the fifth year.

Impairment charges are included in profit or loss, except, where applicable, to the extent they reverse gains previously recognized in other comprehensive income. An impairment loss recognized for goodwill is not reversed.

Where goodwill forms part of a cash-generating unit and part of the operation within that unit is disposed of, the goodwill associated with the operation disposed of is included in the carrying amount of the operation when determining the gain or loss on disposal of the operation. Goodwill disposed of in this circumstance is measured based on the relative values of the operation disposed of and the portion of the cash-generating unit retained.

Inventories and Contracts in progress

Inventories are valued at the lower of cost and net realizable value. Costs incurred in bringing each product to its present location and condition are accounted for as follows:

- Raw materials: purchase cost on a first in, first out basis; and
- Finished goods and work in progress: cost of direct materials and labor and a proportion of manufacturing overheads based on the normal operating capacity, but excluding borrowing costs.

Net realizable value is the estimated selling price in the ordinary course of business, less estimated costs of completion and the estimated costs necessary to make the sale.

A write-off of inventories is estimated based on an ageing or rotation analysis.

Work in progress relates to production of inventory for which a customer has not yet been secured, while contracts in progress are contract assets that relate to production for specific customers in performance of a signed contract. We refer also to the accounting policy on revenue recognition.

Financial assets

Trade receivables and debt instruments issued are initially recognized when they are originated. All other financial assets are initially recognized when the Group become a party of the contractual provisions of the instrument.

Financial assets are classified at initial recognition, and subsequently measured either at amortized cost, either fair value through other comprehensive income (OCI), and fair value through profit or loss. The classification of financial assets at initial recognition depends on the financial asset's contractual cash flow characteristics and the Group's business model for managing them.

With the exception of trade receivables that do not contain a significant financing component or for which the Group has applied the practical expedient, the Group initially measures a financial asset at its fair value plus transaction costs, in the case of a financial asset not at fair value through profit or loss. Trade receivables that do not contain a significant financing component or for which the Group has applied the practical expedient are measured at the transaction price.

For purposes of subsequent measurement, financial assets are classified in four categories:

- Financial assets at amortized cost;
- Financial assets at fair value through OCI with recycling of cumulative gains and losses (debt instruments);
- Financial assets designated at fair value through OCI with no recycling of cumulative gains and losses upon derecognition (equity instruments); and
- Financial assets at fair value through profit or loss.

Financial assets measured at amortized cost

This category is the most relevant to the Group. The Group measures financial assets at amortized cost if both of the following conditions are met:

- The financial asset is held within a business model with the objective to hold financial assets in order to collect contractual cash flows; and
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Financial assets, trade and other receivables, cash and cash equivalents at amortized cost are subsequently measured using the effective interest rate (EIR) method and are subject to impairment. Gains and losses are recognized in profit or loss when the asset is derecognized, modified or impaired.

Financial assets at fair value through OCI with recycling of cumulative gains and losses (debt instruments)

The Group currently does not have financial assets at fair value through OCI with recycling of cumulative gains and losses.

Financial assets designated at fair value through OCI with no recycling of cumulative gains and losses upon derecognition (equity instruments)

The Group has irrevocably elected at initial recognition to classify the minority equity investments in the non-listed companies Essentium Inc and AM-Flow BV, as disclosed in Note 10 and Note 20, as financial assets designated at fair value through OCI as this measurement is most representative of the business model for these assets. Gain and losses on these financial assets are never recycled to profit and loss. Equity instruments designated at fair value through OCI are not subject to impairment assessment.

Financial assets measured at fair value through profit or loss

The Group does have the following financial assets classified as financial assets at fair value through profit or loss:

- derivatives,
- convertible loans granted to companies Fluidda and Ditto as disclosed in Note 10;.

Those financial assets are carried in the statement of financial position at fair value with changes recognized in the income statement in the lines financial income/expense.

Derecognition

A financial asset is derecognized when:

- The rights to receive cash flows from the asset have expired, or
- The Group has transferred its rights to receive cash flows from the assets.

The Group has a factoring agreement in place with one subsidiary whereby its rights to receive the cash flows from the trade receivables are transferred to the factor on a non-recourse basis. The related trade receivables are derecognized at the moment that the cash is received from the factor.

Impairment of financial assets

Further disclosures relating to impairment of financial assets are also provided in Note 3 Significant accounting judgments, estimates and assumptions.

The Group recognizes an allowance for expected credit losses (ECLs) for all debt instruments not held at fair value through profit or loss.

For trade receivables and contract assets, the Group applies a simplified approach in calculating ECLs. A loss allowance is recognized at each reporting date based on lifetime ECLs. The Group established a provision matrix that is based on its historical loss experience, adjusted for forward-looking factors specific to the debtors and the economic environment.

For all other receivables, ECLs are based on the difference between the contractual cash flows due in accordance with the contract and all the cash flows that the Group expects to receive, discounted at an approximation of the original effective interest rate. The expected cash flows will include cash flows from the sale of collateral held or other credit enhancements that are integral to the contractual terms. ECLs are recognized in two stages. For credit exposures for which there has not been a significant increase in credit risk since initial recognition, ECLs are provided for credit losses that result from default events that are possible within the next 12-months (a 12-month ECL). For those credit exposures for which there has been a significant increase in credit risk since initial recognition, a loss allowance is required for credit losses expected over the remaining life of the exposure, irrespective of the timing of the default (a lifetime ECL). When determining whether the credit risk has increased significantly since initial recognition, the group considers reasonable and supportable information that is relevant and available with undue cost or effort, including both quantitative and qualitative information and analysis, based on the Group's historical experience and informed credit assessments, that includes forward-looking information. The Group assumes that the credit risk on a financial asset has increased significantly if it is more than 30 days past due. An event of default takes place when the debtor is unlikely to pay its credit obligations to the Group in full or when the financial asset is more than one year past due.

Financial liabilities

All financial liabilities are recognized initially at fair value and, in the case of loans and borrowings and payables, net of directly attributable transaction costs.

The Group's financial liabilities include trade and other payables, loans and borrowings including bank overdrafts and derivative financial instruments including written put options over non-controlling interests.

Financial liabilities at amortized cost

The trade and other payables, and loans and borrowings are classified as financial liabilities at amortized cost.

Those financial liabilities are measured at amortized cost using the effective interest rate method. Gains and losses are recognized in the income statement when the liabilities are derecognized as well as through the effective interest rate method amortization process.

Financial liabilities at fair value through profit and loss

The derivative financial instruments are classified as financial liabilities at fair value through profit and loss except for the written put options on non-controlling interests which is disclosed below.

Written put options on non-controlling interest

The Group recognizes a financial liability for the written put options on non-controlling interest. The written put options have a variable redemption price based on a formula as specified in the contract (see Note 13).

- The financial liability is initially recognized at fair value and the fair value is reclassified from non-controlling interest and, for any amount higher than the non-controlling interest, from consolidated reserves.
- The fair value is determined as the present value of the redemption amount.
- Any change in the fair value as a result of a change in the estimated redemption price is recognized directly in consolidated reserves. Any unwinding effect of the present value of the redemption price is recognized directly in profit and loss (financial cost).
- No share of profit is allocated to the non-controlling interest.
- Upon exercise of the written put option, the carrying value will be offset with the cash payment received. When the written put option is not exercised, the carrying value of the financial liability is derecognized against non-controlling interest with the difference going to consolidated reserves.

Compound financial instruments

The Group has issued convertible debt which is accounted for as a compound financial instrument. For those instruments, the Group determines the carrying amount of the liability component by measuring the fair value of a similar liability (including any embedded non-equity derivative features) that does not have an associated equity component. The carrying amount of the equity instrument is then determined by deducting the fair value of the financial liability from the fair value of the compound financial instrument as a whole. Directly attributable transaction costs are apportioned between the liability and equity components of the convertible debt instrument, based on the allocation of proceeds to the liability and equity components when the instruments are initially recognized. Subsequent to initial recognition, the liability component of a compound financial instrument, is measured at amortized cost using the effective interest method. The equity component of a compound financial instrument is not remeasured.

Derecognition

A financial liability is derecognized when the obligation under the liability is discharged or cancelled or expires.

Offsetting

Financial assets and financial liabilities are offset and the net amount is reported in the consolidated statement of financial position if there is a currently enforceable legal right to offset the recognized amounts and there is an intention to settle on a net basis, or to realize the assets and settle the liabilities simultaneously.

Share capital

Financial instruments issued by the Group are classified as equity only to the extent that they do not meet the definition of a financial liability or financial asset. The Group's ordinary shares are classified as equity instruments.

Provisions

Provisions are recognized when the Group has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation.

Pensions benefits

The Group has a defined contribution obligation where the Group pays contributions based on salaries to an insurance company, in accordance with the laws and agreements in each country.

The Belgian defined contribution pension plans are by law with variable minimum returns based on the Belgian government bonds, with a minimum of 1.75% and a maximum of 3.75%, effective for contributions paid as from 2016. For contribution paid until 2015, the minimum guaranteed return is 3.25% on employer contributions and 3.75% on employee contributions.

These plans qualify as defined benefit plans. Contributions are recognized as expenses for the period in which employees perform the corresponding services. Outstanding payments at the end of the period are shown as other current liabilities.

Those plans are not accounted for as a defined benefit plan as they are considered to be not material.

Share based payments

Directors and employees (including senior executives) of the Group receive remuneration in the form of share-based payments, whereby employees render services as consideration for equity instruments (equity-settled transactions). The Group currently has only warrants and share-appreciation rights as share-based payments.

Equity-settled transactions

Equity-settled share-based payments to employees and others providing similar services are measured, indirectly, at the fair value of the equity instruments granted. The cost of equity-settled transactions is recognized, together with a corresponding increase in other capital reserves in equity, over the period in which the performance and/or service conditions are fulfilled. The cumulative expense recognized for equity-settled transactions at each reporting date until the vesting date reflects the extent to which the vesting period has expired and the Group's best estimate of the number of equity instruments that will ultimately vest. The income statement expense or credit for a period represents the movement in cumulative expense recognized at the beginning and end of that period and is recognized as employee benefits expense.

The Group does currently only have equity-settled share-based payments that have service-based vesting conditions and no instruments with market vesting conditions.

No expense is recognized for awards that do not ultimately vest.

When the terms of an equity-settled award are modified, the minimum expense recognized is the expense as if the terms had not been modified, if the original terms of the award are met. An additional expense is recognized for any modification that increases the total fair value of the share-based payment transaction, or is otherwise beneficial to the employee as measured at the date of modification.

When an equity-settled award is cancelled, it is treated as if it vested on the date of cancellation, and any expense not yet recognized for the award is recognized immediately. This includes any award where non-vesting conditions within the control of either the entity or the employee are not met. However, if a new award is substituted for the cancelled award, and designated as a replacement award on the date that it is granted, the cancelled and new awards are treated as if they were a modification of the original award, as described in the previous paragraph.

Cash-settled transactions

The Group has cash-settled share-based payment transaction for certain employees in certain countries due to legal requirements (in the form of share-appreciation rights). The cost of cash-settled transactions is measured initially at fair value at the grant date. This fair value is expensed over the period until the vesting date with recognition of a corresponding liability. The liability is remeasured to fair value at each reporting date up to, and including the settlement date, with changes in fair value recognized in employee benefits expense.

Revenue from contracts with customers

The Group's revenue, which is presented net of sales taxes, is primarily generated by the sale of our software and 3D printed products and services. Software revenue is comprised of perpetual and periodic licenses, maintenance revenue and software development service fees. Perpetual license holders may opt to take an annual maintenance contract, which leads to annual fees. Periodic licenses entitle the customer to maintenance, support and product updates without additional charge. Revenue from prototypes and end products involving 3D printing technology is derived from our network of production centers and may include support and services such as pre-production collaboration prior to the actual production.

The Group sells its products and software through its direct sales force and through authorized distributors.

Software license revenue, maintenance and/or software development service fees may be bundled in one arrangement, or may be sold separately.

The Group recognizes revenue for goods including software based on the five-step model as a result of the application of IFRS 15 since January 1, 2018.

- Identify the contract(s) with a customer;
- Identify the performance obligations in the contract;
- Determine the transaction price;
- Allocate the transaction price to the performance obligations in the contract; and
- Recognize revenue when (or as) the entity satisfies a performance obligation.

Revenue from contracts with customers is recognized when control of the goods or services are transferred to the customer at an amount that reflects the consideration to which the Group is expected to be entitled in exchange from those goods and services.

If the consideration in a contract includes a variable amount, the Group estimates the amount of consideration to which it will be entitled in exchange for transferring the goods to the customer. The variable consideration is estimated at contract inception and constrained until it is highly probable that a significant revenue reversal in the amount of cumulative revenue recognized will not occur when the associated uncertainty with the variable consideration is subsequently resolved. Variable consideration is mainly related to quantities sold, volume (step-based) rebates and development time spend.

Prototypes and end products involving 3D printing technology

The Group recognizes revenue on the sale of goods to the customer or distributor at a point in time when control of the asset is transferred, generally upon shipment or delivery taking into account the shipment terms (usually Ex-works or FOB Time of Shipment Incoterms (International Commercial Terms)).

Perpetual licensed software

The sale and/or license of software products is deemed to have occurred at a point in time, i.e. when a customer either has taken possession of or has the ability to take immediate possession of the software and the software key.

Perpetual software licenses can include one year maintenance and support services as a separate performance obligation. The Company sells these maintenance services also on a stand-alone basis and is therefore capable of determining their stand-alone selling price. On this basis, the amount of the embedded maintenance is separated from the fee for the perpetual license and is recognized ratably over the period to which they relate.

Time-based licensed software

The time-based license agreements include the use of a software license for a fixed term and maintenance and support services during the same period. The Company does not sell time-based licenses without maintenance and support services and therefore revenues is satisfied over time for the entire arrangements and is recognized ratably over the term.

Maintenance and support services

Maintenance and support services are satisfied over time and as such, the Group recognizes this revenue ratably on a straight-line basis over the term that the maintenance service is provided. In general, maintenance services are not automatically renewed.

A maintenance and support contract may include a reinstatement for previous years when the customer did not have a maintenance and support contract previously. Revenue from reinstatements are recognized immediately when the maintenance and support services commence.

Software development services (SDS)

SDS include customized development of software components for customers. Revenue from SDS agreements when distinct from other performance obligations is satisfied over time. Revenue is then recognized either on time and material basis or on the stage of completion of each service contract and when the stage of completion can be measured reliably.

The Company determines the percentage-of-completion by comparing labor hours incurred to-date to the estimated total labor hours required to complete the project. The Company considers labor hours to be the most reliable available measure of progress on these projects. Adjustments to the Company's estimates of the time to completion are made when facts resulting in a change become known. When the estimate indicates that a loss will be incurred, such loss is recognized immediately.

Contracts with multiple performance obligations

The Group has entered into a number contracts with multiple performance obligations, such as when selling perpetual licenses that may include maintenance and support (included in price of perpetual licenses) and time-based licenses (that include embedded maintenance and support, both of which may be sold with software development services, training, and other product sales). In some cases, the Group delivers software development services bundled with the sale of the software.

The Group evaluates whether each performance obligation is distinct from each other, i.e. the customer can benefit from the good or service on its own, or with readily available resources. Certain development services significantly modify and/or enhance the software license and as such are not considered distinct and combined with the software license.

In those contracts, whether sold to end-customers or to collaboration partners, the Group uses either price list, historical pricing information or management's best estimate of selling prices (e.g. also using a cost-plus method) to determine the stand-alone selling price for each distinct performance obligation, including software and software-related services such as maintenance and support. In general, elements in such arrangements are also sold on a stand-alone basis and stand-alone selling prices are readily available.

Revenue is allocated to each distinct performance obligation ("PO") based on the relative percentage of the stand-alone selling price for each PO compared to the total of stand-alone selling prices for all PO over the total transaction price and is recognized when the revenue recognition criteria described above are met.

Contracts with collaboration partners in the medical segment also include multiple elements such as software, maintenance and support services, training, software development services, 3D printed products and royalties. Revenue from those contracts is determined and recognized consistent with other multiple element arrangements.

For certain contracts with collaboration partners, the Company also receives up-front fees, paid by customers for certain exclusivity rights granted only on previously acquired perpetual software licenses, which may be bundled with transfer of title, rights and ownership of certain software products and maintenance and support services. In case the up-front fees do not relate to already delivered good or services, the Group include the up-front fees in the total transaction price which is then allocated to all the distinct performance obligations. Other contracts with collaboration partners include prepaid fees to purchase a maximum number of "Plan Only" cases during a 12-month period. In this case, the prepaid fees are recognized over the period of 12 months based on the expected number of "Plan Only" cases that will be purchased.

Contract assets

A contract asset is the right to consideration in exchange for goods or services transferred to the customer. If the Group performs by transferring goods or services to a customer before the customer pays consideration or before payment is due, a contract asset is recognized for the earned consideration that is conditional. Contract assets are only contracts in progress that are disclosed with the line inventory and contracts in progress in the statement of financial position. We refer to our accounting policies regarding Inventories and Contracts in Progress

Contract liabilities

A contract liability is the obligation to transfer goods or services to a customer for which the Group has received consideration (or an amount of consideration is due) from the customer. If a customer pays consideration before the Group transfers goods or services to the customer, a contract liability is recognized when the payment is made or the payment is due (whichever is earlier). Contract liabilities are recognized as revenue when the Group performs under the contract. Contract liabilities are presented as deferred income in the statement of financial position.

Contract costs

The Group does not have significant costs to obtain contracts and those costs are expensed as incurred.

The Group may have costs incurred in fulfilling contracts that are accounted for as intangible assets. When those costs are not in scope of another standards, these costs are accounted for under contracts in progress (see contract assets). For certain contracts, the Group may have significant software development expenses that are not considered a "distinct performance obligation" which are accounted for as an intangible assets. The Group evaluates whether those costs meet the recognition criteria for an intangible assets and when criteria are not met, expenses those costs as incurred.

Government grants

Government grants are recognized when there is reasonable assurance that the grant will be received and all attached conditions will be complied with. When the grant relates to development costs or another expense, it is recognized as income over the grant period necessary to match the income on a systematic basis to the costs that it is intended to compensate. When the grant relates to the construction of buildings, it is recognized as income over the depreciation period of the related building.

Such grants have been received from the federal and regional governments and from the European Union in the forms of grants linked to certain of its research and development programs, reduced payroll taxes and the financing of the construction of an office building in Leuven (Belgium) and in Freiberg (Germany).

Where retention of a government grant related to assets or to income, is dependent on the Company satisfying certain criteria, it is initially recognized as deferred income. When the criteria for retention have been satisfied, the deferred income balance is released to other operating income in the consolidated income statement 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.

Other financial income and expenses

Other financial income and expenses include mainly foreign currency gains or losses on financial transactions and bank related expenses.

Taxes

Current income tax

Income tax assets and liabilities for the current period are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted, at the reporting date.

Current income tax relating to items that are recognized directly in equity is recognized in equity and not in the income statement. Management periodically evaluates positions taken in the tax returns with respect to situations in which applicable tax regulations are subject to interpretation and establishes provisions where appropriate.

Deferred tax

Deferred tax is calculated using the liability method on temporary differences at the reporting date between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes.

Deferred tax liabilities are recognized for all taxable temporary differences. Deferred tax assets are recognized for all deductible temporary differences, carry forward of unused tax credits and unused tax losses, to the extent that it is probable that taxable profit will be available against which the deductible temporary differences, and the carry forward of unused tax credits and unused tax losses can be utilized.

The carrying amount of deferred tax assets is reviewed at each reporting date and reduced to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilized. Unrecognized deferred tax assets are reassessed at each reporting date and are recognized to the extent that it has become probable that future taxable profits will allow the deferred tax asset to be recovered.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the year when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the reporting date.

Deferred tax assets and deferred tax liabilities are offset, if a legally enforceable right exists to set off current tax assets against current income tax liabilities and the deferred taxes relate to the same taxable entity and the same taxation authority.

Sales tax

Revenue, expenses and assets are recognized net of the amount of VAT, except:

- Where the sales tax incurred on a purchase of assets or services is not recoverable from the taxation authority, in which case the sales tax is recognized as part of the cost of acquisition of the asset or as part of the expense item as applicable; and
- Receivables and payables that are stated with the amount of sales tax included.

The net amount of sales tax recoverable from, or payable to, the taxation authority is included as part of receivables or payables in the statement of financial position.

New and revised standards not yet adopted

The standards, interpretations and amendments issued by the IASB and relevant for the Group, but not yet effective are not expected to have a material impact on the Group's future consolidated financial statements:

- IFRS 17 Insurance Contracts (applicable for annual periods beginning on or after 1 January 2023, but not yet endorsed in the EU).
- Amendments to IAS 1 Presentation of Financial Statements: Classification of Liabilities as Current or Non-current (applicable for annual periods beginning on or after 1 January 2023, but not yet endorsed in the EU).
- Amendments to IAS 16 Property, Plant and Equipment: Proceeds before Intended Use (applicable for annual periods beginning on or after 1 January 2022, but not yet endorsed in the EU).
- Amendments to IAS 37 Provisions, Contingent Liabilities and Contingent Assets: Onerous Contracts — Cost of Fulfilling a Contract (applicable for annual periods beginning on or after 1 January 2022, but not yet endorsed in the EU).
- Amendments to IFRS 3 Business Combinations: Reference to the Conceptual Framework (applicable for annual periods beginning on or after 1 January 2022, but not yet endorsed in the EU).
- Amendment to IFRS 4 Insurance Contracts – deferral of IFRS 9 (applicable for annual periods beginning on or after 1 January 2021).
- Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16 Interest Rate Benchmark Reform – Phase 2 (applicable for annual periods beginning on or after 1 January 2021).
- Annual Improvements to IFRS Standards 2018–2020 (applicable for annual periods beginning on or after 1 January 2022, but not yet endorsed in the EU).

Significant accounting judgments, estimates and assumptions

The preparation of the Group's consolidated financial statements requires management to make judgments, estimates and assumptions that affect the reported amounts of revenue, expenses, assets and liabilities, and the accompanying disclosures. Uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of assets or liabilities for future periods.

On an ongoing basis, the Group evaluates its estimates, assumptions and judgments, including those related to revenue recognition, development expenses, share-based payment transactions, income taxes, impairment of goodwill, intangible assets and property, plant & equipment and business combinations, provisions for expected credit losses, convertible loans, equity instruments, useful lives of certain assets and leases.

The Group based its assumptions and estimates on parameters available when the consolidated financial statements were prepared. Existing circumstances and assumptions about future developments, however, may change due to market changes or circumstances arising beyond the control of the Group. Such changes are reflected in the assumptions when they occur.

Revenue recognition

Our revenue recognition policies require management to make significant estimates. Management analyzes various factors, including a review of specific transactions, historical experience, creditworthiness of customers and current market and economic conditions. Changes in judgments based upon these factors could impact the timing and amount of revenue and cost recognized and thus affects our results of operations and financial condition. The significant estimates and judgments relate to:

- The assessment whether a performance obligation is distinct in a bundled sales transactions;
- Estimates of the variable considerations and the assessment of the revenue constraint limitation;
- Estimates of the stand-alone selling prices for each distinct performance obligation; and
- The stage of completion of our customized development of software components for customers when revenue is satisfied over time.

The Group is making significant judgments when performing the assessment of whether a performance obligation is distinct from the other performance obligations in a contract, i.e. whether the good or service has a benefit for the customer in its own or together with readily available resource and/or whether the good or service is highly interrelated or a significant input with another good or service delivered, or whether it significantly modifies or customizes another good or service. The relevant judgments include the following:

- Whether the software license is distinct from the 3D printed guides — in most cases with contracts with collaboration partners in the Materialise Medical segment, the software licenses is combined with the manufacturing of the 3D printed guides as the software license has no benefit for the customer without the manufacturing services.
- Whether the development services are distinct from other performance obligations — in most cases, those performance obligations are distinct however for one contract with a collaboration partner in the Materialise Medical segment, the software license is combined with the license and the 3D printed guides as one "distinct" performance obligation.

For the stand-alone selling prices, the Group is using prices from price list or historical prices for similar transactions. However, in certain cases, such information is not immediately available and in such cases, the Group estimates the stand-alone selling price by using a cost-plus or another estimate. In addition, for certain performance obligations such as development services, stand-alone selling prices also require an estimate of the time to complete the development.

Certain contracts include estimates of variable considerations within the transaction price and assessing the revenue constraint, such as:

- Quantities/volume sold for fixed prices in relation to, but not limited to, manufacturing of 3D printed products, software licenses sold, maintenance renewals;
- Contractual prices may be different based on volume purchased during a certain period;
- FTE spend for development or other services billed on a time and material basis; and
- Volume rebates.

The method applied to estimate the variable consideration is dependent on the number of possible scenarios and the probability of each scenario. In case there are many possible scenarios with a wide range of probabilities (each less than 50%), the Group will use the expected value method while the most likely method is used when there is a scenario with a higher probability (more than 50%).

Variable consideration is not constrained when, based on historical experience, high reliable business forecast and/or the timeframe of the estimates, the Group determines that there is a high probability that this will not result in a future revenue reversal.

We determine the stage of completion for development contracts satisfied over time by comparing labor hours incurred to-date to the estimated total labor hours required to complete the project. We consider labor hours to be the most reliable, available measure of progress on these projects. Adjustments to estimates to complete are made in the periods in which facts resulting in a change become known. When the estimate indicates that a loss will be incurred, such loss is recorded in the period identified. Significant judgments and estimates are involved in determining the percent complete of each contract. Different assumptions could yield materially different results.

Development expenses

Under IAS 38, internally generated intangible assets from the development phase are recognized if certain conditions are met. These conditions include the technical feasibility, intention to complete, the ability to use or sell the asset under development, the availability of adequate technical, financial and other resources to complete the development, the ability to measure reliably the expenditure attributable to the intangible asset during its development and the demonstration of how the asset will generate probable future economic benefits. The cost of a recognized internally generated intangible asset comprises all directly attributable cost necessary to make the asset capable of being used as intended by management. In contrast, all expenditures arising from the research phase are expensed as incurred.

Determining whether internally generated intangible assets from development are to be recognized as intangible assets requires significant judgment, particularly in determining whether the activities are considered research activities or development activities, whether the product enhancement is substantial, whether the completion of the asset is technical feasible considering a company-specific approach, the probability of future economic benefits from the sale or use including an assessment whether FDA approval will be obtained.

The Group has determined that the conditions for recognizing internally generated intangible assets from proprietary software, guide and other product development activities are not met until shortly before the products are available for sale, unless either (i) the Group has strong evidence that the above criteria are met and a detailed business plan is available showing the asset will on a reasonable basis generate future economic benefits or (ii) the development is done based upon specific request of the customer, the Group has the intention to market the product also to other parties than the customer, the development is subject to an agreement and the substance of the agreement is that the customer reimburses the Group for a significant portion of the development expenses incurred. As such, development expenditures not satisfying the above criteria and expenditures on the research phase of internal projects are recognized in the consolidated income statement as incurred. This assessment is monitored by the Group on a regular basis.

The Group has capitalized a total of K€1,135 of internal development expenses during 2020 of which:

- K€702 was related to Tracheal Splint. The total amount capitalized at the end of September 2020 had accumulated to K€2,090 related to the US-market for the Tracheal Splint development project since 2017, based on a positive assessment of all recognition criteria. In September 2020, the FDA however has disapproved the IDE-submission (Investigational Device Exemption submission). An amended IDE submission has been disapproved again on December 17, 2020. Management confirms that the fundamentals of technical feasibility, the IDE approval, successful outcome of the clinical trial and obtaining the FDA's Premarket Approval ("PMA"), remains clearly positive, but will cause a delay of the start of commercialization of approximately 2 years compared to our previous assumptions until commercialization. As a result, the headroom defined as the difference between the development expenses capitalized and to be incurred until PMA and the present value of the expected cash flows until 2030 (the year after which the patent expires) has become negative. The Group concluded that a full impairment of the capitalized expenditures is appropriate for the total amount of K€2,090.
- K€363 relate to capitalized internal development expenses of our digital transformation program for which in total K€2,185 was registered as assets under construction. The balance of K€1,822 consisted of related software arrangements (cloud) for internal use under the form of a perpetual license or subscription agreement. The development expenses related to the implementation of the software meet the criteria for recognition.
- K€70 related to other development programs.

Share-based payment transactions

The Group measures the cost of equity-settled transactions with employees by reference to the fair value of the equity instruments at the date at which they are granted and measured the cost of cash-settled transactions by reference to the fair value of the equity instrument at the date of reporting. The Group has applied the Black-Scholes valuation model to estimate fair value. Using this model requires management to make assumptions with regards to volatility and expected life of the equity instruments. The assumptions used for estimating fair value for share-based payment transactions are disclosed in Note 14 and are estimated as follows:

- Volatility is estimated based on the average annualized volatility of the Group;
- Estimated life of the warrant is estimated to be until the first exercise period which is typically the month after their vesting;
- Fair value of the shares is determined based on the share price of the Group on Nasdaq at the date of issuance. For the grants prior to the initial public offering, the fair value of the shares was estimated based on a discounted cash flow model with 3-year cash flow projections and a multiple of EBITDA determined based on a number quoted peers in the 3D printing industry; and
- The dividend return is estimated by reference to the historical dividend payment of the Group. Currently, this is estimated to be zero as no dividends have been paid since inception.

Income taxes

Deferred tax assets are recognized for unused tax losses to the extent that it is probable that taxable profit will be available against which the losses can be utilized. Significant management judgment is required to determine the amount of deferred tax assets that can be recognized, based upon the likely timing and the level of future taxable profits together with future tax planning strategies.

As at December 31, 2020, the Group had current and non-current receivables related to tax credits for an amount of K€4,647 (2019: K€3,723; 2018: K€3,191)

As at December 31, 2020, the Group had K€50,538 (2019: K€37,440; 2018: K€25,285) of tax losses carried forward and Innovation Income Deductions, of which K€27,878 related to Materialise NV (2019: K€25,172; 2018: K€15,592). These losses relate to the parent and subsidiaries that have a history of losses, in countries where these losses do not expire and may not be used to offset taxable income elsewhere in the Group.

With respect to the unused tax losses of Materialise NV, no deferred tax assets have been recognized in 2020, 2019 and 2018, given that in view of the Belgian Patent Income Deduction and Innovation Income Deduction there is an uncertainty to which extent these tax losses will be used in future years. As from July 1, 2016, the Innovation Income Deduction replaces the former Patent Income Deduction. Under the grandfathering rule the Patent Income Deduction system can still be applied until June 30, 2021. The Belgian Patent Income Deduction allows companies to deduct 80% of the qualifying gross patent income from the taxable basis. Under the Innovation Income Deduction system, companies can deduct up to 85% of their net innovation income from the taxable basis. Based on its analysis in 2018, 2019 and 2020 the Company has assessed that no deferred tax asset should be accounted for with respect to its unused tax losses and unused Innovation Income Deductions carried forward in Belgium.

With respect to the unused tax losses of the other entities, no deferred tax assets have been recognized in 2020 and 2019. The Group has not recognized deferred tax assets on unused tax losses totalling K€22,661 in 2020 (2019: K€10,737; 2018: K€11,906) given that it is not probable that sufficient positive taxable base will be available in the foreseeable future against which these tax losses can be utilized.

If the Group was able to recognize all unrecognized deferred tax assets, the net result would have improved by K€8,705 in 2020 through a deferred tax gain. This would represent the planned recovery of K€36,154 carry forward tax losses in future periods. Further details on taxes are disclosed in Note 22.10.

Impairment of goodwill, intangible assets and property, plant & equipment and determination of the cash-generating-unit.

The Group has goodwill for a total amount of K€20,342 as at December 31, 2020 (2019: K€19,607*; 2018: K€17,491) which has been subject to an impairment test. The goodwill is tested for impairment based on a discounted cash flow model with cash flows for the next five years derived from the budget and a residual value considering a perpetual growth rate. The value in use is sensitive to the discount rate used for the DCF model as well as the expected future cash-inflows and the growth rate used for extrapolation purposes.

Also, as part of the impairment analysis, the Group needs to determine the different CGUs at the lowest non-aggregated level which requires the Group to make judgments about application of the criteria to determine the CGUs based on the facts and circumstances how the entities and business units within the CGU and within the Group operate and are monitored. The level of CGU may also have an impact on certain assumptions to make with regard to transfer pricing.

The key assumptions used to determine the value in use for the different CGUs are disclosed and further explained in Note 5.

The Group capitalized development expenses in 2020 for a total amount K€4,541 (2019: K€1,328; 2018: K€682), including external acquired licences, which as of December 31, 2020 were not yet in the condition as intended by management and as such not amortized. Those development expenses have been subject to an impairment test based on a discounted cash flow model with cash flows derived from the latest business plan. The value in use is sensitive to the discount rate used for the DCF model as well as the expected commercialization date for the products and the expected future cash inflows after commercialization. We refer to the section on development expenses above for further explanations.

When events or changes in circumstances indicate that the carrying amount of the intangible assets and property, plant and equipment may not be recoverable, we estimate the value in use for the individual assets, or when not possible, at the level of CGUs to which the individual assets belong.

During 2020 impairment charges have been recorded for K€4,606 (2019: K€0; 2018: K€0) of which K€2,090 related to capitalized development expenses for the Tracheal Splint and; K€2,516 related to goodwill and intangible assets of the Engimplan CGU.

Business combinations

We determine and allocate the purchase price of an acquired business to the assets acquired and liabilities assumed as of the business combination date. Business combinations are discussed further in Note 4. The purchase price allocation process requires us to use significant estimates and assumptions, including

- estimated fair value of the acquired intangible assets;
- estimated fair value of property, plant and equipment; and
- estimated fair value of the contingent consideration.

The contingent consideration as included in the financial statements is recorded at fair value at the date of acquisition and is reviewed on a regular basis. The fair value of the contingent consideration is based on risk-adjusted future cash flows of different scenarios discounted using appropriate interest rates. The structure of the possible scenarios and the probability assigned to each one of them is reassessed by management at every reporting period and requires judgement from management about the outcome and probability of the different scenarios as well as the evolution of the variables.

While we are using our best estimates and assumptions as part of the purchase price allocation process to accurately value assets acquired and liabilities assumed at the date of acquisition, our estimates and assumptions are inherently uncertain and subject to refinement. Examples of critical estimates in valuing certain of the intangible assets we have acquired or may acquire in the future include but are not limited to:

- future expected cash flows from customer contracts and relationships, software license sales and maintenance agreements;
- the fair value of the plant and equipment
- the fair value of the deferred revenue; and
- discount rates.

Provision for expected credit losses of trade receivables and contract assets

The Group uses a provision matrix to calculate ECLs for trade receivables and contract assets. The provision rates are based on days past due for groupings of various customer segments that have similar loss patterns (i.e., by legal entity).

The provision matrix is initially based on the Group's historical observed default rates. The Group will calibrate the matrix to adjust the historical credit loss experience with forward-looking information. For instance, if forecast economic conditions (i.e., gross domestic product) are expected to deteriorate over the next year which can lead to an increased number of defaults, the historical default rates are adjusted. At every reporting date, the historical observed default rates are updated and changes in the forward-looking estimates are analyzed.

The assessment of the correlation between historical observed default rates, forecast economic conditions and ECLs is a significant estimate. The amount of ECLs is sensitive to changes in circumstances and of forecast economic conditions. The Group's historical credit loss experience and forecast of economic conditions may also not be representative of customer's actual default in the future.

Convertible debt instruments

The Group holds convertible debt instruments issued by Fluidda, Ditto and AM Flow which are measured at fair value through profit & loss. In determining the fair value of those convertible debt instruments, the Group considers different contractual parameters such as the repayment and conversion scenarios and dates. In addition, the Group needs to make significant estimates such as (i) the discount rate, (ii) the probabilities for each repayment and conversion scenario, (iii) the amount of a qualified capital increase that will determine the conversion factor and (iv) the timing for each repayment and conversion scenario.

The Group has the following convertible debt instruments:

- Fluidda: The convertible loan granted to Fluidda in January 2019 has a notional amount of K€2,500. The carrying value of the convertible loan as at December 31, 2020 amounts to K€3,310 which includes a fair value adjustment of K€316 recorded in financial income during 2020. Fluidda is a private start-up company which delivers CRO services for drug development and develops medical devices which require EMA/FDA approvals. Fluidda is currently loss-making. The convertible loan has a duration of 7 years with a 10.0% annual interest rate which are capitalized. The Group has applied a discount factor of 14.44% that is based on the estimated WACC of Fluidda reflecting the uncertainty in relation to the success of the company and the applied estimates by the Group.
- Ditto: The convertible loan granted to Ditto in August 2020 has a notional amount up to K$9,000, which is called-up in periodic tranches when certain milestones are reached or otherwise decided. The carrying value of the portions that were called up as at December 31, 2020 amounts to K€2,892. No fair value adjustment has been recorded as the fair value equals the loan's carrying amount. Ditto is a private technology company which has a software solution for the eyeware industry with iPad app, frame recommendation and virtual try-on technology platform. Ditto is currently loss-making. The convertible loan has a duration of 5 years with a capitalized interest determined at a 8% annual interest rate.
- AM Flow: The Group granted a convertible loan to AM Flow in January 2020 with a notional amount of K€300. The loan was converted into shares of AM Flow in September 2020 at a fair value of K€307.

Equity investment held in Essentium

The Group acquired an equity investment of K$3,300 in Essentium, a non-listed US company during 2018 and 2019. The Group has elected to measure the equity investment at fair value with changes in fair value recognized in OCI. The fair value is estimated based on available information on recent capital increases by Essentium. Based on the valuation of the recent Series B capital round, the Group has estimated that the fair value at December 31, 2020 amounts to K€3,535 with a fair value adjustment recognized in OCI of K€489. No fair value adjustments were recorded in 2019 and 2018.

Fair value measurement of the existing equity interest in RS Print re-measured at the acquisition date 9 November 2020

As explained further in Note 4, the Group entered into a share purchase agreement dated November 9, 2020 and acquired the remaining 50% of the shares of RS Print Powered By Materialise (referred to as “RS Print”). Before this transaction, Materialise NV already had a 50% interest in RS Print. As foreseen by IFRS 3, as part of this step acquisition, the Group remeasured its previously held equity interest to fair value of 9 November 2020, resulting in a fair value of K€770. The fair value was determined based on the consideration paid for the 50% of the shares of the existing shareholders adjusted for certain discounts such as a strategic discount, minority discount and discount for lack of marketability. The strategic discount was estimated based on the synergies expected to be realized by the Group, the Partnership Agreement entered into with Superfeet Inc., the ultimate parent company of the Group’s former joint venture partner, and the underlying business plan. The minority discount and discount for lack of marketability were estimated based on available company specific datasets and benchmarks.

Changes in useful life for certain assets

We review the useful life of our definite lived intangible assets and property, plant and equipment on an annual basis considering the current facts and circumstances available. This review resulted in 2019 in a re-assessment of the useful life for certain specific assets in the categories buildings, fixtures, vehicles and machinery. We refer to Note 7 for the impact of the change in useful lives during the year 2019. The intangibles with indefinite useful lives are reviewed each annual reporting to determine whether events and circumstances continue to support an indefinite useful life.

Leases IFRS 16 – estimating the discount rate and probability of exercising extension options/termination options and purchase options

The Group cannot always determine the interest rate implicit in the lease contract and therefore, the Group has to estimate the incremental borrowing rate to measure certain lease liabilities such as buildings. The Group uses for buildings the property yield as reference to determine the incremental borrowing rate. For other assets, the Group generally uses the interest rate implicit in the lease contract or applies the incremental borrowing rate for a portfolio of similar assets. The incremental borrowing rate reflects what the Group “would have to pay”, which requires estimation when no observable rates are available or when they need to be adjusted to reflect the terms and conditions of the lease.

In addition, certain lease contracts may have extension options, termination options in case of property leases and/or purchase options in case of leases. The Group estimates whether it is reasonable certain or not, whether those options will be exercised or not, which impact the lease term in case of extension options and termination options and the period over which the lease assets are depreciated in case of purchase options.

4 Business Combinations

Acquisitions in 2020

RS Print

The Group executed a share purchase agreement dated November 9, 2020 and acquired the remaining 50% of the shares of RS Print Powered By Materialise (referred to as “RS Print”) for a total purchase consideration in cash of K€5,220. The debt of previous owner of K€655 related to the called unpaid capital is transferred to the Group. Before this transaction, the Group already had a 50% interest in RS Print. The fair value of the previously held equity method investment was valued at K€770. The corresponding gain is presented within net other operating income (Note 22.6).

In determining the fair value of the previously held equity method investment, a strategic discount, a minority discount and a discount for lack of marketability has been considered in relation to the consideration paid for this transaction.

Simultaneously with the share purchase agreement, RS Print and RS Scan International NV (“RS Scan”), the former co-shareholder of RS Print, entered into an asset purchase agreement regarding the acquisition by RS Print of certain assets of RS Scan with closing date on 9 November 2020 for a total purchase consideration in cash of K€3,000.

RS Print is a Belgian-based company that specializes in manufacturing of orthopaedic and medical insoles and the development and commercialization of hardware and software for foot pressure measurement.

The preliminary fair value of the identifiable assets and liabilities at the date of acquisition was assessed at:

in 000€	Carrying value at acquisition date	Fair value adjust-ments	Fair value at acquisi-tion date
Assets			
Developed technology	—	4,820	4,820
Customer relations	—	248	248
Other intangible assets	86	2,862	2,948
Property, plant & equipment	220	—	220
Right-of-use assets	24	—	24
Other non-current financial assets	64	—	64
Inventory	794	265	1,059
Trade receivables	1,096	—	1,096
Other current assets	1,001	—	1,001
Cash & cash equivalents	189	—	189
Total Assets	**3,474**	**8,195**	**11,669**
Liabilities			
Deferred tax liabilities	—	(2,049)	(2,049)
Loans & borrowings	(1,877)	—	(1,877)
Lease liabilities	(24)	—	(24)
Trade payables	(645)	—	(645)
Payroll related payables	(85)	—	(85)
Other liabilities	(262)	—	(262)
Total Liabilities	**(2,893)**	**(2,049)**	**(4,942)**
Total identified assets and liabilities	581	6,146	6,727
Goodwill	—	2,918	2,918
Acquisition price	—	—	9,645

The cash flow from the business combination is as follows:

Cash & cash equivalents acquired	(189)
Acquisition price in cash RS Print shares	5,220
Acquisition price in cash RS Scan assets	3,000
Total cash flow	**8,031**

The preliminary fair value of the identifiable assets and liabilities are included in our consolidated financial statements as per December 31, 2020. We have performed a preliminary fair value analysis of the business combination, with corresponding adjustments to the intangible assets and inventories. The items with the highest likelihood of changing upon the completion of the valuation process include developed technology, customer relationships, contracts and goodwill.. The accounting for the business combination resulted in fair values at date of acquisition of K€4,820 for developed technology based on the relief-from-royalty valuation method with royalty rates between 8.00% and 10.00% (remaining useful life of 7 years), K€248 for customer relationships based on the multi-period excess earnings method (remaining useful life of 15 years) and K€2,862 for contracts based on the multi-period excess earnings method (remaining useful life of 7 years). A fair value adjustment was identified of K€265 for the inventory. At the same time, a deferred tax liability was recognized of K€ (2,049) on these adjusted fair values. The discount rate (post-tax WACC) used for the valuation was set at 15.80%. The carrying value of the acquired receivables, the trade and other receivables approximate their fair value due to the short term character of these instruments.

There are no contingent considerations payable.

The goodwill recognized is primarily attributable to the trained and knowledgeable workforce and to the expected synergies that will be realized at level of development, manufacturing and existing customer base. The goodwill is not deductible for income tax purposes.

The total acquisition-related costs recognized as an expense in the general & administration costs are K€63.

The contribution of the acquired business to the revenue and net profit (loss) of the Group for the year ended December 31, 2020 were, respectively, K€664 and K€ (520). The pro forma revenue and the pro forma net profit of the acquired business would have been K€1,250 and K€ (1,332), respectively, if the business would have been acquired on January 1, 2020, nevertheless in that case no loss of share in the associate would have been presented of K€ (392). With this business combination, the Group acquired K€1,140 of trade receivables, of which K€44 is estimated not to be collectible.

Acquisitions in 2019

Engimplan

The Group executed a share purchase agreement dated August 6, 2019 and acquired 40% of the shares and voting interest of Engimplan Engenharia de Implante Indústria e Comércio Ltda (referred to as “Engimplan”) for a total purchase consideration in cash of K€6,647.

As part of this transaction, the Group increased its shareholding in Engimplan to 75% with a capital increase of K€5,750 in cash in Engimplan.

The Brazilian-based company is specialist in manufacturing of orthopaedic and cranio-maxillofacial (CMF) implants and instruments. Engimplan will be part of the Medical segment.

The fair value of the identifiable assets and liabilities at the date of acquisition were:

in 000€	Carrying value at acquisition date	Fair value adjust-ments	Fair value at acquisi-tion date
Assets			
Software	214	—	214
Customer relations	—	2,530	2,530
Trademarks	—	556	556
Other intangible assets	9	—	9
Property, plant & equipment	2,268	838	3,106
Right-of-use assets	633	—	633
Other non-current financial assets	3	—	3
Inventory	2,084	96	2,180
Trade receivables	1,802	—	1,802
Other current assets	391	—	391
Cash from capital increase	5,750	—	5,750
Cash & cash equivalents	316	—	316
Total Assets	**13,470**	**4,020**	**17,490**
Liabilities			
Deferred income	(83)	—	(83)
Loans & borrowings	(1,443)	—	(1,443)
Lease liabilities	(633)	—	(633)
Trade payables	(271)	—	(271)
Tax payables	(100)	—	(100)
Payroll related payables	(298)	—	(298)
Other liabilities	(914)	—	(914)
Total Liabilities	**(3,742)**	**—**	**(3,742)**

Total identified assets and liabilities	**9,728**	**4,020**	**13,748**
Goodwill	—	—	2,071
Non-controlling interest	—	—	(3,422)
Acquisition price	—	—	**12,397**

The cash flow from the business combination is as follows:

Cash & cash equivalents acquired	(316)
Cash from capital increase	(5,750)
Acquisition price in cash	12,397
Total cash flow	**6,331**

The fair value of the identifiable assets and liabilities included in our consolidated financial statements per December 31, 2019 were provisional as the final valuation had not been completed by the date these consolidated financial statements were approved for issue by the board of directors. As of July 16th, 2020, we completed the fair value analysis of the Engimplan business combination, which resulted in corresponding adjustments to the goodwill, property, plant and equipment,. The fair value of the identified assets and liabilities were K€736 higher than the provisional value at date of acquisition, with a corresponding reduction in goodwill of K€567 and increase of non-controlling interest of K€169. We refer to Note 2 for the detailed impact of the restatement resulting from the final accounting of the Engimplan business combination.

The accounting for the business combination resulted in fair values at date of acquisition of K€2,530 for customer relationships, K€556 for trademarks; to property, plant and equipment a final fair value of K€3,106 was attributed. A fair value adjustment was identified of K€96 for the inventory. The carrying value of the acquired receivables, the trade and other receivables approximate their fair value due to the short term character of these instruments

There are no contingent considerations payable.

The goodwill recognized is primarily attributable to the trained and knowledgeable workforce and to the expected synergies that will be realized at level of manufacturing and existing customer base. The goodwill is not deductible for income tax purposes.

Acquisitions in 2018

The Group did not complete any Business Combinations during the year 2018.

5 Goodwill

The goodwill has been allocated to the cash generating units ("CGU") as follows:

in 000€	As of December 31, 2020	2019*	2018
CGU: MAT Software	3,241	3,241	3,241
CGU: e-Prototypy	749	800	794
CGU: ACTech	8,812	8,812	8,812
CGU: OrthoView	4,445	4,683	4,467
CGU: MAT NV Manufacturing (Metal)	177	177	177
CGU: Engimplan	—	1,894	—
CGU: RS Print	2,918	—	—
Total	**20,342**	**19,607**	**17,491**

* The year 2019 has been restated to reflect the final accounting of the business combination with Engimplan. See additional information in Notes 2 and 4.

The changes in the carrying value of the goodwill can be presented as follows for the years 2020, 2019 and 2018:

in 000€	Gross	Impair-ment	Total
At January 1, 2018	**17,656**	**(104)**	**17,552**
Additions	—	—	—
Impairment	—	—	—
Currency translation	(61)	—	(61)
At December 31, 2018	**17,595**	**(104)**	**17,491**
Additions	1,864	—	1,864
Currency translation	252	—	252
At December 31, 2019*	**19,711**	**(104)**	**19,607**
Additions	2,918	—	2,918
Impairment	—	(1,367)	(1,367)
Currency translation	(816)	—	(816)
At December 31, 2020	**21,813**	**(1,471)**	**20,342**

The goodwill of Orthoview (UK), e-Prototypy (PL) and Engimplan (BR) include respectively K€ (238), K€ (51) and K€ (527) impact of currency translation in 2020.

The Group has performed an impairment test for all CGUs except RS Print, estimating the Value-in-Use based on a discounted cash flow model with cash flows for the next five years derived from the budget and a residual value considering a perpetual growth rate. Given the recent acquisition of RS Print prior to year-end 31 December 2020, the acquisition price was considered to be representative for the fair value of the CGU RS Print. The MAT NV SAM BE and Cenat are included in the reportable segment "Materialise Software". The CGUs ACTech, e-Prototypy (PL), MAT NV Manufacturing (Metal) and RS Print are included in the reportable segment "Materialise Manufacturing". The CGU Orthoview (UK) and Engimplan (BR) are included in the reportable segment "Materialise Medical".

CGU: MAT Software

The goodwill allocated to the CGU MAT software relates to the goodwill from the acquisition of CENAT in 2015 and the goodwill related to the acquisition of Marcam in 2011 (DE-3D Printing Software).

The impairment test is based on the projected discounted cash flows resulting from the CGU MAT Software, considering a period of five years. The main assumptions for goodwill impairment testing include a discount rate (based on WACC) of 9.86% (11.97% pre-tax) and a perpetual growth rate of 5.00%. Other assumptions include the year-on-year growth rate of the revenue, gross margin and the operating costs which has been determined by management based on past experience. It was concluded that the value in use is higher than the carrying value of the cash generating unit of K€33,625 There are no reasonably possible changes in assumptions that would reduce the value in use below its carrying value of the cash generating unit.

CGU e-Prototypy

The goodwill relates to the acquisition of the Polish entity e-Prototypy . The impairment test on the CGU e-Prototypy is based on the projected discounted cash flows considering a period of five years. The main assumptions include a discount rate (based on WACC) of 11.45% (14.96% pre-tax) and a perpetual growth rate of 2.0%. Other assumptions include the year-on-year growth rate of the revenue, gross margin and the operating costs which has been determined by management based on past experience and continued investments in capex in new 3D printing equipment. It was concluded that the value in use is significantly higher than the carrying value of the cash generating unit K€5,231. Based on the sensitivity analysis where discount rate would increase with 1.0%, the value in use would still be significantly higher than the carrying value of the cash generating units.

CGU Orthoview

The goodwill relates to the acquisition of Orthoview. The impairment test on the CGU Orthoview is based on the projected discounted cash flows considering a period of 5 years.The main assumptions include a discount rate (based on WACC) of 10.25% (13.81% pre-tax) and a perpetual growth rate of 1.00%. Other assumptions include the year-on-year growth rate of the revenue, gross margin and the operating costs which have been determined by management based on past experience. It was concluded that the value in use is higher than the carrying value of the cash generating unit of K€9,672. Based on the sensitivity analysis where discount rate would increase with 1%, the value in use would still be higher than the carrying value of the cash generating unit. No perpetual growth would still result in a value in use that is higher than the carrying value of the cash generating unit.

The Orthoview business is being integrated further in the existing software business within our Materialise Medical segment. Synergies that are expected from joined product lines are not taken into account in the current impairment review as management believes that Orthoview can still be considered a separate cash generating unit in 2020.

CGU ACTECH

The impairment test on the CGU ACTech is based on the projected discounted cash flows, considering a period of 5 years. The main assumptions include a discount rate (based on WACC) of 8.20% (11.46% pre-tax) and a perpetual growth rate of 1.0%. Other assumptions include the year-on-year growth rate of the revenue, gross margin and the operating costs which have been determined by management based on past experience. It was concluded that the value in use is higher than the carrying value of the cash generating unit of K€24,656. Based on the sensitivity analysis where discount rate would increase with 1.0% or other reasonably possible changes in the 5-year projected cash flows (such as lower EBITDA) and perpetual growth rate, the value in use would be € 2.1 million lower than the carrying value of the cash generating unit.

CGU ENGIMPLAN

The impairment test on the CGU Engimplan is based on the projected discounted cash flows, considering a period of 5 years. The main assumptions include a discount rate (based on WACC) of 17.22% (23.43% pre-tax) and a perpetual growth rate of 7.0%, supported by an expected long term inflation rate of 3.50%, continued growth opportunities from the increase of the standard of living in Brazil (including access to medical and health care insurances), a growing population in Brazil and export opportunities in Latin America. Other assumptions include the year-on-year growth rate of the revenue, gross margin and the operating costs which have been determined by local & new management based on past experience. It was concluded that the value in use is lower than the carrying value of the cash generating unit of K€9,292 which has resulted in a full impairment of the goodwill for an amount of K€ (1,367) as well as a partial impairment on intangible assets customer lists and trade marks for respectively K€ (942) and K€ (207) as shown in Note 6. The full impairment charge was recognized in the Consolidated income statement under Net other operating income and are included in the reportable segment 'Materialise Medical'.

The key events that led to the impairment loss for the CGU Engimplan were

- A loss of business resulting from the Covid 19 pandemic and a slower recovery from this than expected;
- Delay and less advantages of synergies than initially foreseen.

A sensitivity analysis was performed to assess the impact of changes in the key assumptions used on the current estimated value-in-use and can be summarized as follows:

Sensitivity analysis Engimplan impairment	As of December 31,2020		
Relevant assumption	**Change applied**	**Evolution of the value-in-use**	**in 000€**
WACC	1%		630
WACC	-1%		(510)
Perpetual Growth	3.5%		1,340

Perpetual Growth	-3.5%	(655)
Revenue & gross profit growth	5%	1,960
Revenue & gross profit growth	-5%	(1,960)

CGU RS Print

Given the recent acquisition of RS Print prior to year-end 31 December 2020, the acquisition price was considered to be representative for the fair value of the CGU RS Print. As such, the Group considers that no indications existed at 31 December 2020 that the carrying value of the CGU exceeded its fair value.

Table of Contents

6 Intangible assets

The changes in the carrying value of the intangible assets can be presented as follows for the years 2020, 2019 and 2018:

in 000€	Patents and licenses	Software	Acquired customers, technology	Developed technology and software under construction	Total
Acquisition value					
At January 1, 2018	**4,497**	**7,638**	**25,595**	**—**	**37,730**
Additions	554	807	32	951	2,344
Acquisition of a subsidiary	—	—	—	—	—
Disposals	(759)	(221)	—	—	(980)
Transfer between accounts	2	—	—	364	366
Currency translation	—	—	(48)	—	(48)
Other	—	17	—	—	17
At December 31, 2018	**4,294**	**8,241**	**25,579**	**1,315**	**39,429**
Additions	209	656	—	1,328	2,193
Acquisition of a subsidiary	38	214	3,048	9	3,309
Disposals	—	(45)	(32)	—	(77)
Transfer between accounts	(109)	1,601	—	(988)	504
Currency translation	1	(10)	86	20	97
Other	3	10	—	(32)	(19)
At December 31, 2019	**4,436**	**10,667**	**28,681**	**1,652**	**45,436**
Additions	378	3,072	—	3,168	6,618
Acquisition of a subsidiary	—	—	7,931	86	8,017
Disposals	(226)	(2,227)	—	(68)	(2,521)
Transfer between accounts	75	47	—	(180)	(58)
Currency translation	(1)	(65)	(1,128)	—	(1,194)
Other	—	—	—	—	—
At December 31, 2020	**4,662**	**11,494**	**35,484**	**4,658**	**56,298**

in 000€	Patents and licenses	Software	Acquired customers, technology and backlogs	Developed technology and software under construction	Total
Amortization & Impairments					
At January 1, 2018	**(2,766)**	**(2,985)**	**(3,379)**	**—**	**(9,130)**
Amortization charge for the year	(749)	(2,310)	(2,005)	—	(5,064)
Disposals	854	206	—	—	1,060
Transfer between accounts	—	—	—	—	—
Currency translation	—	1	22	—	23
Other	—	8	—	—	8
At December 31, 2018	**(2,661)**	**(5,080)**	**(5,362)**	**—**	**(13,103)**
Amortization charge for the year	(246)	(2,582)	(2,031)	—	(4,859)
Disposals	—	23	—	—	23
Transfer between accounts	109	(96)	—	—	13
Currency translation	—	(25)	(126)	—	(151)
Other	—	20	16	—	36
At December 31, 2019	**(2,798)**	**(7,740)**	**(7,503)**	**—**	**(18,041)**
Amortization charge for the year	(465)	(2,223)	(2,021)	—	(4,709)
Impairments	—	—	(1,149)	(2,090)	(3,239)
Disposals	211	2,119	—	(22)	2,308
Transfer between accounts	—	109	—	—	109
Currency translation	1	14	240	—	255
Other	—	—	—	—	—
At December 31, 2020	**(3,051)**	**(7,721)**	**(10,433)**	**(2,112)**	**(23,317)**
Net carrying value					
At December 31, 2020	1,611	3,773	25,051	2,546	32,981
At December 31, 2019	1,638	2,927	21,178	1,652	27,395
At December 31, 2018	1,633	3,161	20,217	1,315	26,326
At January 1, 2018	1,731	4,653	22,216	—	28,600

Patent and licenses include only the directly attributable external costs incurred in registering the patent and obtaining the license. Software relates to purchased software for internal use only except for software development on certain application interfaces that were almost fully funded by a third party. The remaining amortization period is 1.8 years for the main software purchases and 6.4 years for the main patents and licenses.

The ‘Acquired customers and technology’ have been recognized as part of the acquisition of RS Print, Engimplan, ACTech, E-Prototypy, OrthoView, and Cenat (see Note 4). At December 31, 2020, the remaining amortization period for the acquired customers is 14.67 years for RS Print, 8.58 years for Engimplan, 16.75 years for ACTech, 3.75 years for OrthoView, fully amortized for E-Prototypy and 4.25 years for Cenat (2019:9.58 for Engimplan, 17.75 for ACTech, 4.75 years for OrthoView and 5.25 years for Cenat). At December 31, 2020, the remaining amortization period for the acquired technology and contracts is 6.67 years for RS Print.

The net book value of developed technology and software under construction at 31 December 2020 relates primarily to the internal digitalization program. At 31 December 2020, there were no other significant capitalized costs in respect of development activities, following the impairment in the fourth quarter of the year of previously capitalized costs in respect of the Tracheal Splint project. See also Note 3: significant accounting judgments, estimates and assumptions.

The total amortization charge for 2020 is K€4,709 (2019: K€4,859; 2018: K€5,064). As from 2017 the amortization of intangible assets from business combinations is mainly included in the line net operating income of the consolidated income statement.

Table of Contents

7 Property, plant & equipment

The changes in the carrying value of the property, plant & equipment can be presented as follows for the year 2020 and 2019:

in 000€	Land and buildings	Plant and equipment	Right-of-use assets	Construction in progress	Total
Acquisition value					
At January 1, 2019	**45,777**	**77,557**	**14,327**	**3,002**	**140,663**
Impact of adoption of IFRS 16	—	—	4,984	—	4,984
Additions	302	7,363	3,429	5,807	16,901
Acquired from business combinations*	61	3,046	633	17	3,757
Disposals	(37)	(6,091)	(753)	—	(6,881)
Transfers	(3,360)	7,077	117	(4,338)	(504)
Currency Translation	150	199	8	6	363
Other**	—	(73)	(1,099)	(80)	(1,252)
At December 31, 2019*	**42,893**	**89,078**	**21,646**	**4,414**	**158,031**
Additions	256	2,600	4,567	8,175	15,598
Acquired from business combinations	—	220	24	—	244
Disposals	—	(2,953)	(1,657)	(38)	(4,648)
Transfers	(15)	7,961	(4,010)	(3,886)	50
Currency Translation	(717)	(2,486)	(423)	(26)	(3,652)
At December 31, 2020	**42,417**	**94,420**	**20,147**	**8,639**	**165,623**
Depreciation					
At January 1, 2019	**(6,071)**	**(33,307)**	**(8,441)**	**(307)**	**(48,126)**
Depreciation charge for the year *	(1,199)	(9,162)	(4,058)	—	(14,419)
Disposals	36	5,704	359	—	6,099
Transfers	200	(1,551)	1,031	307	(13)
Currency Translation	(25)	(190)	(2)	—	(217)
Other	220	(34)	51	—	237
At December 31, 2019*	**(6,839)**	**(38,540)**	**(11,060)**	**—**	**(56,439)**
Depreciation charge for the year	(1,223)	(10,205)	(3,504)	—	(14,932)
Disposals	—	2,632	1,518	—	4,150
Impairment	—	—	—	—	—
Transfers	(11)	(3,961)	3,810	—	(162)
Currency Translation	66	872	85	—	1,023
At December 31, 2020	**(8,007)**	**(49,202)**	**(9,151)**	**—**	**(66,360)**
Net book value					
At December 31, 2020	34,410	45,218	10,996	8,639	99,263
At December 31, 2019*	36,054	50,538	10,586	4,414	101,592
At January 1, 2019	39,706	44,250	5,886	2,695	92,537

* The year 2019 has been restated to reflect the final accounting of the business combination with Engimplan. See additional information in Notes 2 and 4.

** “Other” includes modification of Right-of-use assets for an amount of K€ (554).

The changes in the carrying value of the property, plant and equipment can be presented as follows for the year 2018:

in 000€	Land and buildings	Plant and equipment	Finance leases	Construction in progress	Total
Acquisition value					
At January 1, 2018	**40,184**	**67,117**	**14,303**	**3,754**	**125,358**
Additions	3,079	9,476	792	5,210	18,557
Acquired from business combinations	—	—	—	—	—
Disposals	(99)	(1,882)	(17)	(387)	(2,385)
Transfers	2,728	2,953	(732)	(5,547)	(598)
Currency Translation	(119)	(25)	(19)	(26)	(189)
Other	4	(82)	—	(2)	(80)
At December 31, 2018	**45,777**	**77,557**	**14,327**	**3,002**	**140,663**
Depreciation					
At January 1, 2018	**(4,504)**	**(27,166)**	**(6,623)**	**—**	**(38,293)**
Depreciation charge for the year	(1,560)	(8,010)	(2,346)	(307)	(12,223)
Disposals	26	2,102	6	—	2,134
Transfers	(18)	(253)	514	—	243
Currency Translation	(15)	(53)	8	—	(60)
Other	—	73	—	—	73
At December 31, 2018	**(6,071)**	**(33,307)**	**(8,441)**	**(307)**	**(48,126)**
Net book value					
At December 31, 2018	39,706	44,250	5,886	2,695	92,537
At January 1, 2018	35,680	39,951	7,680	3,754	87,065

The investments in property, plant & equipment and right-of-use assets in 2020 amounted to K€15,598 (2019: K€16,901; 2018: K€18,557). They are mainly related to new machines and installations (K€5,011), land and buildings (K€7,580), IT equipment (K€1,056) and leased vehicles (K€1,714). The investments in 2019 related to new machines and installations (K€7,757), land and buildings (K€4,865), IT equipment (K€1,268) and lease vehicles (K€1,119). The investments in 2018 related to new machines and installations in Belgium and Germany (K€10,747), land and buildings in Germany (K€2,491), IT equipment (K€1,781) and lease vehicles (K€792).

The Group realized a net loss on disposal of property, plant and equipment of K€10 in 2020 (2019: a net loss of K€165; 2018: a net loss of K€83).

No impairment of property, plant and equipment was recorded.

The transfers in 2020 within property, plant and equipment are mainly related to

- the transfers from assets under construction towards plant and equipment of K€3,886, mainly related to the “Green Machine” project;
- the transfer from Right-of-Use of assets to Plant and Equipment due to the obtaining of the ownership for a net book value of K€200;

Assets under construction

Per end of 2020 the main assets under construction are related to our “Green Machine” project for an amount of K€1,998 located in Belgium and buildings located in Germany for an amount of K€6,302.

Changes in useful life for certain assets in 2019

The Group reviews the useful life for the intangible assets and property, plant and equipment on an annual basis considering the current facts and circumstances available. This review resulted in 2019 in a re-assessment of the useful life for certain specific assets in the categories buildings, fixtures, vehicles and machinery. The impact of the change in useful life during the year 2019 resulted in a decrease of the depreciation charges by K€1,147. In 2020 and 2021 the depreciation charge will be less for respectively K€478 and K€276. The effect will be neutralized in 2028 for machines, in 2033 for fixtures and in 2048 for buildings.

The right of use assets can be presented as follows:

The carrying value of Right-of-Use assets at December 31, 2020 was K€10,996 (2019: K€10,586; 2018: K€5,886). Right-of-Use assets are mainly related to 3D printing machines with a carrying value of K€1,480 at December 31, 2020 (2019: K€3,048; 2018: K€4,608) and for which depreciation of K€528 was recorded in 2020 (2019:K€1,045; 2018:K€1,745). New leases in 2020 amount to K€4,567 of which K€1,714 relate to leased motor vehicles (2019:K€1,119; 2018:K€792).

in 000€	Buildings	Vehicles	Equipment	Total
Acquisition value				
At January 1, 2020	6,488	4,275	10,883	21,646
Additions	2,397	1,738	433	4,568
Acquired from business combinations	—	—	24	24
Modifications	—	—	—	—
Disposals	(1,214)	(291)	(152)	(1,657)
Currency Translation	(372)	(10)	(41)	(423)
Transfers	275	(1,157)	(3,129)	(4,011)
Other	—	—	—	—
At December 31, 2020	**7,574**	**4,555**	**8,018**	**20,147**
Depreciation				
At January 1, 2020	**(2,705)**	**(2,030)**	**(6,325)**	**(11,060)**
Depreciation charge for the year	(1,620)	(1,129)	(755)	(3,504)
Acquired from business combinations	—	—	—	—
Modifications	—	—	—	—
Disposals	1,175	272	71	1,518
Currency Translation	47	4	33	84
Transfers	446	992	2,373	3,811
Other	—	—	—	—
At December 31, 2020	**(2,657)**	**(1,891)**	**(4,603)**	**(9,151)**
Net book value				
At December 31, 2020	4,917	2,664	3,415	10,996
At January 1, 2020	3,783	2,245	4,558	10,586

The following amounts related to leases are recognized in profit & loss

(in 000€)	2020
Depreciation expense	(3,504)
Interest expense on lease liabilities	(142)
Expenses related to short-term leases/ low-value assets/ variable lease payments	(554)

The Group has negotiated several contracts with extension and termination options because of common practice in the country or for the asset. Management has exercised significant judgments in determining whether these extension and termination options are reasonably certain to be exercised. The potential future cash flows beyond the period following the exercise of the extension and termination option that are not included in the lease term are presented in the following table:

(in 000€)	2020
Potential (non-discounted) cash flows for terminations options that are not reasonably certain to be exercised:	8
Potential (non-discounted) cash flows for extensions options that are reasonably certain to be exercised	1,293

Pledges

Land and buildings (including buildings under construction) with a carrying amount of K€25,364 (2019: K€26,270; 2018: K€27,319) are subject to pledges to secure several of the Group's bank loans. In addition, pledges have been given on machines with a total carrying amount of K€2,274 (2019: K€2,884; 2018: K€3,533) (Note 24).

8 Investments in joint ventures

The Group has no investments in joint ventures anymore per December 31, 2020.

The Group executed a share purchase agreement dated November 9, 2020 and acquired the remaining 50% of the shares of RS Print Powered By Materialise (referred to as “RS Print”). Before this transaction, Materialise NV had a 50% interest in RS Print. The fair value of the previously held equity method investment was remeasured to fair value at the date of the aforementioned step acquisition, at K€770.

The summarized financial information of RS Print NV of years 2019 and 2018 can be presented as follows:

in 000€	2020	2019	2018
Joint venture's statement of financial position			
Current assets	—	1,546	850
Non-current assets	—	93	114
Goodwill	—	—	—
Current liabilities	—	(1,114)	(756)
Non-current liabilities	—	(448)	(1,096)
Shareholders' deficit (surplus)	—	(77)	888
The joint venture income (loss)			
Revenue	—	1,736	1,186
Profit (loss)	—	(785)	(876)

The Group’s share in the loss of the joint venture for 2020 up to the full acquisition as of November 9, 2020 amounted to K€ (39).

The movement of the carrying value of the joint venture is as follows:

in 000€	
Carrying value as of December 31, 2017	**31**
Additional investment	—
Transfer from receivables	444
Share in loss	(475)
Carrying value as of December 31, 2018	**—**
Additional investment	875
Transfer from receivables	(444)
Share in loss	(392)
Carrying value as of December 31, 2019	**39**
Additional investment	—
Transfer to receivables	—
Share in loss of the Joint venture	(39)
Gain from remeasurement previously held equity method investment at fair value	770
Accounted for as Business Combination	(770)
Carrying value as of December 31, 2020	**—**

9 Inventories and contracts in progress

Inventories and contracts in progress include the following:

in 000€	As of December 31, 2020	2019	2018
Raw materials	4,974	7,400	5,616
Work in progress	1,766	2,806	2,151
Finished goods	2,554	1,995	1,390
Contracts in progress	749	495	829
Total inventories and contracts in progress	**10,043**	**12,696**	**9,986**

The amount of the inventory written-off as an expense is K€567 (2019: K€526; 2018: K€229). The expenses are booked in Cost of Sales.

The Group has contracts in progress and advances from customers. The total costs incurred is K€490 and the profit recognized is K€259 as per December 31, 2020. Advances were received for the amount of K€146 with respect to contracts in progress per end of 2020 (2019: K€22; 2018: K€370).

10 Other assets

Other non-current assets

Other non-current assets include the following:

Investments in convertible loans in 000€	As of December 31, 2020	2019	2018
Convertible loan	6,203	2,750	—
Total non-current assets	**6,203**	**2,750**	**—**

The Group has granted a convertible loan to Fluidda in January 2019, with a notional amount of K€2,500. The convertible loan is accounted for as a financial asset measured at fair value with changes in fair value through the income statement. The carrying value of the convertible loan amounts to K€3,310 at 31 December 2020. The convertible loan has a duration of 7 years with a 10.0% annual interest rate which is capitalized. We refer to Note 3 and Note 20.

The convertible loan granted to Ditto in August 2020 has a notional amount up to K$9,000 that will be periodically called-up when certain milestones are reached or otherwise decided. The carrying value of the amount called up as at December 31, 2020 amounts to K€2,892. No fair value adjustment has been recorded as at 31 December 2020, as the fair value equals its carrying amount. We refer to Note 3 and Note 20. The applicable interest rate is 8.0% per annum.

Investments in non-listed equity instruments in 000€	As of December 31, 2020	2019	2018
Non-listed equity investments	3,842	3,046	2,701
Total non-current assets	**3,842**	**3,046**	**2,701**

The non-listed equity investments mainly consist of the investment of K$3,300 in shares of the non-listed company Essentium Inc in 2018 and 2019. The Group holds a non-controlling interest of 5% in this company. The investment in Essentium Inc. is initially recognized at cost and subsequently measured at fair value through OCI. The Group has estimated that the fair value at December 31, 2020 amounts to K€3,535 and consequently, has recognized a fair value adjustment in OCI of K€489. We refer to Note 3 and Note 20.

In addition, the convertible loan granted to AM Flow Holding BV (formerly Borges 3D BV) in January 2020, with a notional amount of K€300, was converted in shares of AM Danube BV (41.70% shares held by Materialise NV) in September 2020 at a fair value of K€307. As such, the Group holds an indirect stake of 8.42% in AM Flow BV (100% owned by AM Flow Holding BV) indirectly through AM Danube BV (41.70% stake held by Materialise NV) and AM Flow Holding BV (20.20% stake held by AM Danube BV). We also refer to Note 3 and Note 20.

Other non-current assets in 000€	As of December 31, 2020	2019	2018
Tax credits	3,381	3,015	3,006
Guarantees and deposits	528	415	405
Non-current receivable on joint venture	—	138	1,096

Other	184	27	29
Total non-current assets	**4,093**	**3,595**	**4,536**

The non-current tax credits relate to tax credits that are not expected to be realized within one year..

Other current assets

Other current assets include the following:

	As of December 31,		
in 000€	2020	2019	2018
Deferred charges	2,841	2,632	2,046
Tax credits	1,243	695	185
Accrued income	260	486	958
Other tax receivables	1,125	3,127	2,286
Grants	1,181	754	687
Other non-trade receivables	1,640	922	774
Total other current assets	**8,290**	**8,616**	**6,936**

The other tax receivables include Value Added Tax (VAT) receivables and corporate tax receivables. The non-trade receivables as at December 31, 2020 include an indemnification asset, related to the AcTech acquisition in 2017, for the amount of K€222.

Table of Contents

11 Trade receivables

The trade receivables include the following:

in 000€	As of December 31, 2020	2019	2018
Trade receivables	32,346	42,509	38,764
Allowance for doubtful accounts	(1,475)	(1,532)	(1,873)
Total	**30,871**	**40,977**	**36,891**

Trade receivables are non-interest bearing and are generally on payment terms of 30 to 90 days.

As at December 31, 2020, trade receivables of an initial value of K€1,475 (2019: K€1,532; 2018: K€1,873) were impaired as part of the expected credit losses analysis. Impairment is accounted for under the other operating expenses. See below for changes in the impairment of receivables.

in 000€	
At January 1, 2018	**(990)**
Addition	(1,284)
Usage	182
Reversal	219
At December 31, 2018	**(1,873)**
At January 1, 2019	**(1,873)**
Addition	(141)
Usage	131
Reversal	351
At December 31, 2019	**(1,532)**
Addition	(852)
Usage	301
Reversal	608
At December 31, 2020	**(1,475)**

12 Cash and cash equivalents

Cash and cash equivalents include the following:

in 000€	As of December 31, 2020	2019	2018
Cash at bank	108,399	123,337	105,846
Cash equivalents	3,139	5,560	9,660
Total	**111,538**	**128,897**	**115,506**

Cash at banks earns interest at floating rates based on daily bank deposit rates. Cash equivalents include short-term deposits which are made for varying periods between one day and three months, depending on the immediate cash requirements of the Group, and earn interest at the respective short-term deposit rates.

In connection with the exercise of warrants payments have been received in 2018 from employees for a total amount of K€209, not converted into shares before year-end. In line with regulations the amount of K€209 was posted on a restricted bank account per December 31, 2018. There were no restrictions on cash at December 31, 2020 or 2019.

13 Equity

Share capital

The share capital of the parent company Materialise NV consists of 54,169,257 ordinary nominative shares at December 31, 2020 (2019:53,172,513; 2018:52,890,761) with no nominal but par value of €0.076 in 2020 (2019:€0.058; 2018: €0.058) for a total amount of K€4,096 at December 31, 2020 (2019:K€3,066; 2018:K€3,050).

in 000€, except share data	Total number of ordinary shares	Total share-holders' capital	Total share-premium
Outstanding at January 1, 2018	**47,325,438**	**2,729**	**79,839**
Capital increase in cash—public offering	5,403,125	312	59,575
Expenses directly attributable to public offering	—	—	(4,003)
Capital increase via exercise of warrants	162,198	9	593
Equity settled share-based payments expense	—	—	633
Outstanding at January 1, 2019	**52,890,761**	**3,050**	**136,637**
Capital increase via exercise of warrants	281,752	16	1,252
Equity settled share-based payments expense	—	—	201
Outstanding at January 1, 2020	**53,172,513**	**3,066**	**138,090**
Capital increase via exercise of warrants	487,840	30	3,082
Capital increase via exercise of convertible bonds	508,904	1,000	—
Equity settled share-based payments expense	—	—	103
Merger with Ailanthus NV	13,428,688	1,862	—
Cancellation treasury shares (Ailanthus NV)	(13,428,688)	(1,862)	—
Outstanding on December 31, 2020	**54,169,257**	**4,096**	**141,275**

The shareholders' capital increased by K€30in 2020 as a result of the exercise of warrants outstanding and fully vested. The number of new shares issued was 487,840 at an average price of €6.4 per share, including share premium.

The shareholders' capital increased by K€1,000 in 2020 as a result of the exercise of convertible bonds. The number of new shares issued was 508,904 at an average price of €1.97 per share, including share premium.

On December 31, 2020, the Group has acquired 13,428,688 treasury shares via the merger with the company Ailanthus NV. Ailanthus NV held those shares in the Group. Immediately subsequent the merger, the Group has cancelled all the treasury shares with a corresponding credit to share capital. As part of the merger transaction, the Group issued an equal number of shares to the former shareholders of Ailanthus NV.

Share premium

In Belgium, the portion of the capital increase in excess of par value is typically allocated to share premium.

The carrying value of the share premium is K€141,275 at December 31, 2020 (2019: K€138,090; 2018: K€136,637). The change in 2020 is the result of:

- The capital increase via exercise of warrants of K€3,082; and
- the share-based payment expense of K€103.

The change in 2019 is the result of the share-based payment K€201 and the capital increase via exercise of warrants of K€1,252. The change in 2018 is the result of the share-based payment expense of K€633, the capital increase via exercise of warrants of K€593 and the capital increase in cash-public offering and private placement of K€59,575 minus K€4,003 expenses directly attributable to public offering and private placement.

Other reserves

The nature and purpose of the other reserves is as follows:

in 000€	As of December 31, 2020	2019*	2018
Legal reserve	279	279	279
Other reserves	2,574	(335)	(335)
Equity-settled-based payment expense	72	72	65
Other Comprehensive Income (loss)	(7,796)	(1,394)	(1,850)
Other reserves	**(4,871)**	**(1,378)**	**(1,841)**

Based on the statutory result and after final result allocation approved by the annual shareholders meeting the legal reserve is increased by reserving 5% of the yearly statutory profit until the legal reserve reaches at least 10% of the shareholders' capital. The legal reserve cannot be distributed to the shareholders.

The Group did not pay any dividend during 2020, 2019 and 2018.

Other comprehensive loss

Other comprehensive loss consists of the following:

in '000€	Currency Translation Differences & Other	Fair value adjustment equity investments	Total OCI attributable to the shareholder
At January 1, 2018	**(1,803)**	**—**	**(1,803)**
Currency translation impact	(47)	—	(47)
At December 31, 2018	**(1,850)**	**—**	**(1,850)**
Currency translation impact	456	—	456
At December 31, 2019	**(1,394)**	**—**	**(1,394)**
Currency translation impact	(6,025)	—	(6,025)
Fair value adjustment	—	489	489
Acquisition non-controlling interest—OCI	(866)	—	(866)
At December 31, 2020	**(8,285)**	**489**	**(7,796)**

Non-controlling interest

In 2018 there were no non-controlling interests. In 2019, a non-controlling interest has been recognized for 25% held by third party in Engimplan for an amount of K€3,107 (changed to K€ 3,276*) per end of 2019.

As of December 1, 2020, the Group acquired the remaining 25% non-controlling interest held by a third party in Engimplan in return for the Spine Business. The non-controlling interest with a carrying amount of K€2,213 was derecognized. The gain on the transaction of K€ 1,279 was recognized within other reserves within equity.

No non-controlling interest is recognized for the 17% held by a third party in RapidFit+ as the amount is presented as a financial liability.

RapidFit+

The Group has purchased a call option and written a put-option on the non-controlling interest in Rapidfit+. The call option was accounted for in accordance with IFRS 9 and has an exercise price which is calculated according to a specified contractual formula based on the following parameters: invested capital, multiple of EBITDA minus net financial debt. Based on our analysis the call option remained out of the money at 31 December 2018 and 31 December 2019, and has expired at 31 December 2020. The call option was exercisable between June 30, 2015 and June 27, 2020.

The written put option has been recognized as a financial liability and measured at the fair value of the redemption amount and amounts to K€875 at December 31, 2020 (2019: K€875; 2018 K€845). The undiscounted estimated redemption amount totals K€875 at December 31, 2020 (2019: K€875; 2018: K€875). The redemption price has an exercise price according to a specified contractual formula based on the following parameters: invested capital, multiple of EBITDA minus net financial debt. The initial recognition resulted in a reclassification of K€264 from non-controlling interest and K€64 from consolidated reserves. The written put option is exercisable between June 27, 2019 and June 27, 2021 and it is management's estimate that the put option will be exercised within 12 months. As such, the written put option is presented as an other current liability.

Table of Contents

In addition, RapidFit+ has issued K€10 dilution warrants to the non-controlling interest which are exercisable upon occurrence of certain specified events. The fair value of the dilution warrants is K€0 per end of 2020 (2019: K€0; 2018:K€0).

14 Share-based payment plans

Share-based payment plans of the parent

The changes of the year for the warrant plans are as follows:

	2020	2019	2018
Outstanding at January 1*	**965,052**	**1,318,049**	**1,458,360**
Granted	—	—	2,000
Forfeited / Cancelled	(41,443)	(42,952)	(69,104)
Exercised	(515,887)	(310,045)	(73,207)
Outstanding at December 31*	**407,722**	**965,052**	**1,318,049**
Exercisable at December 31	**123,305**	**296,859**	**252,793**

* The Group's share-based payment plans are all equity-settled except for the IPO warrants that have been granted to certain employees in certain countries due to legal requirements which are cash-settled. The outstanding amount includes stock appreciation rights ("SARs") issued under cash-settled share-based payment plans.

The number of outstanding warrants has been adjusted to reflect the 1-to-4 stock split decided in June 2014. The 2013 warrant plan gives a right to four shares for each warrant, whereas under all other warrant plans one warrant gives a right to one share. For presentation purposes the tables reflect the number of shares the warrants give right to across all plans.

Equity-settled share-based payment plans

The Group has several plans in place (2013 warrant plan, IPO warrant plan and 2015 warrant plan) which have similar terms except for the exercise price, except for the 2015 warrant plan.

2013 warrant plan

Each warrant gives the right to the holder to four ordinary shares of the parent Company. The warrants have a contractual term of ten years and vest for 25% in the fourth year; 25% in the fifth year; 25% in the sixth year; and 25% in the seventh year. Warrants are exercisable as from the month after they have vested and in the subsequent exercise periods. There are no cash settlement alternatives and the Group does not have a practice of cash settlement for these warrants. The warrants have a contractual term of ten years.

Under the 2013 warrant plan 301,096 warrants were effectively granted in October 2013 and 166,800 warrants were granted to certain employees and to certain members of our board of directors and senior management on November 28, 2013 with an exercise price ranging from €7.86 to €8.54.

The status of the 2013 warrant plan at December 31 is as follows:

	2020	2019	2018
Outstanding at January 1	**118,376**	**300,040**	**320,640**
Granted	—	—	—
Forfeited / Cancelled	(1,875)	(3,500)	(1,500)
Exercised	(116,501)	(178,164)	(19,100)
Outstanding at December 31	**—**	**118,376**	**300,040**
Exercisable at December 31	**—**	**15,300**	**89,892**

With respect to the warrants exercised in 2020, a total of 29,125 warrants representing 116,501 shares were exercised in the last quarter. The share price at exercise date was $40.21. The 2013 warrant plan prescribes that each warrant gives right to four shares , and the table above presents the impact on the number of shares.

IPO warrant plan

Each warrant gives the right to the holder to one ordinary share of the parent Company. The warrants have a contractual term of 10 years and vest for 25% in the fourth year; 25% in the fifth year; 25% in the sixth year and 25% in the seventh year. Warrants are exercisable as from the month after they have vested and in the subsequent exercise periods. There are no cash settlement alternatives and the Group does not have a practice of cash settlement for these warrants. The warrants have a contractual term of 10 years.

The Group granted 979,898 warrants in July 2014 and 36,151 warrants in November 2014 in the context of the initial public offering to the employees of the Group with an exercise price of €8.81 ("IPO warrant plan"). The Group granted an additional 18,180 warrants to employees in July 2015 under the IPO warrant plan.

The status of the IPO warrant plan at December 31 is as follows:

	2020	2019	2018
Outstanding at January 1	**465,212**	**589,052**	**671,503**
Granted	—	—	—
Forfeited / Cancelled	(27,247)	(20,252)	(42,209)
Exercised	(201,239)	(103,588)	(40,242)
Outstanding at December 31	**236,726**	**465,212**	**589,052**

Exercisable at December 31	**95,575**	**169,071**	**114,012**

With respect to the warrants exercised in 2020, a total of 201,239 warrants representing 201,239 shares were exercised in the last quarter. The share price at exercise date was $ 40.21.

Warrant plan 2015

The board of directors decided on December 18, 2015 on a new plan ("2015 warrant plan") by which it can grant up to 1,400,000 warrants to employees. Each warrant gives the right to the holder to one ordinary share of the parent Company. The warrants vest for 10% on the second anniversary of the granting; 20% on the third anniversary of the granting; 30% on the fourth anniversary of the granting; and 40% on the fifth anniversary of the granting, unless otherwise decided by the board of directors or one or more of its representatives granted powers thereto. Warrants are exercisable only after they have vested and only during a period of (i) four weeks following the publication of the results of the parent Company of the second and fourth quarter, or (ii) if no quarterly results are published, during the month March and the month September of every year. There are no cash settlement alternatives and the Group does not have a practice of cash settlement for these warrants. The warrants have a term of ten years.

The Group granted 350,000 warrants in July 2016 to the employees of the Group with an exercise price of €6.45. The Group granted 2,000 warrants to an employee in May 2018 with an exercise price of €10.08.

The status of the 2015 warrant plan at December 31 is as follows:

	2020	2019	2018
Outstanding at January 1	**310,400**	**325,200**	**329,000**
Granted	—	—	2,000
Forfeited / Cancelled	(6,400)	(14,800)	(5,800)
Exercised	(170,100)	—	—
Outstanding at December 31	**133,900**	**310,400**	**325,200**
Exercisable at December 31	**15,100**	**96,500**	**32,700**

With respect to the warrants exercised in 2020, a total of 170,100 warrants representing 170,100 shares were exercised. The weighted average share price at exercise date was $ 37.60.

Fair value

The fair value of the warrants is estimated at the grant date using the Black-Scholes option pricing model, taking into account the terms and conditions upon which the warrants were granted.

The following table provides the input to the Black-Scholes model for the 2013 warrant plan, IPO warrant plan and 2015 warrant plan:

	2015 (Sept 16)	2015 (Nov)	IPO 2014 (Nov)	IPO 2014 (June)	2013 (Dec) *	2013 (Oct) *
Return dividend	0%	0%	0%	0%	0%	0%
Expected volatility	47%	47%	50%	46%	50%	53%
Risk-free interest rate	0.24%	1.17%	1.12%	1.70%	2.56%	2.43%
Expected life	4.30	5.50	5.50	5.50	5.50	5.50
Exercise price (in €)	6.45	8.81	8.81	8.81	8.54	7.86
Stock price (in €)	6.42	8.08	8.67	8.81	18.09	18.09
Fair value SAR (in €)	2.41	3.30	3.94	3.83	12.23	12.77

(*)Exercise price, stock price and fair value are not adjusted for the 1 to 4 stock-split completed in June 2014.

The above input for the Black-Scholes model have been determined based on the following:

- The dividend return is estimated by reference to the historical dividend payments of the Group. Currently, this is estimated to be zero as no dividends have been paid since inception;
- Expected volatility is estimated based on the average annualized volatility of the volatility of the Group's stock (until September 2016: of a number of quoted peers in the 3D printing industry and the volatility of the Group's stock);
- Risk-free interest rate is based on the interest rate applicable for the 10Y Belgian government bond at the grant date;
- Estimated life of the warrant is determined to be until the first exercise period which is typically the month after vesting; and
- Fair value of the shares is determined based on the share price of the Group on Nasdaq at the date of valuation. For the grants prior to the initial public offering, the fair value of the shares was estimated based on a discounted cash flow model with 3-year cash flow projections and a multiple of EBITDA determined based on a number of quoted peers in the 3D printing industry.

The expense arising from share-based payment transactions for the warrant plans mentioned above was K€102 (2019: K€401; 2018: K€640)

The weighted average remaining estimated life of the warrants outstanding as of December 31, 2020 is 4.31 years (2019: 5.20 years; 2018: 5.95 years). The weighted average fair value for the warrants outstanding at the end of 2020 was €3.29 (2019: €4.48; 2018: €5.62). The weighted average exercise price for the warrants outstanding at the end of 2020 was €7.92 (2019: €7.88; 2018: €7.99).

Cash-settled share-based payment plans

The Group has issued 215,688 SARs in July 2014 towards certain employees in certain countries due to legal requirements with similar terms and conditions as the IPO warrant plan except that the SAR will be settled in cash. The exercise price of the SAR is €8.81.

The status of this plan is as follows:

	2020	2019	2018
Outstanding at January 1	**71,064**	**103,757**	**137,217**
Granted	—	—	—
Forfeited / Cancelled	(5,921)	(4,400)	(19,595)
Exercised	(28,047)	(28,293)	(13,865)
Outstanding at December 31	**37,096**	**71,064**	**103,757**
Exercisable at December 31	**12,630**	**15,988**	**16,189**

The SAR plan grants the bearer the right to a cash payment equal to the difference between the exercise price and the stock price at the exercise date. This plan is considered a cash settled share based payment and is as such recorded as a liability (see Note 16).

The SARs have a contractual term of ten years and vest for 25% in the fourth year; 25% in the fifth year; 25% in the sixth year and 25% in the seventh year. SARs are exercisable as from the month after they have vested and in the subsequent exercise periods.

The fair value of the SAR is estimated at each reporting date using the Black-Scholes option pricing model, taking into account the terms and conditions upon which the warrants were granted.

The following table lists the input used for the Black-Scholes model:

	2020	2019	2018
Return dividend	0%	0%	0%
Expected volatility	84%	49%	49%
Risk-free interest rate	-0.34%	0.10%	0.77%
Expected life	0.25	0.25	1.25
Exercise price (in €)	8.81	8.81	8.81
Stock price (in €)	44.20	16.32	17.49
Fair value SAR (in €)	35.38	7.52	9.09

The expense arising from share-based payment transactions for the SARs plan was K€1,242 in 2020 (2019: K€ (11); 2018: K€435). The carrying value of the liability at December 31, 2020 amounts to K€1,223 (2019: K€574; 2018: K€786). The total intrinsic value of the liability for warrants currently exercisable at December 31, 2020 amounts K€447 (2019: K€120; 2018: K€141).

Share-based payment plans of RapidFit+

The subsidiary RapidFit+ has issued a warrant plan on August 23, 2013 where a maximum of 300 warrants can be offered to management with an exercise price of €553.92. In January 2014, a total of 199 warrants were granted and accepted.

The changes for the year for the RapidFit+ warrant plan are as follows:

	2020	2019	2018
Outstanding at January 1	186	199	199
Granted	—	—	—
Forfeited / Cancelled	—	(13)	—
Exercised	—	—	—
Outstanding at December 31	**186**	**186**	**199**
Exercisable at December 31	**186**	**184**	**—**

The following table lists the input to the Black-Scholes model for the RapidFit+ warrant plan:

	2014
Return dividend	0%
Expected volatility	50%
Risk-free interest rate	2.29%
Expected life	5.5
Exercise price	553.9
Fair value option	262.7

The expense arising from share-based payment transactions for RapidFit+ warrant plan was K€2 in 2020 (2019: K€2; 2018: K€7)

15 Loans and borrowings

The loans and borrowings include the following:

in 000€	As of December 31 2020	2019	2018
K€35,000 EIB bank loan	35,000	35,000	10,000
K€28,000 acquisition bank loan	18,621	21,612	24,576
K€18,000 secured bank loans	17,013	17,429	17,739
K€12,300 bank loans ACTech	10,470	11,850	12,300
K€9,050 other facility loans	2,910	3,599	4,299
Bank investment loans—top 20 outstanding	17,280	22,132	23,801
Bank investment loans—other	2,681	4,429	3,808
Lease liabilities (2018: Finance leases)	10,624	9,876	6,809
Institutional loan	353	824	1,492
Convertible bonds	—	1,000	1,000
Related party loan	158	187	214
Total loans and borrowings	**115,110**	**127,938**	**106,038**
Current	17,523	16,838	13,598
Non-Current	97,588	111,100	92,440

K€35,000 EIB bank loan

On December 20, 2017 the Group entered into a finance contract with the European Investment Bank, or EIB, to finance future research and development programs. As part of a first tranche, an amount of K€10,000 was drawn in the course of 2018. The agreement foresees a first two-year period without loan reimbursements. Loans under the contract are made at a fixed rate, based on the Euribor rate at the time of the borrowing, plus a variable margin. The interest rate for this loan is 2.40%. The contract contains customary security, covenants and undertakings. A second tranche of K€25,000 was drawn in the course of 2019 with an interest rate of 2.72%.

On June 29, 2020, the European Investment Bank has temporarily waived the compliance obligation of the covenants “Total gross Debt to Adjusted EBITDA” (until 31 December 2022), and “Adjusted EBITDA to Net financial charges” (until 31 December 2020) under the condition that the covenant Total net debt to Adjusted EBITDA will be met for the period. In addition, the European Investment Bank agreed not to recalculate the interest rate until 3 January 2022 for the first tranche and until 17 January 2022 for the second tranche. Finally, the European Investment Bank waived “the subsidiary financial indebtedness” for the calculation period ending on 30 June 2020. For the periods thereafter this covenant has been eased. These covenants have been waived in order to allow the Group to continue investing in its growth programs, even under stressed COVID-19 scenarios, without breaching the covenants.

K€28,000 Acquisition loan

This bank loan has been concluded in October 2017 to finance the acquisition of ACTech. The loan includes a portion of K€18,000 reimbursable monthly during seven years, and a bullet portion of K€10,000, reimbursable at once in October 2024. The interest rate is fixed for the duration of the loan, and amounts to 1.1% on average for both portions. The bank loans are secured with a business pledge mandate, a share pledge on Materialise Germany GMBH, and debt covenants.

K€18,000 secured bank loans

The K€18,000 loan has been concluded in 2016 in two agreements to finance the construction of new facilities in Leuven (Belgium) and in Poland, both maturing in 2032. The agreement for the Belgian facility financing amounts to K€12,000; drawn per end 2020: K€11,739 (drawn per end 2019: K€11,739; per end 2018 K€11,739), and with reimbursements only starting in December 2022. The agreement for the Polish facility financing amounts to K€6,000 (fully drawn per end of 2017), and reimbursements have started in June 2019. The average interest rate of both agreements amounts to 1.2%. The bank loan is secured with a mortgage mandate on the Belgian facility buildings.

K€12,300 bank loans

In March 2018, three bank loans originating from the acquired ACTech Group were refinanced entirely for the amount of K€9,300, with adjusted maturity to May 2025 and first reimbursements in August 2020. The interest rate has been fixed at approximately 1.6%, and pledges including a K€4,650 mortgage on ACTech’s facilities and a guarantee of Materialise NV. In addition, a new investment credit of K€3,000 was obtained in June 2018, repayable as from January 2019 and with a fixed interest rate of 1.5%.

K€9,050—Other facility loans

Three facility loans were contracted in 2005, 2006 and 2012 for the construction of Leuven office and production facilities (K€2,000, K€300 and K€5,000, respectively) and another loan for the Czech Republic offices in 2008 (K€1,750). The balance of the four loans amounts to K€2,910 per December 31, 2020. All loans have a repayment schedule of K€15 years and interest rates are fixed between 4.3% and 5.4% for the four loans.

Miscellaneous investment loans

The 20 largest of these loans outstanding as at December 31, 2020 amount to a balance of K€17,280. They have been agreed in 2020 and in the years before to finance various investments in machinery, printers, equipment, and software tools. The vast majority of the loans have a reimbursement period over seven years, and are at fixed interest rates with weighted average below 1%.

K€10,624 Lease liabilities included lease with related party

The Group has several lease obligations mainly with financial institutions and related to the financing of buildings and various other items of plant and equipment such as 3D printers. As at December 31, 2020 the balance of these lease agreements amounts to K€10,624, and are mostly at fixed interest rates with weighted average below 2%. The subsidiary Engimplan rents the office and production building from a related party for an initial term of 10 years, with an extension option for an additional 10 years (assessed not to be reasonably certain to be exercised). The lease has been accounted for under IFRS 16 resulting in a lease liability at December 31, 2020 of K€414.

The total cash outflow from the lease liabilities amounts to K€3,640 in 2020, K€5,283 in 2019 and K€3,102 in 2018.

K€2,000 institutional loan

This loan was contracted with a governmental institution in Germany to finance the production operations of Materialise Germany for a maximum amount of K€2,000. The loan is repayable over a four year period, starting as of September 2017 with a fixed interest rate of 0.25% payable per quarter. As at December 31, 2020 K€2,000 has been drawn with an outstanding balance of K€353.

K€1,000 convertible bond with related party

On October 9, 2020, 1,000 convertible bonds with a related party for a total amount of K€1,000 were converted to 509,904 shares.

Related party loan

Lunebeke NV, a related party of the Group as discussed in Note 26, has granted the Group a loan at fixed interest rate of 4.23% that matures in 2025. The purpose of the loan is to finance the purchase of a building in France. The amount outstanding as of December 31, 2020 is K€158 (2019: K€187; 2018: K€214). The interest expense for the year ended December 31, 2020 is K€7 (2019:K€9; 2018: K€10).

Changes of liabilities for financing activities:

The following table presents the changes of the liabilities for financing activities:

	For the year ended December 31		
in 000€	2020	2019	2018
At January 1,	**127,938**	**106,038**	**94,557**
Proceeds from loans & borrowings	—	29,000	32,554
Repayment of loans & borrowings	(13,736)	(12,126)	(18,820)
New leases	4,626	8,326	792
Repayment of leases	(3,640)	(5,283)	(3,102)
Loans acquired from business combination	—	2,076	—
Net foreign exchange movements	(78)	(92)	57
At December 31,	**115,110**	**127,938**	**106,038**

16 Other non-current liabilities

The other non-current liabilities consist of the following:

in 000€	As of December 31, 2020	2019	2018
Provisions	318	122	82
Other	80	574	786
Total	**398**	**696**	**868**

The increase of the provision relates to a provision of royalties payable to APHP (Assistance Publique – Hôpitaux de Paris), one of the Group's business partners in the Medical segment, for K€220.

The other item doesn't include anymore per December 31, 2020 a long term liability related to the cash settled shared based payment plan as referred to in Note 14 (2019: K€574; 2018: K€786). The amount of K€1,223 is booked on short term.

The impact of the accounting treatment of the Belgian contribution plans with a minimal guarantee are not material as only a limited number of people can benefit. No provisions have been recognized as of December 31, 2020, 2019 and 2018. As such, no further disclosures have been provided.

17 Tax payables

The tax payables amount to K€974as per December 31, 2020 (2019:K€3,363; 2018:K€2,313) and are mainly related to the tax payables of the entities located in Germany. In Germany a tax unity was set-up in 2018 between Materialise Germany and ACTech.

18 Deferred income

Deferred income consists of the following:

in 000€	As of December 31 2020	2019	2018
Deferred maintenance & license	30,242	27,667	22,606
Deferred (project) fees	4,555	4,647	4,838
Deferred government grants	85	358	338
Total	**34,882**	**32,672**	**27,782**
current	29,555	27,641	23,195
non-current	5,327	5,031	4,587

The deferred maintenance and license revenue consist of maintenance and license fees paid up-front which are deferred and recognized in earnings over either the maintenance period or the duration of the license. The deferred (project) fees consist of one-time and advance payments received which are deferred in accordance with the revenue accounting policies. The deferred government grants are recognized as income under “other operating income”.

We refer to Note 22.1.2 for more detail on the contract liabilities.

Table of Contents

19 Other current liabilities

Other current liabilities include the following:

in 000€	As of December 31 2020	2019	2018
Payroll-related liabilities	11,152	10,281	10,111
Non-income tax payables	3,018	2,262	2,175
Accrued charges	995	1,080	789
Advances received	404	715	713
RapidFit+ amounts payable to former shareholders	875	875	845
CENAT amounts payable to former shareholders	—	—	450
Derivatives	140	478	—
Cash settled share-based payment plan	1,223	—	—
Other current liabilities	888	1,995	259
Total	**18,695**	**17,686**	**15,342**

The non-income tax payables mainly relate to VAT payables and payroll taxes.

20 Fair value

Financial assets

The carrying value and fair value of the financial assets as of December 31, 2020, 2019 and 2018 are as follows:

	Carrying value			Fair value		
in 000€	2020	2019	2018	2020	2019	2018
Financial assets						
Debt instruments measured at amortized cost						
Trade receivables (current)	30,871	40,977	36,891	30,871	40,977	36,891
Other financial assets (non-current)	712	580	1,530	712	580	1,530
Other current non-trade receivables	1,618	1,676	1,461	1,618	1,676	1,461
Cash & cash equivalents	111,538	128,897	115,506	111,538	128,897	115,506
Total debt instruments	**144,739**	**172,130**	**155,388**	**144,739**	**172,130**	**155,388**
Financial assets at fair value through profit or loss						
Derivatives	23	9	117	—	—	—
Convertible loan	6,203	2,750	—	—	—	—
Total financial assets measured at fair value	**6,226**	**2,759**	**117**	**—**	**—**	**—**
Equity instruments designated at fair value through OCI						
Non-listed equity investments	3,842	3,046	2,701	—	—	—
Total Equity instruments designated at fair value through OCI	**3,842**	**3,046**	**2,701**	**—**	**—**	**—**

The fair value of the financial assets has been determined on the basis of the following methods and assumptions:

- The carrying value of the cash and cash equivalents and the current receivables approximate their fair value due to their short term character;
- The fair value of the derivatives has been determined based on a mark-to-market analysis prepared by the bank based on observable market inputs (level 2 inputs);
- Other current non-trade receivables are being evaluated on the basis of their credit risk and interest rate. Their fair value is not different from their carrying value on December 31, 2020, 2019 and 2018
- The non-listed equity investments, mainly representing the investment in Essentium Inc for K€3,535 and AM Flow (via an investment in AM Danube, one of the shareholders of AM Flow) for K€307, are measured at fair value.
  - For Essentium, as of December 31, 2020, the Group has estimated that the fair value at December 31, 2020 amounts to K€3,535 with a fair value adjustment recognized in OCI of K€489. The fair value of the investment (based upon level 2 inputs) as at December 31, 2020 was based on a recent capital B round in which third parties participated, but the Group not. Furthermore, the followings matters were considered:
    - Essentium is a non-listed entity;
    - The Group only has an insignificant interest in Essentium Inc (5.00% of the shares);
    - The Group has no representatives in the Board of Directors of Essentium Inc.
  - For AM-flow, as of December 31, 2020, management considers that currently the cost is an appropriate estimate of fair value (level 2 input) because a recent capital increase indicated that the market valuation of AM Flow has not changed and because of the followings reasons:
    - AM Flow is a non-listed entity;
    - The Group only has an insignificant interest in AM Flow BV (8.42% of the shares indirectly);
    - The Group has no representatives in the Board of Directors of AM Flow BV; and
    - Insufficient more recent information is available to measure fair value;

The convertible loans granted to Fluidda and Ditto are measured at fair value. As of December 31, 2020, management considered the fair value based upon level 3 inputs as follows:

- Fluidda: The Group assessed the fair value of the convertible loan as at December 31, 2020 amounts to K€3,310 which includes a fair value adjustment of K€316 recorded in financial income during 2020. Fluidda is a private start-up company which delivers CRO services for drug development and develops medical devices which require EMA/FDA approvals. Fluidda is currently loss-making. The convertible loan has a duration of 7 years with a 10.0% annual interest rate which are capitalized. The Group has applied a discount factor of 14.44% that is based on the estimated WACC of Fluidda reflecting the uncertainty in relation to the success of the company and the applied estimates by the Group.
- Ditto: The convertible loan granted to Ditto in August 2020 has a notional amount up to K$9,000 that will be called-up when certain milestones are reached. The Group estimated the fair value of the convertible loan to K€2,892 as of 31 December 2020. No fair value adjustment has been recorded yet as the Group considers fair value equals the loan’s carrying amount as at December 31, 2020. Ditto is a

private technology company which has a software solution for the eyeware industry with iPad app, frame recommendation and virtual try-on technology platform. Ditto is currently loss-making. The convertible loan has a duration of 5 years with a 8% annual interest rate which are capitalized.

In assessing the fair value, the Group has made significant estimates with regard to the discount rate, the probability of each repayment and conversion scenario and related timing, the amount of the qualified capital increase. Changes in the significant assumptions may lead to a significant increase/decrease in the fair value of the convertible loan. A increase/decrease in the applied discount rate for Fluidda by 1% would lead to a change in fair value by K€31 / K€ -31.

Financial liabilities:

The carrying value and fair value of the financial liabilities as of December 31, 2020, 2019 and 2018 can be presented as follows:

	Carrying value			Fair value		
in 000€	2020	2019	2018	2020	2019	2018
Financial liabilities measured at amortized cost						
Loans & Borrowings including lease liabilities	115,110	127,939	106,037	116,843	128,930	105,026
Trade payables	17,698	18,517	18,667	17,698	18,517	18,667
Other liabilities excl. written put option on NCI	1,275	3,187	778	1,275	3,187	778
Total financial liabilities measured at amortized cost	**134,083**	**149,643**	**125,482**	**135,816**	**150,634**	**124,471**
Financial liabilities measured at fair value						
Contingent consideration	—	—	450	—	—	—
Cash settled share based payments	1,223	—	786	—	—	—
Written put option on NCI	875	875	845	—	—	—
Derivatives	140	478	194	—	—	—
Total financial liability measured at fair value	**2,238**	**1,353**	**2,275**	**—**	**—**	**—**
Total non-current	98,543	112,549	94,521	—	—	—
Total current	37,778	38,447	33,236	—	—	—

The fair value of the financial liabilities has been determined on the basis of the following methods and assumptions:

- The carrying value of current liabilities approximates their fair value due to the short term character of these instruments;
- Loans and borrowings are evaluated based on their interest rates and maturity date. Most interest bearing debts have fixed interest rates and their fair value is subject to changes in interest rates and individual creditworthiness. Their carrying value approximates their fair value;
- The fair value of the derivatives has been determined based on a mark-to-market analysis prepared by the bank based on observable market inputs (level 2 inputs);
- The fair value of the written put option on non-controlling interest has been determined based on the present value of the redemption amount (level 3 inputs);
- The fair value of the cash-settled share based payments has been determined based on a Black-Scholes model using inputs that are level 1 (stock-price and risk-free interest rate) as well as level 2 (e.g. volatility). We refer to Note 14.
- The fair value of the (contingent) consideration has been determined based on the latest long-term business plans of the Cenat business (level 3 inputs). Note that the consideration is no longer contingent as per end 2018.

Fair value hierarchy 3 evolution

Convertible Loans Ditto & Fluidda	Fair Value Evolution		
in 000€	2020	2019	2018
As at 1 January	**2,750**	**—**	**—**
Addition	2,830	2,500	—
Remeasurement	316	—	—
Capitalized interests	307	250	—
As at 31 December	**6,203**	**2,750**	**—**

Written Put Option on NCI RapdFit+	Fair Value Evolution		
in 000€	2020	2019	2018
As at 1 January	**875**	**845**	**788**

Remeasurement	—	30	57
As at 31 December	**875**	**875**	**845**

Fair value hierarchy

The Group uses the following hierarchy for determining and disclosing the fair value of financial instruments by valuation technique:

- Level 1: quoted (unadjusted) prices in active markets for identical assets and liabilities;
- Level 2: other techniques for which all inputs which have a significant effect on the recorded fair value are observable, either directly or indirectly; and
- Level 3: techniques which use inputs that have a significant effect on the recorded fair value that are not based on observable market data.

The Group has the following financial instruments carried at fair value in the statement of financial position on December 31, 2020, 2019 and 2018: the derivatives related to interest rate and foreign currency swaps as included in the above tables, a call option and written put option on non-controlling interest, the (contingent) consideration for the acquisition of Cenat and the non-listed equity investments.

21 Segment information

For management purposes, the Group is organized into segments based on their products, services and industry and has the following three reportable segments:

- The Materialise Medical segment, which develops and delivers medical software solutions, medical devices and other related products and services;
- The Materialise Manufacturing segment, which delivers 3D printed products and related services; and
- The Materialise Software segment, which develops and delivers additive manufacturing software solutions and related services.

The measurement principles used by the Group in preparing this segment reporting are also the basis for segment performance assessment and are in conformity with IFRS. The Chief Executive Officer of the Group acts as the chief operating decision maker. As a performance indicator, the chief operating decision maker controls the performance by the Group's revenue and adjusted EBITDA.

The following table summarizes the segment reporting for each of the reportable periods ending December 31. Corporate research and development, headquarters' function, financing and income taxes are managed on a Group basis and are not allocated to operating segments. As management's controlling instrument is mainly revenue-based, the reporting information does not include assets and liabilities by segment and is as such not available per segment.

in 000€	Materialise Software	Materialise Medical	Materialise Manufacturing	Total segments	Unallocated(1)	Consolidated
For the year ended December 31, 2020						
Revenues	39,054	61,729	69,635	170,418	31	170,449
Segment Adjusted EBITDA	13,383	13,915	2,548	29,847	(9,468)	20,378
Segment Adjusted EBITDA %	34.3%	22.5%	3.7%	17.5%	—	12.0%
For the year ended December 31, 2019						
Revenues	41,654	60,808	94,156	196,618	61	196,679
Segment Adjusted EBITDA	13,812	10,774	12,154	36,740	(10,084)	26,656
Segment Adjusted EBITDA %	33.2%	17.7%	12.9%	18.7%	—	13.6%
For the year ended December 31, 2018						
Revenues	37,374	52,252	94,956	184,582	139	184,721
Segment Adjusted EBITDA	11,536	10,252	10,785	32,573	(9,047)	23,526
Segment Adjusted EBITDA %	30.9%	19.6%	11.4%	17.6%	—	12.7%

The segment Adjusted EBITDA is reconciled with the consolidated net profit (loss) for the year as follows:

	For the year ended December 31,		
in 000€	2020	2019*	2018
Segment Adjusted EBITDA	**29,847**	**36,740**	**32,573**
Depreciation, amortization and impairment	(19,775)	(19,278)	(17,287)
Corporate research and development	(2,824)	(1,859)	(1,913)
Corporate headquarter costs	(11,719)	(11,077)	(10,358)
Other operating income (expense)	3,668	2,410	2,149
Fair value adjustment 50% RS Print	770	—	—
Impairments	(4,606)	—	—
Operating (loss)/ profit	**(4,639)**	**6,936**	**5,164**
Financial expenses	(5,995)	(3,682)	(4,864)
Financial income	2,452	1,377	3,627
Income taxes	949	(2,595)	(425)
Share in loss of joint venture	(39)	(392)	(475)
Net profit (loss) for the year	**(7,272)**	**1,644**	**3,027**

The Group has no customers with individual sales larger than 10% of the total revenue in 2020 (2019: 0%; 2018: 0%).

Entity-wide disclosures

The revenue by geographical area is as follows:

in 000€	As of December 31, 2020	2019	2018
United States of America	47,266	56,235	42,217
Americas other than USA	5,297	3,395	1,700
Belgium	7,048	7,917	9,350
Germany	17,087	31,185	30,436
France	11,586	20,110	22,282
Switzerland	12,587	14,907	13,135
United Kingdom	7,725	13,804	11,946
Italy	5,876	6,707	4,392
Netherlands	6,943	5,825	7,382
Other Europe	31,518	17,329	21,455
Asia Pacific	17,516	19,265	20,426
Total	**170,449**	**196,679**	**184,721**

The total revenue realized in the country of domicile (Belgium) in 2020 amounts to K€7,048 (2019:K€7,917; 2018:K€9,350).

The total non-current assets, other than financial instruments, deferred tax assets, by geographical area are as follows:

in 000€	As of December 31, 2020	2019	2018
United States of America (USA)	3,441	4,194	3,953
Americas other than USA	3,454	8,374	62
Belgium	62,810	49,426	48,873
Germany	58,305	57,918	56,096
Poland	13,437	15,506	16,206
Rest of Europe	9,087	10,410	10,125
Asia-Pacific	2,052	2,658	1,039
Total	**152,586**	**148,486**	**136,354**

The totals of the above table include goodwill, intangible assets and property, plant & equipment and Right-of-Use Assets as disclosed in the consolidated statements of financial position.

Table of Contents

22 Income and expenses

22.1 Revenue

22.1.1 Disaggregated revenue information

in 000€	For the year ended December 31, 2020					
	Materialise Software	Materialise Medical	Materialise Manufacturing	Total segments	Unallocated	Consolidated
Geographical markets						
United States of America (USA)	11,939	28,173	7,153	47,265	—	47,265
Americas other than USA	533	4,504	260	5,297	—	5,297
Europe (without Belgium) & Africa	15,702	20,781	56,840	93,323	—	93,323
Belgium	112	2,335	4,570	7,017	31	7,048
Asia Pacific	10,768	5,936	812	17,516	—	17,516
Total revenue from contracts with customers	39,054	61,729	69,635	170,418	31	170,449
Type of goods or service						
Software revenue (non-medical)	39,054	—	—	39,054	—	39,054
Software revenue (medical)	—	19,808	—	19,808	—	19,808
Medical devices and services	—	41,921	—	41,921	—	41,921
Manufacturing	—	—	69,635	69,635	—	69,635
Other	—	—	—	—	31	31
Total revenue from contracts with customers	39,054	61,729	69,635	170,418	31	170,449
Timing of revenue recognition						
Goods/Services transferred at a point in time	15,536	46,286	66,824	128,646	31	128,677
Goods/Services transferred over time	23,518	15,443	2,811	41,772	—	41,772
Total revenue from contracts with customers	39,054	61,729	69,635	170,418	31	170,449

in 000€	For the year ended December 31, 2019					
	Materialise Software	Materialise Medical	Materialise Manufacturing	Total segments	Unallocated	Consolidated
Geographical markets						
United States of America (USA)	11,188	29,100	15,947	56,235	—	56,235
Americas other than USA	487	2,071	837	3,395	—	3,395
Europe (without Belgium) & Africa	18,767	21,356	69,744	109,867	—	109,867
Belgium	183	2,101	5,572	7,856	61	7,917
Asia Pacific	11,029	6,180	2,056	19,265	—	19,265
Total revenue from contracts with customers	41,654	60,808	94,156	196,618	61	196,679
Type of goods or service						
Software revenue (non-medical)	41,654	—	—	41,654	—	41,654
Software revenue (medical)	—	19,407	—	19,407	—	19,407
Medical devices and services	—	41,401	—	41,401	—	41,401
Manufacturing	—	—	94,156	94,156	—	94,156
Other	—	—	—	—	61	61
Total revenue from contracts with customers	41,654	60,808	94,156	196,618	61	196,679
Timing of revenue recognition						
Goods/Services transferred at a point in time	21,190	45,730	88,988	155,908	61	155,969
Goods/Services transferred over time	20,464	15,078	5,168	40,710	—	40,710
Total revenue from contracts with customers	41,654	60,808	94,156	196,618	61	196,679

The revenue per type of good or service including the previous years is as follows:

in 000€	For the year ended December 31 2020	2019	2018
Software revenue (non-medical)	39,054	41,654	37,374
Software revenue (medical)	19,808	19,407	17,045
Medical devices and services	41,921	41,401	35,207
Manufacturing	69,635	94,156	94,956
Other	31	61	139
Total	**170,449**	**196,679**	**184,721**

22.1.2 Contract balances

The following table provides information about receivables, contracts in progress (contract assets) and deferred income (contract liabilities) from contracts with customers.

in 000€	As of December 31, 2020	2019
Trade receivables, included in ‘trade and other receivables’	32,345	42,509
Contract assets / contracts in progress	749	495
Contract liabilities / deferred income	34,797	32,314

We refer to note 18 for a detail of the deferred income. Note 18 includes split of the deferred income in current and non-current. Non-current deferred income, representing mainly maintenance contracts with terms more than one year and certain contracts with up-front fees which are allocated to performance obligations that will be satisfied over more than one year, may be recognized as revenue between one to three years. Total revenue recognized during 2020 that was included in the contract liability at the beginning of the year amounts to K€32,314. There is no revenue recognized during 2020 from performance obligations that were satisfied in the previous years.

The relation between the timing of satisfaction of the performance obligations and the timing of billing resulting in contract assets and liabilities is as follows:

- Maintenance services: maintenance services are typically billed at the beginning of the maintenance period resulting in deferred income that is recognized on a straightline basis over the maintenance period.
- Software licenses: certain software licenses may have been billed prior to the delivery of the software key or time-based software licenses may have been billed up-front resulting in a deferred income balance.
- Certain agreements in the medical segment include up-front fees such as step-in fees or milestone payments which are billed at inception of the contract but which are allocated to performance obligations which are satisfied at a later time in the contract term or which have not been recognized considering the revenue contraint (i.e. may have to be credited when customer achieves certain volume targets). In addition, certain contracts include prepaid fees for volume “Plan Only” purchases for which the purchased services are only delivered during a one year period. Those fees result in deferred income which are recognized as revenue when services/products are delivered and revenue is not constrainted.
- Certain development services are satisfied while the services can only billed at certain pre-defined points in time or when the services are fully satisfied resulting in contracts in progress / contract assets.

22.2 Cost of sales

Cost of sales includes the following selected information:

in 000€	For the year ended December 31 2020	2019*	2018
Purchase of goods and services	(31,725)	(37,870)	(39,114)
Amortization and depreciation	(11,788)	(10,917)	(9,910)
Payroll expenses	(32,438)	(37,715)	(33,036)
Other expenses	(495)	(550)	(239)
Total	**(76,446)**	**(87,052)**	**(82,299)**

22.3 Research and development expenses

Research and development expenses include the following selected information:

in 000€	For the year ended December 31		
	2020	2019	2018
Purchase of goods and services	(2,788)	(2,583)	(3,590)
Amortization and depreciation	(1,746)	(1,483)	(830)
Payroll expenses	(20,368)	(19,219)	(17,935)
Other	(2,202)	(63)	(61)
Total	**(27,104)**	**(23,348)**	**(22,416)**

22.4 Sales and marketing expenses

Sales and marketing expenses include the following selected information:

in 000€	For the year ended December 31		
	2020	2019	2018
Purchase of goods and services	(5,960)	(9,228)	(9,775)
Amortization and depreciation	(1,946)	(1,346)	(725)
Payroll expenses	(36,521)	(42,055)	(35,585)
Other	(209)	(360)	(218)
Total	**(44,636)**	**(52,989)**	**(46,303)**

22.5 General and administrative expenses

General and administrative expenses include the following selected information:

in 000€	For the year ended December 31		
	2020	2019	2018
Purchase of goods and services	(8,933)	(9,856)	(9,892)
Amortization and depreciation	(2,437)	(3,630)	(3,828)
Payroll expenses	(18,104)	(18,078)	(18,442)
Other	137	(222)	(148)
Total	**(29,337)**	**(31,786)**	**(32,310)**

22.6 Net other operating income

The net other operating income can be detailed as follows:

in 000€	For the year ended December 31		
	2020	2019*	2018
Government grants	4,473	5,263	4,658
Amortization intangibles purchase price allocation	(1,857)	(2,013)	(1,994)
Allowance for doubtful debtors	(244)	210	(1,065)
Capitalized expenses (asset construction)	316	166	16
Net foreign currency exchange gains / (losses)	—	—	246
Tax Credits	1,198	665	706
Fair value adjustment Cenat liability	—	—	192
Personnel related income	—	37	168
Fair value adjustment RS Print	770	—	—
Impairment Engimplan	(2,516)	—	—
Other	296	1,104	844
Total	**2,436**	**5,432**	**3,771**

* The year 2019 has been restated to reflect the final accounting of the business combination with Engimplan.

The Company has received government grants from the Belgian federal and regional governments and from the European Community in the forms of grants linked to certain of its research and development programs and reduced payroll taxes.

22.7 Payroll expenses

The following table shows the breakdown of payroll expenses for 2020, 2019 and 2018:

	For the year ended December 31		
in 000€	2020	2019	2018
Short-term employee benefits	(82,135)	(87,775)	(76,023)
Social security expenses	(15,691)	(15,647)	(14,139)
Expenses defined contribution plans	(1,150)	(1,033)	(936)
Other employee expenses	(8,455)	(12,612)	(13,900)
Total	**(107,431)**	**(117,067)**	**(104,998)**
Total registered employees at the end of the period	2,162	2,177	2,009

22.8 Financial expenses

Financial expenses includes the following selected information:

	For the year ended December 31		
in 000€	2020	2019	2018
Interest expense	(2,299)	(2,146)	(1,747)
Foreign currency losses	(2,999)	(832)	(2,748)
Other financial expenses	(697)	(704)	(369)
Total	**(5,995)**	**(3,682)**	**(4,864)**

22.9 Financial income

Financial income includes the following selected information:

	For the year ended December 31		
in 000€	2020	2019	2018
Foreign currency exchange gains	1,668	955	3,047
Other finance income	784	422	580
Total	**2,452**	**1,377**	**3,627**

22.10 Income taxes and deferred taxes

Current income tax

The following table shows the breakdown of the tax expense for 2020, 2019 and 2018:

	As of December 31,		
in 000€	2020	2019	2018
Estimated tax liability for the year	4	(2,926)	(1,216)
Tax adjustments to the previous year	—	—	—
Deferred income taxes	945	331	791
Total income tax benefit (expense) for the period	**949**	**(2,595)**	**(425)**

The current tax expense is equal to the amount of income tax owed to the tax authorities for the year, under the applicable tax laws and rates in effect in the various countries. The estimated tax liability is mainly due in Germany.

Deferred tax

Deferred tax is presented in the statement of financial position under non-current assets and non-current liabilities, as applicable. The following table shows the breakdown of the deferred tax assets, deferred tax liabilities and the deferred tax expense for 2020, 2019 and 2018:

	Asset/(liability)			Income/(expense)		
in 000€	2020	2019	2018	2020	2019	2018
Tax losses, notional interest deduction and other tax benefits	—	—	26	—	—	—
Amortization development assets and other intangible assets	75	38	224	—	—	—
Depreciation property, plant & equipment	125	70	30	—	—	—
Other items	1	84	35	—	—	—
Total deferred tax assets	**201**	**192**	**315**	**9**	**(124)**	**11**
Property, plant & equipment	(209)	(403)	(694)	—	—	—
Intangible assets	(6,414)	(4,937)	(5,370)	—	—	—
Investment grants	(227)	(301)	(312)	—	—	—
Inventory valuation	(31)	(89)	141	—	—	—
Other items	76	(17)	9	—	—	—
Total deferred tax liabilities	**(6,805)**	**(5,747)**	**(6,226)**	**(1,058)**	**455**	**780**
Total deferred tax income (expense)	**—**	**—**	**—**	**(1,049)**	**331**	**791**

Deferred tax expense recognized in the current year Income statement was K€945 and the remaining movement of K€104 is related to currency translation adjustments.

The Group has unused tax losses and tax credits in an amount of K€69,031 for 2020 (2019: K€37,440; 2018: K€25,285) of which K€44,600 for 2020 (2019: K€25,172; 2018: K€15,592) relating to Materialise NV.

With respect to the unused tax losses of Materialise NV, no deferred tax assets have been recognized given that in view of the Belgian Patent Income Deduction and Innovation Income Deduction there is an uncertainty to which extent these tax losses will be used in future years. As from July 1, 2016, the Innovation Income Deduction replaces the former Patent Income Deduction. Under the grandfathering rule the Patent Income Deduction system can still be applied until June 30, 2021. The Belgian Patent Income Deduction allows companies to deduct 80% of the qualifying gross patent income from the taxable basis. Under the Innovation Income Deduction system, companies can deduct up to 85% of their net innovation income from the taxable basis. Based on its analysis, in 2020 the Company has assessed that no deferred tax asset and unused Innovation Income Deduction should be accounted for with respect to its unused tax losses and unused Innovation Income Deduction in Belgium.

With respect to the net tax losses of the other entities in the Group no deferred taxes have been recognized in 2020 (2019: K€0; 2018: K€0). The deferred tax liability of K€6,805 as at December 31, 2020 mainly relates to the intangibles that have been recognized in connection with business combinations (ACTech and RSPrint).

Relationship between Tax Expense and Accounting Profit

	For the year ended December 31		
in 000€	**2020**	**2019***	**2018**
Profit (loss) before taxes	(8,221)	4,239	3,452
Income tax at statutory rate of 25% (2019-2018: 29.58%)	2,045	(1,254)	(1,021)
Effect of different local tax rate	529	63	166
Tax adjustments to the previous period	(231)	(367)	80
Non-deductible expenses	(584)	(554)	(1,141)
Research and development tax credits & patent income deduction	375	179	337
Non recognition of deferred tax asset	(723)	(1,579)	(546)
Recognition of deferred tax assets on previous year's tax losses	—	119	653
Non-taxable income	503	925	606
Use of previous year's tax losses and tax credits for which no deferred tax assets was recognized	135	—	—
Taxes on other basis	(993)	—	280
Other	(107)	(127)	161
Income tax benefit (expense) as reported in the consolidated income statement	**949**	**(2,595)**	**(425)**

* The year 2019 has been restated to reflect the final accounting of the business combination with Engimplan. See additional information in Notes 2 and 4.

23 Earnings per share

Basic earnings per share amounts are calculated by dividing the net profit (loss) for the year attributable to ordinary equity holders of the parent company by the weighted average number of ordinary shares outstanding during the year.

Diluted earnings per share amounts are calculated by dividing the net profit (loss) attributable to ordinary equity holder of the parent company by the weighted average number of ordinary shares outstanding during the year plus the weighted average number of ordinary shares that would be issued on conversion of all warrants and the weighted average number of ordinary shares that would be issued on conversion of the convertible debt. If there is a net loss after taxes, the number of diluted shares is equal to the basic shares.

The net profit (loss) for the year used for the basic and diluted earnings per share are reconciled as follows:

in 000€	For the year ended December 31		
	2020	2019*	2018
Net profit (loss) attributable to ordinary equity holders of the parent for basic earnings	**(7,124)**	**1,586**	**3,027**
Interest on convertible bonds	—	50	50
Net profit (loss) attributable to ordinary equity holders of the parent adjusted for the effect of dilution	**(7,124)**	**1,636**	**3,077**

* The year 2019 has been restated to reflect the final accounting of the business combination with Engimplan. See additional information in Notes 2 and 4.

The warrants are anti-dilutive as per December 31, 2020 given the net loss for the year. The convertible bond has been converted in shares as per October 9, 2020. We refer to Note 13. The convertible bonds and the warrants are dilutive as per December 31, 2019 and 2018. We refer to Notes 14 and 15 for information on the number of instruments that could potentially be dilutive but which were not considered in the calculation above.

The following reflects the share data used in the basic and diluted earnings per share computations:

in 000	For the year ended December 31		
	2020	2019	2018
Weighted average number of ordinary shares for basic earnings per share	**53,364**	**52,915**	**49,806**
Effect of dilution:			
Share options	—	563	382
Convertible loan	—	509	509
Weighted average number of ordinary shares adjusted for effect of dilution	**53,364**	**53,987**	**50,697**

The earnings per share are as follows:

	For the year ended December 31		
	2020	2019	2018
Earnings per share attributable to the owners of the parent			
Basic	(0.13)	0.03	0.06
Diluted	(0.13)	0.03	0.06

24 Commitments and contingent liabilities

Operating lease commitments

The Group had operating lease commitments mainly related to cars and equipment until 2018 which were recognized on the balance sheet as of January 1, 2019 following the adoption of IFRS 16.

in 000€	As of December 31, 2020	2019	2018
Within one year	—	—	2,053
Between one and three years	—	—	2,302
Between four and five years	—	—	785
More than five years	—	—	302
Total	**—**	**—**	**5,442**

The total lease payments, which relate to low-value and short term lease as per IFRS 16 for which the exemption was applied as of January 1st, 2019, recognized in the consolidated income statement are K€554 in 2020 (2019: K€725). The total lease payments for 2018 amounted to K€2,956, prior to the adoption of IFRS 16 as from January 1, 2019.

Finance lease commitments (only applicable to 2018)

The Group has finance leases for the building and various other items of plant and equipment. Future minimum lease payments under finance lease with the present value of the net minimum lease payments are as follows:

	December 31, 2020		December 31, 2019		December 31, 2018	
in 000€	Minimum lease payments	Present value of payments	Minimum lease payments	Present value of payments	Minimum lease payments	Present value of payments
Within one year	—	—	—	—	2,876	2,829
Between one and three years	—	—	—	—	3,398	3,236
Between four and five years	—	—	—	—	655	604
More than five years	—	—	—	—	149	140
Total	**—**	**—**	**—**	**—**	**7,078**	**6,809**
Less finance charges	—	—	—	—	(269)	—
Present value of minimum lease payments	—	—	—	—	6,809	6,809

Mortgages and pledges

The Group has several loans secured by a mortgage on the building. The carrying value of related property, plant & equipment (including buildings under construction) is K€27,638 (2019: K€29,154; 2018: K€30,853). The total outstanding mortgages and pledges are K€105,610 in 2020 (2019: K€77,849; 2018: K€21,142).

Included in the above, the Group also has pledges on the business goodwill ("fonds de commerce") of the Company for a total amount of K€69,300 in 2020 (2019: K€36,992; 2018: K€70,300) and pledges on other fixed assets for a total amount of K€3,290 (2019: K€3,301; 2018: K€21,142).

Other commitments

The Group has outstanding non-cancellable contracts with a future commitment of K€6,384 at December 31, 2020 (2019: K€11,640; 2018: K€6,383), mainly related to purchase commitment for raw materials. For property, plant & equipment, we have no committed expenditures as per December 31, 2020 (2019: K€0; 2018: K€0).

Contingent liabilities

The Group is currently involved in a legal proceeding with Dentsply Implants NV regarding the alleged wrongful termination of a supply agreement we entered into with Dentsply Implants NV in 2010. The court of first instance ruled in favor of Dentsply Implants NV that Materialise has wrongfully terminated the relationship. Materialise has appealed this decision before the court pronounced on the monetary damages. The amount of damages which Dentsply Implants NV is claiming is € 2.7 million. While Materialise is confident that the first instance decision will be overruled, Materialise believes that, in the event that the first instance decision would be confirmed, the amount of monetary damages that Materialise would be exposed to will not have a material adverse effect on our business, financial position or results of operations.

Apart from the case set out below, the Group is currently not a party to any other legal or arbitration proceedings, which, in the opinion of the management, is likely to have or could reasonably possibly have a material adverse effect on the business, financial position or results of operations. As a result management concluded that no provision is required.

In addition, on May 6, 2020, we received a written notice and request for indemnification from Zimmer Biomet, which had been named as a defendant in a patent infringement suit filed by Osteoplastics, LLC on March 20, 2020 in the United States District Court for the District of Delaware. Zimmer Biomet based its request for indemnification on the terms of its license and distribution agreement with us. The complaint alleges infringement by Zimmer Biomet of four U.S. patents. The allegedly infringing products include certain instruments allegedly manufactured with certain of our software. The litigation is currently in the early stages of discovery and the case is scheduled for trial in October 2022. We have entered into a cost-sharing agreement with Zimmer Biomet pursuant to which we have exercised our right to assume and control the defense of the action related to the products covered by our indemnity obligations. We have also filed petitions requesting a review of the patents asserted by Osteoplastics by the U.S. Patent and Trademark Office, as well as other patents asserted by Osteoplastics in certain other actions brought against third party defendants. We believe there are meritorious defenses to the complaint and intend to contest it vigorously. However, an adverse resolution of this litigation could have an adverse effect on our results of operations, financial condition or cash flows in the period in which the litigation is resolved. No amounts have been accrued for this loss contingency.

25 Risks

The Group is mainly exposed to liquidity risk, interest rate risk and credit risk.

Foreign exchange risk

The Group transacts business globally and is subject to risks associated with fluctuating foreign exchange rates. The geographic areas outside of the Eurozone to which it sells its products and services are generally not considered to be highly inflationary. In the years ended December 31, 2020, 2019 and 2018, 35%, 29% and 30% of our revenue, respectively, were derived from sales in a currency different from the euro. Receivables denominated in a foreign currency are initially recorded at the exchange rate at the transaction date and subsequently re-measured in euro based on period-end exchange rates. Transaction gains and losses that arise from exchange rate fluctuations are charged to income.

The Group has primarily exposure to the USD, GBP, BRL, PLN and JPY as foreign currency. The exposure on MYR and CZK is limited. There is only a limited portion of turnover in local currency

If the USD (rate for K€0 EUR) would have appreciated by 10%, the net result would have been K€1,854 higher, excluding the effect of the cash and term accounts held in USD. If the USD (rate for K€0 EUR) would have depreciated by 10%, the net result would have been K€1,686 lower, excluding the effect of the cash and term accounts held in USD.

To limit the exposure to foreign currency rate fluctuations on GBP and JPY, the Group has entered into currency rate swaps as of 2017. As of December 31, 2020 the Group had hedge agreements in place for KGBP700 and million JPY 75 . We refer to note 20 for the related fair value of these derivatives.

Liquidity risk

The liquidity risk is that the Group may not have sufficient cash to meet its payment obligations. This risk is countered by day-by-day liquidity management at the corporate level. The Group has historically entered into financing and lease agreements with financial institutions to finance significant projects and certain working capital requirements. The Group has no longer undrawn lines of credit at December 31, 2020 (2019: K€0; 2018: K€26,040).

On December 20, 2017, the European Investment Bank (EIB) and Materialise entered into a finance contract to support Materialise’s ongoing research and development programs for growth from 2017 to 2020. The contract provides a credit of up to € 35.0 million drawable in two tranches. The first tranche could not exceed € 25.0 million and could be drawn during the first year of the contract. The Group actually has drawn € 10.0 million of this first tranche in the course of 2018. The second tranche of € 25.0 million was drawn in July 2019. The duration of the loan will be between six to eight years starting from the disbursement of the respective tranches, and includes a two-year loan reimbursement grace period. Loans under the contract will be made at a fixed rate, based on the Euribor rate at the time of the borrowing, plus a variable margin. The interest rate for the first tranche is initially equal to 2.4% . The interest rate for the second tranche is initially 2.72% and varies in function of certain EBITDA levels and debt ratios. The contract contains customary security, covenants and undertakings.

The range of contracted obligations are as follows (incl. interests) :

in 000€	Less than 1 year	2 to 3 years	4-5 years	More than 5 years	Total
At December 31, 2020					
Loans & borrowings	15,335	36,819	34,928	23,565	110,647
Lease liabilities	3,831	4,850	1,570	1,420	11,671
Trade payables	17,698	—	—	—	17,698
Other current liabilities and advances received	3,798	—	—	—	3,798
Total	**40,662**	**41,669**	**36,498**	**24,985**	**143,814**

	Less than 1 year	2 to 3 years	4-5 years	More than 5 years	Total
At December 31, 2019					
Loans & borrowings	14,300	33,034	41,672	34,447	123,453
Lease liabilities	3,685	4,907	1,040	720	10,352
Trade payables	18,517	—	—	—	18,517
Other current liabilities	4,063	—	—	—	4,063
Total	**40,565**	**37,941**	**42,712**	**35,167**	**156,385**

	Less than 1 year	2 to 3 years	4-5 years	More than 5 years	Total
At December 31, 2018					
Loans & borrowings	14,491	42,100	33,636	23,870	114,097
Trade payables	18,667	—	—	—	18,667
Other current liabilities	2,267	—	—	—	2,267
Total	**35,425**	**42,100**	**33,636**	**23,870**	**135,031**

Interest rate risk

Although the Group mainly has loans outstanding with a fixed interest rate, some of the loans have been contracted with variable interest rates. The most significant loans with variable interest rates have been secured by means of a variable to fixed interest rate swap. We therefore believe that the Group is not subject to immediate changes in interest rates. With respect to the interest rate swaps, we refer to note 20.

Credit risk

Credit risk is the risk that third parties may not meet their contractual obligations resulting in a loss for the Group. The Group is exposed to credit risk from its operating activities (primarily trade receivables) and from its financing activities, which are mainly deposits with financial institutions. The Group limits this exposure by contracting with credit-worthy business partners or with financial institutions which meet high credit rating requirements. In addition, the portfolio of receivables is monitored on a continuous basis.

Trade receivables and contracts in progress

Customer credit risk is managed by each business unit subject to the Group's established policy, procedures and controls relating to customer credit risk management.

An impairment analysis is performed at each reporting date per company and using a provision matrix per company to measure expected credit losses. The provision rates are based on days past due for groupings of various customer segments with similar loss patterns (i.e., by legal entity).

The calculation reflects the probability-weighted outcome, the time value of money and reasonable and supportable information that is available at the reporting date about past events, current conditions and forecasts of future economic conditions. Generally, trade receivables are written-off if past due for more than one year and are not subject to enforcement activity. The maximum exposure to credit risk at the reporting date is the carrying value of each class of financial assets at amortized cost or fair value through OCI as disclosed in Note 20. The Group does not hold collateral as security.

The Group evaluates the concentration of risk with respect to trade receivables as low, as its customers are located in several jurisdictions and industries and operate in largely independent markets.

Set out below is the information about the credit risk exposure on the Group's trade receivables using a provision matrix:

in 000€	Total	Non-due	Less than 30 days	31-60 days	61-90 days	91-180 days	More than 181 days
December 31, 2020	30,871	25,707	3,176	858	423	327	380
December 31, 2019	40,977	31,528	4,924	2,094	733	981	717
December 31, 2018	36,891	26,208	5,395	1,479	931	1,512	1,366

Capital management

The primary objective of the Group's shareholders' capital management strategy is to ensure it maintains healthy capital ratios to support its business and maximize shareholder value. Capital is defined as the Group shareholder's equity.

The Group consistently reviews its capital structure and makes adjustments in light of changing economic conditions. The Group made no changes to its capital management objectives, policies or processes during the years ended December 31, 2020, 2019 and 2018.

26 Related party transactions

The compensation of key management personnel of the Group is as follows:

in 000€	For the year ended December 31 2020	2019	2018
Short-term employee benefits	2,302	2,394	2,334
Post-employment benefits	93	85	80
Total	**2,395**	**2,479**	**2,414**
Warrants granted	—	—	—
Warrants outstanding	108,905	359,266	557,935

The amounts disclosed in the table are the amounts recognized as an expense during the reporting period related to key management personnel (senior management and executive committee members). In the year ending December 31, 2020 the compensation to key management by means of share based payments amounts to K€37.

The following table provides the total amount of transactions that have been entered into with related parties for the relevant financial year:

in 000€	Sale of goods to	Purchases from	Depreciation	Interest expense	Right-of-Use Assets	Receivables	Lease liabilities	Other liabilities
Non-executive directors of the Group								
2020	—	85	—	28	—	—	—	—
2019	—	128	—	37	—	—	—	1,053
2018	—	123	—	51	—	—	—	1,038
Shareholders of the Group								
2020	—	2	—	7	—	29	—	158
2019	—	113	—	9	—	—	—	131
2018	—	123	—	10	—	—	—	261
Joint ventures								
2020	419	—	—	—	—	—	—	—
2019	1,431	—	—	—	—	1,279	—	—
2018	1,156	241	—	—	—	1,281	—	22
Non-controlling interests								
2020	—	—	—	—	—	—	—	—
2019	—	—	26	9	617	—	652	—
2018	—	—	—	—	—	—	—	—

Related party – Lunebeke NV / Ailanthus NV

Lunebeke NV is owned by a shareholder and director of the Group and was established on December 29, 2020 following a partial demerger of Ailanthus NV (a former related party of the Group that merged with Materialise NV subsequent to the partial demerger as explained in Note 13). The activities taken over by Lunebeke NV through the partial demerger of Ailanthus NV were taken over from Ailanthus NV with retro-active effect as of October 1st, 2020. The Group rents apartments on a regular basis from Lunebeke NV (Ailanthus NV up to September 30th, 2020) in order to host our employees from foreign subsidiaries who are visiting our headquarters in Leuven. Due to Covid, the total amount paid to Lunebeke NV (Ailanthus up to September 30th, 2020) for rent in 2020 was K€0 (2019: K€113; 2018: K€123).

Related party – Ex-shareholders of Engimplan (non-controlling interest)

The subsidiary Engimplan rents the office and production building from its ex-shareholders for an initial term of 10 years, with an extension option for an additional 10 years (assessed not to be reasonably certain to be exercised). The monthly lease payment amount to K€7. The lease has been accounted for under IFRS 16 resulting in a lease liability at December 31, 2020 of K€414.

Related party – Convertible debt

The Group has issued on October 28, 2013 1,000 convertible bonds for a total amount of K€1,000. The bonds have been fully subscribed by a member of our senior management. On October 9, 2020, all these convertible bonds were converted in 509,904 shares as explained in Note 13.

Joint ventures

As explained in Note 4, the Group executed a share purchase agreement dated November 9, 2020 and acquired the remaining 50% of the shares of RS Print Powered By Materialise (referred to as “RS Print”). Before this transaction, Materialise NV already had a 50% interest in RS Print.

27 Events subsequent to the statement of financial position date

Impact of coronavirus

As of the date of this report, we are unable to predict the duration and severity of the spread of the coronavirus and the political and economic responses thereto and, as a result, we are unable to assess with certainty its impact on our business and operations, results of operations, financial condition, cash flows and liquidity during 2021 and beyond.

Link3D

On April 9, 2021 Materialise entered into a call option agreement to acquire 100% of equity interests of US based Link3D Inc., an additive workflow and manufacturing execution systems (MES) company. An acquisition would extend Materialise's ability to help companies gain control of their manufacturing floor as they scale up their additive manufacturing (AM) capability into volume production and would allow Materialise to accelerate its roadmap to offer cloud-based access to its integrated software platform. An acquisition would also broaden Materialise's industrial customer base across North America, Europe and Asia Pacific, and offer Link3D customers a seamless connection to Materialise's Magics 3D print suite.

Under the terms of the agreement, the call option purchase price amounts to US$ 2 million. The call option can be exercised during the month of November of 2021. The call option exercise price in exchange for the 100% of the Link3D equity interests, equals the maximum amount of US$ 33.50 million against which the call option purchase price of US$ 2 million will be credited. In case Materialise elects not to exercise the call option, the option purchase price is not reimbursable.

On February 4, 2021 Materialise and Link3D entered into a Working Capital Loan Agreement pursuant to which Materialise loaned an aggregated amount of US$ 0.7 million to Link3D in the first quarter of 2021.

Simultaneously, to the call option agreement, Materialise and Link3D entered in an interim loan agreement, allowing Link3D to borrow additional funds up to US$ 1.8 million.

Ditto

Materialise holds convertible note receivables versus Ditto, a US based developer of virtual eyewear try-on platforms, which was announced in September 2020. We collaborate with Ditto to advance the digital transformation in the eyewear industry. In the frame of this collaboration, we have granted a convertible loan facility, carrying a capitalizing interest of 8%, to Ditto as disclosed under Note 10, of which Ditto drew K€ 2,892 as of December 31, 2020.

Because the business objectives that were defined as a condition for Ditto to continue to draw under the facility no longer met in 2021, we decided in April 2021 to only extend a portion of the remaining amount that was available under the credit facility to Ditto. We estimate that, as a result of the combination of the lower than forecasted revenues and the unavailability of the remaining credit facility, Ditto may need additional funding to finance its operations and we currently have no clear visibility as to whether Ditto will be able to access such additional financing. As a result, uncertainty has arisen about Ditto's capacity to reimburse the loan according to the terms of our agreement with them. Therefore, an impairment has been accounted for in the course of 2021 on our outstanding loan to Ditto including capitalized interest and 2021 fundings for a total amount of K€ 3,790. The amount includes the traches granted as per April 8, 2021. This impairment from an accounting perspective does not impact our continuing belief in the technology platform that Ditto has built and in the potential of the collaboration between Ditto and Materialise.

28 Overview of consolidated entities

Name	Country of incorporation	% equity interest* 2020	2019	2018
Materialise NV	Belgium	100%	100%	100%
Materialise France SAS	France	100%	100%	100%
Materialise GmbH	Germany	100%	100%	100%
Materialise Japan K.K.	Japan	100%	100%	100%
Materialise Czech Republic SRO	Czech Republic	100%	100%	100%
Materialise USA, LLC	United States	99%	99%	99%
Materialise UK Limited	United Kingdom	100%	100%	100%
OBL SAS	France	100%	100%	100%
Materialise Austria GmbH	Austria	100%	100%	100%
Materialise Malaysia SDN. Bhd.	Malaysia	100%	100%	100%
Materialise Ukraine LLC	Ukraine	100%	100%	100%
RapidFit NV	Belgium	83%	83%	83%
Meridian Technique Limited	United Kingdom	100%	100%	100%
OrthoView Holdings Limited	United Kingdom	100%	100%	100%
Materialise SA	Poland	100%	100%	100%
Materialise Colombia SAS	Colombia	100%	100%	100%
RSPRINT powered by Materialise NV	Belgium	100%	50%	50%
Materialise Shanghai Co.Ltd	China	100%	100%	100%
Engimplan Engenharia de Implante Industria & Comércio Ltda	Brazil	100%	75%	—
Engimplan Holding Ltda	Brazil	100%	100%	—
Materialise Limited	South-Korea	100%	—	—
Materialise Australia PTY Ltd	Australia	100%	100%	100%
Materialise S.R.L.	Italy	100%	100%	100%
ACTech GmbH	Germany	100%	100%	100%
ACTech Holding GmbH	Germany	100%	100%	100%
ACTech, Inc	United States	100%	100%	100%

* The overview provides the equity interest held as of 31 December of each respective year.
Materialise Limited (South Korea) was newly established October 30th, 2020.
For increasing equity share in RS Print and Engimplan, we refer to Note 4.
The entities Materialise Gm*bH, Gilching, Germany, ACTech Holding GmbH, Freiberg / Saxony, Germany and ACTech GmbH, Freiberg / Saxony, Germany, have taken advantage of the exemption regulations of § 264 (3) HGB (German Commercial Code) for the financial year ending December 31, 2019 and December 31, 2020.*
The entity Meridian Technique Limited (company number 03478202) has taken advantage of the exemption regulation from the requirements of the Act relating to the audit of accounts under section 479A of the Companies Act 2006 for the financial year ending December 31, 2020.

29 Non-GAAP Measures

EBITDA and Adjusted EBITDA is used in the Note 21 Segments as one of the basis of the Segments performance measurement. We calculate EBITDA as net profit plus income taxes, financial expenses (less financial income), depreciation and amortization, and share in loss of joint venture. Adjusted EBITDA is determined by adding back share-based compensation expenses, acquisition-related expenses of business combinations, impairments and fair value remeasurements due to business combinations to EBITDA.