INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Consolidated Financial Statements for the Years Ended December 31, 2021, 2020 and 2019

Consolidated income statements

in 000€, except per share data	Notes	For the year ended December 31, 2021	2020*	2019
Revenue	22.1	205,450	170,449	196,679
Cost of sales	22.2	(87,278)	(76,446)	(87,052)
Gross profit		**118,172**	**94,003**	**109,627**
Research and development expenses	22.3	(26,891)	(27,104)	(23,348)
Sales and marketing expenses	22.4	(49,151)	(44,636)	(52,989)
General and administrative expenses	22.5	(33,315)	(29,337)	(31,786)
Net other operating income	22.6	3,402	2,436	5,432
Operating profit (loss)		**12,217**	**(4,638)**	**6,936**
Financial expenses	22.8	(4,101)	(5,995)	(3,682)
Financial income	22.9	5,620	2,452	1,377
Share in loss of joint venture, after tax	8	–	(39)	(392)
Profit (loss) before taxes		**13,736**	**(8,221)**	**4,239**
Income tax benefit/(expense)*	22.1	(591)	1,028	(2,595)
Net profit (loss) for the year		**13,145**	**(7,193)**	**1,644**
Net profit (loss) attributable to:				
The owners of the parent		13,154	(7,044)	1,586
Non-controlling interest		(9)	(148)	58
Earnings per share attributable to the owners of the parent				
Basic	23	0.23	(0.13)	0.03
Diluted	23	0.23	(0.13)	0.03

* The year 2020 has been adjusted retrospectively to reflect the final accounting of the business combination with Materialise Motion. See additional information in Notes 2 and 4.

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated statements of comprehensive income

in 000€		For the year ended December 31, 2021	2020*	2019
Net profit (loss) for the year*		**13,145**	**(7,193)**	**1,644**
Other comprehensive (loss)/ income				
Items that are or may be reclassified subsequently to profit or loss				
Exchange differences on translation of foreign operations		1,565	(6,176)	244
Items that will not be reclassified to profit or loss				
Fair value adjustment through OCI - Equity instruments	10	(3,443)	489	–
Other comprehensive (loss)/ income, net of taxes		**(1,878)**	**(5,687)**	**244**
Total comprehensive (loss)/ income for the year, net of taxes		**11,267**	**(12,880)**	**1,888**
Total comprehensive (loss)/ income attributable to:				
The owners of the parent		11,276	(11,817)	2,041
Non-controlling interest		(9)	(1,063)	(153)

* The year 2020 has been adjusted retrospectively to reflect the final accounting of the business combination with Materialise Motion. See additional information in Notes 2 and 4.

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated statements of financial position

in 000€	Notes	As of December 31, 2021	2020*	2019
Assets				
Non-current assets				
Goodwill*	5	18,726	18,599	19,607
Intangible assets	6	31,668	32,981	27,395
Property, plant & equipment	7	84,451	88,267	91,006
Right-of-use assets	7	9,054	10,996	10,586
Investments in joint ventures	8	–	–	39
Deferred tax assets	22.10	227	201	192
Investments in convertible loans	10	3,560	6,203	2,750
Investments in non-listed equity instruments	10	399	3,842	3,046
Other non-current assets	10	7,519	4,093	3,594
Total non-current assets		**155,604**	**165,182**	**158,215**
Current assets				
Inventories and contracts in progress	9	11,295	10,043	12,696
Trade receivables	11	41,541	30,871	40,977
Other current assets	10	8,940	8,290	8,616
Cash and cash equivalents	12	196,028	111,538	128,897
Total current assets		**257,804**	**160,742**	**191,186**
Total assets		**413,408**	**325,924**	**349,401**

* The year 2020 has been adjusted retrospectively to reflect the final accounting of the business combination with Materialise Motion. See additional information in Notes 2 and 4.

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated statements of financial position

in 000€	Notes	As of December 31, 2021	2020*	2019
Equity and liabilities				
Equity				
Share capital	13	4,489	4,096	3,066
Share premium	13	233,872	141,274	138,090
Retained earnings*	13	965	(7,316)	(272)
Other reserves	13	(6,749)	(4,871)	(1,378)
Equity attributable to the owners of the parent		**232,577**	**133,183**	**139,506**
Non-controlling interest	13	1	–	3,276
Total equity		**232,578**	**133,183**	**142,782**
Non-current liabilities				
Loans & borrowings	15	72,637	90,502	104,673
Lease liabilities	15	5,268	7,086	6,427
Deferred tax liabilities*	22.10	4,371	4,983	5,747
Deferred income	18	4,952	5,327	5,031
Other non-current liabilities	16	2,167	398	696
Total non-current liabilities		**89,395**	**108,295**	**122,574**
Current liabilities				
Loans & borrowings	15	17,849	13,984	13,389
Lease liabilities	15	3,353	3,539	3,449
Trade payables		20,171	17,698	18,517
Tax payables	17	783	974	3,363
Deferred income	18	33,307	29,555	27,641
Other current liabilities	19	15,972	18,695	17,686
Total current liabilities		**91,435**	**84,445**	**84,045**
Total equity and liabilities		**413,408**	**325,924**	**349,401**

* The year 2020 has been adjusted retrospectively to reflect the final accounting of the business combination with Materialise Motion. See additional information in Notes 2 and 4.

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated statements of changes in equity

in 000€	Notes	Attributable to the owners of the parent						
		Share capital	Share premium	Retained earnings	Other reserves	Total	Non-controlling interest	Total equity
At January 1, 2021 as reported*		**4,096**	**141,274**	**(7,395)**	**(4,871)**	**133,104**	**–**	**133,104**
Completion of accounting for Materialise Motion business combination	4	–	–	79	–	79	–	79
At January 1, 2021 As adjusted*	2	**4,096**	**141,274**	**(7,316)**	**(4,871)**	**133,183**	**–**	**133,183**
Net profit (loss) for the year		–	–	13,154	–	13,154	(9)	13,145
Other comprehensive income (loss)		–	–	–	(1,878)	(1,878)	–	(1,878)
Total comprehensive income (loss)		**–**	**–**	**13,154**	**(1,878)**	**11,276**	**(9)**	**11,267**
Capital increase through public offering	13	371	90,235	(4,873)	–	85,733	–	85,733
Capital increase through exercise of warrants	13	22	2,322	–	–	2,344	–	2,344
Incorporation NCI Tianjin Zhenyuan Materialise Medical Technology Ltd	13	–	–	–	–	–	10	10
Equity-settled share-based payment expense	14	–	41	–	–	41	–	41
At December 31, 2021		**4,489**	**233,872**	**965**	**(6,749)**	**232,577**	**1**	**232,578**

* The year 2020 has been adjusted retrospectively to reflect the final accounting of the business combination with Materialise Motion. See additional information in Notes 2 and 4.

The accompanying notes form an integral part of these consolidated financial statements.

in 000€	Notes	Attributable to the owners of the parent						
		Share capital	Share premium	Retained earnings	Other reserves	Total	Non-controlling interest	Total equity
At January 1, 2020		**3,066**	**138,090**	**(211)**	**(1,378)**	**139,567**	**3,107**	**142,675**
Net profit (loss) for the year		–	–	(7,124)	–	(7,124)	(148)	(7,272)
Other comprehensive income (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		–	–	–	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	Attributable to the owners of the parent						
		Share capital	Share premium	Retained earnings	Other reserves	Total	Non-controlling interest	Total equity
At January 1, 2019		**3,050**	**136,637**	**(1,857)**	**(1,841)**	**135,989**	**–**	**135,989**
Net profit (loss) for the year		–	–	1,646	–	1,646	78	1,724
Other comprehensive income (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		**3,066**	**138,090**	**(211)**	**(1,378)**	**139,567**	**3,107**	**142,675**

Consolidated cash flow statements

in 000€	Notes	For the year ended December 31, 2021	2020*	2019
Operating activities				
Net profit (loss) for the year*		13,145	(7,193)	1,644
Non-cash and operational adjustments				
Depreciation of property, plant & equipment	7	15,574	14,932	14,419
Amortization of intangible assets	6	4,975	4,742	4,859
Impairment of goodwill and intangible assets	5; 6	177	4,606	–
Share-based payment expense	14	(1,036)	752	302
Loss (gain) on disposal of property, plant & equipment	7	210	10	165
Movement in provisions		99	137	138
Movement in reserve for bad debt and slow moving inventory		255	516	121
Financial income	22.9	(5,620)	(2,300)	(1,377)
Financial expense	22.8	4,101	5,821	3,682
Impact of foreign currencies		40	61	(176)
Share in loss of joint venture (equity method)	8	–	39	392
Income taxes and deferred taxes*	22.10	591	(1,049)	2,595
Fair value adjustment	4; 10	–	(1,093)	–
Other		–	–	(245)
Working capital adjustment and income tax paid				
Decrease (increase) in trade receivables and other current assets		(10,920)	9,205	216
Decrease (increase) in inventories and contracts in progress		(1,423)	2,724	(745)
Increase in trade payables and other payables		6,453	583	4,196
Income tax paid		(1,152)	(2,618)	(2,139)
Interest received		376	103	355
Net cash flow from operating activities		**25,845**	**29,978**	**28,402**

* The year 2020 has been adjusted retrospectively to reflect the final accounting of the business combination with Materialise Motion. See additional information in Notes 2 and 4.

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated cash flow statements

in 000€	Notes	For the year ended December 31, 2021	2020*	2019
Investing activities				
Purchase of property, plant & equipment	7	(7,934)	(11,032)	(13,472)
Purchase of intangible assets	6	(3,788)	(6,618)	(2,193)
Proceeds from the sale of property, plant, equipment and intangibles (net)		462	552	278
Acquisition of subsidiary (net of cash)	4	(875)	(8,031)	(6,331)
Investments in joint-ventures / shares	8	–	–	(875)
Convertible loan granted	10	(999)	(2,836)	(2,743)
Other equity investments in non-listed entities	10	–	(300)	(281)
Interest received		–	–	–
Net cash flow used in investing activities		**(13,134)**	**(28,265)**	**(25,617)**
Financing activities				
Proceeds from loans & borrowings	15	–	–	29,000
Repayment of loans & borrowings	15	(14,277)	(13,736)	(12,126)
Repayment of leases	15	(3,775)	(3,640)	(5,283)
Capital increase in parent company	13	88,117	4,112	1,268
Direct attributable expense capital increase	13	–	–	–
Interest paid		(2,326)	(2,268)	(2,286)
Other financial income (expense), net		3,417	(1,356)	208
Net cash flow from financing activities		**71,156**	**(16,888)**	**10,781**
Net increase/(decrease) of cash and cash equivalents		**83,867**	**(15,175)**	**13,566**
Cash and cash equivalents at beginning of the year	12	111,538	128,897	115,506
Exchange rate differences on cash and cash equivalents		624	(2,184)	(175)
Cash and cash equivalents at end of the year	12	196,028	111,538	128,897

* The year 2020 has been adjusted retrospectively to reflect the final accounting of the business combination with Matrialise Motion. See additional information in Notes 2 and 4.

The accompanying notes 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 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.

We are a leading provider of additive manufacturing and medical software and of sophisticated 3D printing services. Our products and services are offered through a market oriented organization that is active across three principal market segments: (i) Materialise Software, (ii) Materialise Medical, and (iii) Materialise Manufacturing. We sell our products and services in Europe, the Americas, Africa and Asia-Pacific.

The consolidated financial statements of the Group for the year ended December 31, 2021 were approved and authorized for issue on May 13, 2022 in accordance with a resolution of the Company's board of directors.

2 Basis of preparation

The consolidated financial statements of the Group for the three years ended December 31, 2021, 2020 and 2019 are 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 "EU-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 and the share appreciation rights 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.

Impact of COVID-19 on our Business

In 2020, the vast majority of the businesses addressed by our segments were adversely affected by the effects of the COVID-19 pandemic, which had a negative impact on our results of operations. These effects have faded out in 2021, although we continued to experience a negative impact from the COVID-19 pandemic in certain business lines that have not yet recovered in full. In particular, during the first half of 2021, order intake levels from automotive, aerospace, and certain industrial clients in our Materialise Software and Materialise Manufacturing segments remained below the pre-pandemic 2019 levels. To-date, we have not incurred significant bad debt or major delays in trade payments as a result of the ongoing COVID-19 pandemic.

New standards, interpretations and amendments adopted by the Group

The following amendments and interpretations issued by the IASB and IFRIC and adopted by the EU apply for the first time in 2021, but do not have a significant impact on the consolidated financial statements of the Group.

- Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16 Interest Rate Benchmark Reform – Phase 2 (issued on 27 August 2020)
- Amendments to IFRS 4 Insurance Contracts – deferral of IFRS 9 (issued on 25 June 2020)
- Amendments to IFRS 16 Leases: Covid-19-Related Rent Concessions beyond 30 June 2021 (issued on 31 March 2021) – effective as from 1 April 2021

A number of new standards, amendments to standards and interpretations are not yet effective for the year ended 31 December 2021, and have not been applied in preparing these consolidated financial statements. The amendments are not expected to have a material impact on the Group's consolidated financial statements.

Amendments to IAS 1 Presentation of Financial statements: Classification of Liabilities as Current or Non-current, issued on 23 January 2020 and not yet adopted by the EU, clarify a criterion in IAS 1 for classifying a liability as non-current: the requirement for an entity to have the right to defer settlement of the liability for at least 12 months after the reporting period.

The amendments:

- specify that an entity's right to defer settlement must exist at the end of the reporting period;
- clarify that classification is unaffected by management's intentions or expectations about whether the entity will exercise its right to defer settlement;
- clarify how lending conditions affect classification; and

— clarify requirements for classifying liabilities an entity will or may settle by issuing its own equity instruments.

On July 15, 2020, the IASB issued Classification of Liabilities as Current or Non-current — Deferral of Effective Date (Amendment to IAS 1) deferring the effective date of the January 2020 amendments to IAS 1 by one year to annual reporting periods beginning on or after January 1, 2023 with early application permitted.

The IASB has published a new exposure draft on the topic on 19 November 2021.

Amendments to IFRS 3 Business Combinations; IAS 16 Property, plant and Equipment; IAS 37 Provisions, Contingent Liabilities and Contingent Assets as well as Annual improvements, issued on 14 May 2020 and adopted by the EU, include several narrow-scope amendments which are changes that clarify the wording or correct minor consequences, oversights or conflicts between requirements in the Standards:

— **Amendments to IFRS 3 Business Combinations** update a reference in IFRS 3 to the Conceptual Framework for Financial Reporting without changing the accounting requirements for business combinations.
— **Amendments to IAS 16 Property, Plant and Equipment** prohibit a company from deducting from the cost of property, plant and equipment amounts received from selling items produced while the company is preparing the asset for its intended use. Instead, a company will recognize such sales proceeds and related cost in profit or loss. The amendments also clarify that testing whether an item of PPE is functioning properly means assessing its technical and physical performance rather than assessing its financial performance.
— **Amendments to IAS 37 Provisions, Contingent Liabilities and Contingent Assets** specify which costs a company includes when assessing whether a contract will be loss-making. The amendments clarify that the 'costs of fulfilling a contract' comprise both: the incremental costs; and an allocation of other direct costs.
— **Annual Improvements to IFRS Standards 2018–2020** make minor amendments to IFRS 1 First-time Adoption of International Financial Reporting Standards, IFRS 9 Financial Instruments, IAS 41 Agriculture and the Illustrative Examples accompanying IFRS 16 Leases.

These amendments are effective for annual periods beginning on or after 1 January 2022 with early application permitted.

Amendments to IAS 1 Presentation of Financial Statements and IFRS Practice Statement 2: Disclosure of Accounting policies, issued on 12 February 2021 and adopted by the EU, include narrow-scope amendments to improve accounting policy disclosures so that they provide more useful information to investors and other primary users of the financial statements. The amendments to IAS 1 require companies to disclose their material accounting policy information rather than their significant accounting policies. The amendments to IFRS Practice Statement 2 provide guidance on how to apply the concept of materiality to accounting policy disclosures.

These amendments are effective for annual periods beginning on or after 1 January 2023 with early application permitted.

Amendments to IAS 8 Accounting policies, Changes in Accounting Estimates and Errors: Definition of Accounting Estimates, issued on 12 February 2021 and adopted by the EU, clarify how companies should distinguish changes in accounting policies from changes in accounting estimates. The distinction is important because changes in accounting estimates are applied prospectively only to future transactions and other future events, but changes in accounting policies are generally also applied retrospectively to past transactions and other past events.

These amendments are effective for annual periods beginning on or after 1 January 2023 with early application permitted.

Amendments to IAS 12 Income Taxes: Deferred Tax related to Assets and Liabilities arising from a Single Transaction, issued on 7 May 2021 and not yet adopted by the EU, clarifies how companies should account for deferred tax on transactions such as leases and decommissioning obligations. IAS 12 Income Taxes specifies how a company accounts for income tax, including deferred tax, which represents tax payable or recoverable in the future. In specified circumstances, companies are exempt from recognizing deferred tax when they recognize assets or liabilities for the first time. Previously, there had been some uncertainty about whether the exemption applied to transactions such as leases and decommissioning obligations—transactions for which companies recognize both an asset and a liability. The amendments clarify that the exemption does not apply and that companies are required to recognize deferred tax on such transactions. The aim of the amendments is to reduce diversity in the reporting of deferred tax on leases and decommissioning obligations.

These amendments are effective for annual periods beginning on or after 1 January 2023 with early application permitted.

Retrospective adjustments in the reporting *year 2020*

The Group has adjusted retrospectively the reporting year 2020 for the following impacts:

- Our consolidated financial statements for the year ended December 31, 2020 appearing in our Annual Report on Form 20-F, as filed with the U.S. Securities and Exchange Commission on April 30, 2021 (the “FY 2020 Form 20-F”), included provisional accounting for the Materialise Motion (formerly RS Print) business combination. At approval of our 2020 consolidated financial statements by the Board, the deferred tax analysis was not yet finalized.

  As of October 2021, we completed the analysis of deferred taxes in respect of the Materialise Motion business combination, with corresponding adjustments to goodwill and deferred taxes. The impact has been accounted for as retrospective adjustments to our consolidated statement of financial position as of December 31, 2020 and our consolidated income statement for the year ended December 31, 2020. The adjustment results in a decrease in deferred tax liabilities of K€ 1,822, an increase in deferred income tax benefit of K€ 79, a decrease in goodwill of K€ 1,743 and an increase in consolidated reserves of K€ 79.

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

The impact of the retrospective adjustements on the consolidated statement of financial position as of December 31, 2020 and the consolidated income statement for the year ended December 31, 2020 is as follows:

	As of December 31, 2020		
Retrospective adjustment impact on statement of financial position in 000€	**As previously reported**	**IFRS 3 Materialise Motion**	**As adjusted**
Assets			
Non-current assets			
Goodwill	20,342	(1,743)	18,599
Intangible assets	32,981	–	32,981
Property, plant & equipment	88,267	–	88,267
Right-of-use assets	10,996	–	10,996
Investments in joint ventures	–	–	–
Deferred tax assets	201	–	201
Investments in convertible loans	6,203	–	6,203
Investments in non-listed equity instruments	3,842	–	3,842
Other non-current assets	4,093	–	4,093
Total non-current assets	**166,925**	**(1,743)**	**165,182**
Current assets			
Inventories and contracts in progress	10,043	–	10,043
Trade receivables	30,871	–	30,871
Other current assets	8,290	–	8,290
Cash and cash equivalents	111,538	–	111,538
Total current assets	**160,742**	**–**	**160,742**
Total assets	**327,667**	**(1,743)**	**325,924**

	As of December 31, 2020		
	As previously reported	**IFRS 3 Materialise Motion**	**As adjusted**
Equity and liabilities			
Equity			
Share capital	4,096	–	4,096
Share premium	141,274	–	141,274
Consolidated reserves	(7,395)	79	(7,316)
Other comprehensive loss	(4,871)	–	(4,871)
Equity attributable to the owners of the parent	**133,104**	**79**	**133,183**
Non-controlling interest	–	–	–
Total equity	**133,104**	**79**	**133,183**
Non-current liabilities			
Loans & borrowings	90,502	–	90,502

Lease liabilities	7,086	–	7,086
Deferred tax liabilities	6,805	(1,822)	4,983
Deferred income	5,327	–	5,327
Other non-current liabilities	398	–	398
Total non-current liabilities	**110,118**	**(1,822)**	**108,296**
Current liabilities			
Loans & borrowings	13,984	–	13,984
Lease liabilities	3,539	–	3,539
Trade payables	17,698	–	17,698
Tax payables	974	–	974
Deferred income	29,555	–	29,555
Other current liabilities	18,695	–	18,695
Total current liabilities	**84,445**	**–**	**84,445**
Total equity and liabilities	**327,667**	**(1,743)**	**325,924**

	For the year ended December 31, 2020		
Retrospective adjustment impact on income statement in 000€	**As previously reported**	**IFRS 3 Materialise Motion**	**As adjusted**
Revenue	170,449	–	170,449
Cost of sales	(76,446)	–	(76,446)
Gross profit	**94,003**	**–**	**94,003**
Research and development expenses	(27,104)	–	(27,104)
Sales and marketing expenses	(44,636)	–	(44,636)
General and administrative expenses	(29,337)	–	(29,337)
Net other operating income / (expenses)	2,436	–	2,436
Operating profit (loss)	**(4,639)**	**–**	**(4,639)**
Financial expenses	(5,995)	–	(5,995)
Financial income	2,453	–	2,453
Share in loss of joint venture	(39)	–	(39)
Loss before taxes	**(8,221)**	**–**	**(8,221)**
Income taxes	949	79	1,028
Net loss for the year	**(7,272)**	**79**	**(7,193)**
Net loss attributable to:			
The owners of the parent	(7,124)	79	(7,045)
Non-controlling interest	(148)	–	(148)

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 November 9, 2020, the Group acquired full ownership of Materialise Motion (formerly RS Sprint), and Materialise Motion is included in the consolidated financial statements of the Group as from that date, after having been accounted for as a joint venture under the equity method up to November 8, 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. As of December 31, 2021, the only non-controlling interest relates to Tianjin Zhenyuan Materialise Medical Technology Ltd., a subsidiary that Materialise, together with Zhenyuan (Tianjin) Medical Appliances Technology Co., Ltd., incorporated on June 22, 2021. Materialise holds 51% of the shares of this subsidiary. 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 of the previous day. 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 exceeds 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

As at December 31, 2021, Materialise has no investments in joint ventures.

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 reasonably certain that 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 reasonably certain that 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 reasonably certain that 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 € 5k). 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 research and development expenditure. 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 to 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 has the following financial assets classified as financial assets at fair value through profit or loss:

- derivatives, also including the option acquired by the Group to purchase all shares of Link3D as disclosed in Note 4 and Note 10;
- convertible loan granted to the company Fluidda 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 transactions 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 per the requirements of IFRS 15.

- 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 spent.

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.

Most of the perpetual software licenses 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 are satisfied over time for the entire arrangements and are 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 or at a point in time, depending whether one of the IFRS 15.35 criteria for performance obligations to be satisfied over time is met or not. In case of recognition over time, revenue is recognized either on time and material basis or on the stage of completion of each service when the percentage 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.

In case of recognition at a point in time revenue is recognized when control over the product is transferred to the customer.

Contracts with multiple performance obligations

The Group has entered into a number of contracts with multiple performance obligations, such as when selling perpetual licenses that may include maintenance and support (included in the 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. If the stand-alone selling price of one or more goods or services in such arrangements is highly variable or uncertain, the Group estimates the stand-alone selling price with reference to the total transaction price less the sum of the observable stand-alone selling prices of other goods or services promised in the contract.

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 receives up-front fees, paid by customers for certain exclusivity rights, 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 includes 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 or case 'bundles' 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 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 or the carry forward of unused tax credits and unused tax losses can be utilized. In order for any deferred tax assets to be recognized, and at a minimum, the respective Materialise entity should have recorded a taxable profit in the current year and it should be probable that a taxable profit will be achieved in the subsequent year.

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.

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 related disclosures. Uncertainty about these assumptions and estimates could lead to outcomes that require a material adjustment to the carrying amount of assets or liabilities for future periods.

The Group reviews its estimates, assumptions and judgments on an ongoing basis, 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 has based its assumptions and estimates on the parameters that were available when the consolidated financial statements were prepared. However, existing conditions and assumptions about future developments, may change due to market changes or circumstances beyond the Group's control. Such changes are incorporated into the assumptions as they occur.

Revenue recognition

Our revenue recognition policy requires management to make significant estimates. Management analyzes various factors, including an evaluation of specific transactions, historical experience, creditworthiness of customers and current market and economic conditions. Changes in judgments based upon these factors may affect the timing and amount of revenues and expenses recognized and, consequently,the results of operations and financial condition. Significant estimates and judgments relate to:

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

The Group makes 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 to the customer in its own or together with readily available resources and/or whether the good or service is highly interrelated or constitutes a significant input with another good or service provided, or whether it significantly modifies or tailors another good or service. The relevant assessments include but are not limited to the following:

- Whether the software license is distinct from the 3D printed guides - in most cases with contracts with collaborative partners in the Materialise Medical segment, the software licenses are combined with the manufacturing of the 3D printed guides, as the software license has no benefit to the customer without the manufacturing services.
- Whether the development services are distinct from other performance obligations - in most cases these performance obligations are distinct but for certain contracts, the software license may be combined with the license and the 3D printed guides as one distinct performance obligation.

For stand-alone selling prices, the Group uses prices from price lists or historical prices for similar transactions. However, in certain cases such information is not readily available and in those cases the Group estimates the stand-alone selling price based on a cost plus mark-up or other estimate. In addition, for certain performance obligations such as development services, the stand-alone selling prices also require an estimate of the time required to complete the development. If the Group determines that the stand-alone selling price of one or more goods or services in a multiple element arrangement is highly variable or uncertain, the Group estimates the stand-alone selling price with reference to the total transaction price less the sum of the observable stand-alone selling prices of other goods or services promised in the contract.

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

- Quantities/volume sold at fixed prices related to, but not limited to, the manufacturing of 3D printed products, software licenses sold, maintenance renewals;
- Contractual prices may vary based on volume purchased during a given period;
- FTE expenses for development or other services billed on a time and material basis; and
- Volume rebates.

The method used to estimate the variable consideration depends on the number of possible scenarios and the probability of each scenario. If there are many possible scenarios with a high probability (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 the Group determines, based on historical experience, a high reliable business forecast and/or the time frame of the estimates, that there is a high probability that it will not result in a future reversal of revenue.

We determine the stage of completion for development contracts satisfied over time by comparing the labor hours incurred to date with 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 are made in the period when facts that give rise to a change become known. When the estimate indicates that a loss will be incurred, the loss is recorded in the relevant period. Significant judgments and estimates are involved in determining the percentage of completion for each contract. Different assumptions can produce 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 technical feasibility, the 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 reliably measure the expenditure attributable to the intangible asset during development and evidence of how the asset will generate probable future economic benefits. The cost of a recognized internally generated intangible asset includes all directly attributable costs necessary to make the asset suitable for use 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 should 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 completion of the asset is technically feasible considering a company-specific approach, the likelihood of future economic benefits from sale or use, including an assessment of whether FDA approval will be obtained.

The Group has determined that the conditions for recognizing internally generated intangible assets from its own software, guides 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 that the asset will generate future economic benefits on a reasonable basis or (ii) the development is done at the specific request of the customer, the Group intends to market the product to other parties than the customer, the development is subject to an agreement and the substance of the agreement is that the customer will reimburse the Group for a significant portion of the development costs incurred. As such, development expenditures that do not meet the above criteria and expenditures for 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 capitalized a total of K€2,659 of development expenses during 2021 of which:

- K€1,684 related to capitalized internal development expenses of our digital transformation program; and
- K€975 related to the transformation of the platform architecture to enable our software products to make the transition from desktop to (hybrid) cloud.

Share-based payment transactions

The Group measures the cost of equity-settled transactions with employees based on the fair value of the equity instruments at the date at which they are granted, and measures the cost of cash-settled transactions based on 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. The use of this model requires management to make assumptions regarding the volatility and expected life of the equity instruments. The assumptions used to determine fair value for share-based payment transactions are disclosed in Note 14 and are as follows:

- Volatility is determined based on the Group’s average annualized volatility;
- The estimated life of the warrant is determined up to the first exercise period, which is typically the month after the vesting;
- The fair value of the shares is determined based on the Group’s share price on Nasdaq on 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 of listed industry peers in the 3D printing industry; and
- The dividend yield is estimated based on the Group’s historical dividend payout. It is currently estimated at zero as no dividends have been paid since inception.

Income taxes

Deferred tax assets are recognized only to the extent that it is probable that taxable profit will be available against which the deductible temporary difference can be utilized. Significant management judgment is required to determine the amount of deferred tax assets that may be recognized, based on the probable timing and level of future taxable profits, together with future tax planning strategies.

In order for any deferred tax assets to be recognized, and at a minimum, the respective Materialise entity should have recorded a taxable profit in the current year and it should be probable that a taxable profit will be achieved in the subsequent year.

As at December 31, 2021, the Group had current and non-current receivables related to tax credits for an amount of K€4,717 (2020: K€4,647; 2019: K€3,723)

As at December 31, 2021, the Group had K€58,161 (2020: K€50,538; 2019: K€37,440) of tax losses carried forward and unused Innovation Income Deductions, of which K€35,578 related to Materialise NV (2020: K€27,878; 2019: K€25,172). 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 and Innovation Income Deduction of Materialise NV, no deferred tax assets have been recognized in 2021, 2020 and 2019, 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 replaced the former Patent Income Deduction. Under the grandfathering rule the Patent Income Deduction system could 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. According to the Group's policy 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 2021, 2020 nor 2019 except for our tax unity in Germany where we recorded a deferred tax asset of € 0.3 million related to 2020 losses, and Materialise Motion where we recorded a deferred tax asset of € 1.8 million against a deferred tax liability of € 2.0 million as discussed in Note 4. The Group has not recognized deferred tax assets on unused tax losses and Innovation Income Deduction totaling K€12,033 in 2021 (2020: K€22,661; 2019: K€10,737) given that it is not probable that sufficient positive taxable base will be available in the foreseeable future against which these tax losses and Innovation Income Deduction can be utilized.

If all deferred tax assets related to tax losses carried forward and unused Innovation Income Deduction would meet the criteria for recognition, the net result would have improved by K€12,033 in 2021 through a deferred tax benefit. This would represent the planned recovery of K€48,648 of carried forward tax losses and Innovation Income Deduction 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€18,726 as at December 31, 2021 (2020: K€18,599; 2019: K€19,607) 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 2021 for a total amount K€2,659 (2020: K€4,541; 2019: K€1,328), including external acquired licences, which as of December 31, 2021 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 2021 impairment charges have been recorded for K€177 (2020: K€4,606; 2019: K€0) related to the goodwill of Aldema (Metal Belgium).

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 make 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

At December 31, 2021 the Group holds convertible debt instrument issued by Fluidda which is 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 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, 2021 amounted to K€3,554 which includes a fair value adjustment of K€316 recorded in financial income during 2020. Fluidda is a private start-up company which offers turnkey contract research services for drug development and medical device development. Fluidda is currently loss-making. The convertible loan has a duration of 7 years with a 10% annual interest rate which are capitalized. The Group has applied a discount factor of 12.87% 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.

The Group previously 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€306.

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 adjustment was estimated based on available information related to the liquidity and the fund raising process of Essentium. Based on the valuation of a recent Series B capital round, the Group estimated the fair value of its investment at December 31, 2020 at K€3,535 and recognized a fair value adjustment in OCI of K€489 for the year ended December 31, 2020. At the end of 2021 Essentium was facing significant liquidity issues and significant uncertainty related to the fund raising process, and started a process of restructuring its organization. As a result of these elements, and considering the Group's subordinate position as shareholder, the Group remeasured the fair value of its investment to zero at December 31, 2021 and recognized a K€3,443 downward fair value adjustment in OCI for the year ended December 31, 2021.

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

Business combination after the end of the reporting period

On April 9, 2021, the Group acquired an option to buy Link3D Inc.. On November 15, 2021, Materialise provided notice to Link3D of its intention to exercise the option. The acquisition was completed on January 4, 2022. This acquisition was effectuated through the Group's U.S. subsidiary, Materialise USA, LLC. As a result of this transaction, Materialise USA has become the sole shareholder of Link3D. On January 4, 2022, the Group completed the acquisition and obtained control of Link3D Inc.. Link3D is a an additive workflow and digital manufacturing software company. The Group acquired 100% of voting equity interests in Link3D Inc. for a total consideration of K$ 30,200.

The acquisition of Link3D is expected to strengthen and accelerate the creation of the Materialise software platform, particularly for companies that are scaling up their additive manufacturing operations to volume production. By integrating Link3D's additive MES (Manufacturing Execution System) solution with the Materialise Magics software suite into a unified, cloud-based software platform, manufacturers will be able to run and continuously improve the most efficient, repeatable, automated and controlled processes to mass-produce identical or customized products. This process extends beyond the actual 3D printing operations and creates a closer alignment between 3D printing and conventional manufacturing, signaling the removal of the wall between both production environments.

At the time of approval for issue of these consolidated financial statements, the initial accounting for the business combination, including the purchase price allocation, had not yet been completed. Furthermore, the fair values of assets acquired and liabilities assumed, and the amount of goodwill to be recognized, had not yet been determined. Therefore, the related disclosures could not yet be made.

Acquisitions in 2021

The Group did not effect any business combinations in the course of 2021.

Acquisitions in 2020

Materialise Motion

The Group executed a share purchase agreement dated November 9, 2020 and acquired the remaining 50% of the shares of Materialise Motion NV ("Materialise Motion", formerly 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 was transferred to the Group. Before this transaction, the Group already had a 50% interest in Materialise Motion. The fair value of the previously held equity method investment was valued at K€770. The corresponding gain was presented within net other operating income for the year ended December 31, 2020 (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 were considered in relation to the consideration paid for this transaction.

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

Materialise Motion 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 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 adjustments	Fair value at acquisition 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

Deferred tax assets	1,743	(46)	1,698
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	**5,217**	**8,149**	**13,366**
Liabilities			
Deferred tax liabilities	–	(2,003)	(2,003)
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)**	**(2,003)**	**(4,896)**
Total identified assets and liabilities	**2,324**	**6,146**	**8,470**
Goodwill	–	1,175	1,175
Acquisition price	**–**	**–**	**9,645**

The cash flow from the business combination was 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 fair values of the identifiable assets and liabilities included in our consolidated financial statements as per December 31, 2020 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 October 2021, we completed the fair value analysis of the Materialise Motion business combination, which resulted in corresponding adjustments to the goodwill, consolidated reserves and deferred tax assets and deferred tax liabilities. The fair value of the identified assets and liabilities was K€1,743 higher than the provisional value at date of acquisition, with a corresponding reduction in goodwill of K€1,743. We refer to Note 2 for the detailed impact of the retrospective adjustment resulting from the final accounting of the Materialise Motion business combination.

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. Upon the completion of the accounting for the business combination in 2021, the deferred tax assets were adjusted by K€1,743. 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 the level of development, manufacturing and the existing customer base. The goodwill is not deductible for income tax purposes.

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.

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

in 000€	**Carrying value at acquisition date**	**Fair value adjustments**	**Fair value at acquisition 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 was 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 values 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.

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 the level of manufacturing and the existing customer base. The goodwill is not deductible for income tax purposes.

5 Goodwill

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

	As of December 31,		
in 000€	**2021**	**2020***	**2019**
CGU: MAT Software	3,241	3,241	3,241
CGU: e-Prototypy	743	749	800
CGU: ACTech	8,812	8,812	8,812
CGU: OrthoView	4,755	4,445	4,683
CGU: MAT NV Manufacturing (Metal)	–	177	177
CGU: Engimplan	–	–	1,894
CGU: Materialise Motion*	1,175	1,175	–
Total	**18,726**	**18,599**	**19,607**

* The year 2020 has been adjusted retrospectively to reflect the final accounting of the business combination with Materialise Motion. 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 2021, 2020 and 2019:

in 000€	**Gross**	**Impairment**	**Total**
At January 1, 2019	**17,595**	**(104)**	**17,491**
Additions	1,864	–	1,864
Currency translation	252	–	252
At December 31, 2019	**19,711**	**(104)**	**19,607**
Additions	1,175	–	1,175
Impairment	–	(1,367)	(1,367)
Currency translation	(816)	–	(816)
At December 31, 2020*	**20,070**	**(1,471)**	**18,599**
Additions	–	–	–
Impairment	–	(177)	(177)
Currency translation	304	–	304
At December 31, 2021	**20,374**	**(1,648)**	**18,726**

* The year 2020 has been adjusted retrospectively to reflect the final accounting of the business combination with Materialise Motion. See additional information in Notes 2 and 4.

The goodwill of Orthoview (UK) and e-Prototypy (PL) include respectively K€310 and K€(6) impact of currency translation in 2021.

The Group has performed an impairment test for all CGUs, 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. The MAT Software CGU is included in the reportable segment "Materialise Software". The CGUs ACTech, e-Prototypy (PL), MAT NV Manufacturing (Metal) and Materialise Motion are included in the reportable segment "Materialise Manufacturing". The CGU Orthoview (UK) is 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 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 7.40% (8.06% pre-tax) and a perpetual growth rate of 5%. 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€42,170. Based on the sensitivity analyses performed by the Group, including analyses whereby the discount rate would increase by 100 basis points or the perpetual growth rate would be zero, there are no reasonably possible changes in assumptions that would reduce the value in use below the 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 discounted cash flows considering a period of five years. The main assumptions include a discount rate (based on WACC) of 9.90% (11.30% pre-tax) and a perpetual growth rate of 2%. 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 of K€3,519. Based on the sensitivity analyses performed by the Group, including analyses whereby the discount rate would increase by 100 basis points or the perpetual growth rate would be zero, there are no reasonably possible changes in assumptions that would reduce the value in use below the carrying value of the cash generating unit.

CGU ACTECH

The impairment test on the CGU ACTech is based on the discounted cash flows, considering a period of 5 years. The main assumptions include a discount rate (based on WACC) of 6.36% (8.72% pre-tax) and a perpetual growth rate of 1%. 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€25,932. Based on the sensitivity analyses performed by the Group, including analyses whereby the discount rate would increase by 100 basis points or the perpetual growth rate would be zero, there are no reasonably possible changes in assumptions that would reduce the value in use below the carrying value of the cash generating unit.

CGU Orthoview

The goodwill relates to the acquisition of Orthoview. The impairment test on the CGU Orthoview is based on the discounted cash flows considering a period of 5 years.The main assumptions include a discount rate (based on WACC) of 8.05% (9.60% pre-tax) and a perpetual growth rate of 1%. 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€12,460. Based on the sensitivity analyses performed by the Group, including analyses whereby the discount rate would increase by 100 basis points or the perpetual growth rate would be zero, there are no reasonably possible changes in assumptions that would reduce the value in use below 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 2021.

CGU MAT NV Manufacturing Metal (Aldema)

The goodwill related to the acquisition of the Belgian entity Aldema BV in 2015, classified under the CGU Metal Prodution in Belgium. With the Materialise Metal Competence Center established in Bremen, Germany, the carrying value of this asset decreased to 0 resulting in the full impairment of the K€177 goodwill.

CGU Engimplan

The impairment test on the CGU Engimplan is based on the discounted cash flows, considering a period of 5 years. The main assumptions include a discount rate (based on WACC) of 15.49% (18.17% pre-tax) and a perpetual growth rate of 7%, supported by an expected long term inflation rate of 3.5%, 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 key 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. At December 31, 2020, the Group has recorded a full impairment of the goodwill of K€1,367 as well as a partial impairment on customer lists and trade marks for respectively K€942 and K€207. The impairment test at December 31, 2021, did not indicate the need for a further impairment nor for a reversal of the previously recorded impairment charges. Based on the sensitivity analysis performed by the Group whereby the perpetual growth rate would decrease by 100 basis points, the value in use would be K€25 below the carrying value of the cash generating unit. Based on the sensitivity analysis performed by the Group whereby the discount rate would increase by 100 basis points, the value in use would be K€194 below the carrying value of the cash generating unit.

CGU Materialise Motion

The impairment test on the CGU Materialise Motion is based on the discounted cash flows, considering a period of 5 years. The main assumptions include a discount rate (based on WACC) of 7.40% (9.00% pre-tax) and a perpetual growth rate of 1%. 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€8,103. Based on the sensitivity analyses performed by the Group, including analyses whereby the discount rate would increase by 100 basis points or the perpetual growth rate would be zero, there are no reasonably possible changes in assumptions that would reduce the value in use below the carrying value of the cash generating unit.

6 Intangible assets

The changes in the carrying value of the intangible assets can be presented as follows for the years 2021, 2020 and 2019:

in 000€	Patents and licenses	Software	Acquired customers, technology	Developed technology and software under construction	Total
Acquisition value					
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**
Additions	660	70	–	3,058	3,788
Acquisition of a subsidiary	–	–	–	–	–
Disposals	(153)	(23)	–	(65)	(242)
Transfer between accounts	272	162	2	(496)	(60)
Currency translation	1	6	386	0	393
Other	–	–	–	–	–
At December 31, 2021	**5,442**	**11,709**	**35,872**	**7,155**	**60,177**

in 000€	Patents and licenses	Software	Acquired customers, technology and backlogs	Developed technology and software under construction	Total
Amortization & Impairments					
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	0	109	0	0	109
Currency translation	1	14	240	–	255
Other	0	0	0	0	0
At December 31, 2020	**(3,051)**	**(7,721)**	**(10,433)**	**(2,112)**	**(23,317)**
Amortization charge for the year	(392)	(1,831)	(2,523)	–	(4,746)
Impairments	–	(231)	–	–	(231)
Disposals	107	23	–	–	131
Transfer between accounts	(1)	(33)	(0)	22	(12)
Currency translation	(1)	(5)	(287)	–	(293)
Other	–	(41)	–	–	(41)
At December 31, 2021	**(3,337)**	**(9,839)**	**(13,244)**	**(2,090)**	**(28,510)**
Net carrying value					
At December 31, 2021	2,105	1,869	22,628	5,065	31,668
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 January 1, 2019	1,633	3,161	20,217	1,315	26,326

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 and in-house developed technology. The remaining amortization period is 1.1 years for the main software purchases and 5.6 years for the main patents and licenses.

The ‘Acquired customers and technology’ have been recognized as part of the acquisition of Materialise Motion, Engimplan, ACTech, E-Prototypy, OrthoView, and Cenat (see Note 4). At December 31, 2021, the remaining amortization period for the acquired customers is 13.83 years for Materialise Motion, 7.58 years for Engimplan, 15.75 years for ACTech, 2.75 years for OrthoView, fully amortized for E-Prototypy and 3.25 years for Cenat . At December 31, 2021, the remaining amortization period for the acquired technology and contracts is 5.83 years for Materialise Motion.

The net book value of developed technology and software under construction at December 31, 2021 relates primarily to the internal digitalization program and the transformation of our platform architecture.

The total amortization charge for 2021 is K€4,746 (2020: K€4,709; 2019: K€4,859). 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.

7 Property, plant & equipment

The changes in the carrying value of the property, plant & equipment can be presented as follows for the year 2021, 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**
Additions	462	5,259	2,397	2,213	10,331
Disposals	–	(3,682)	(1,191)	(779)	(5,652)
Transfers	4,099	6,673	(1,249)	(8,296)	1,227
Currency Translation	183	598	103	4	888
At December 31, 2021	**47,161**	**103,268**	**20,207**	**1,781**	**172,417**
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)
Acquired from business combinations	–	–	–	–	–
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
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)**
Depreciation charge for the year	(1,344)	(10,590)	(3,640)	–	(15,574)
Disposals	–	3,594	1,166	–	4,760
Transfers	(143)	(1,595)	515	–	(1,223)
Currency Translation	(92)	(380)	(41)	–	(513)
At December 31, 2021	**(9,586)**	**(58,173)**	**(11,151)**	**–**	**(78,910)**
Net book value					

At December 31, 2021	37,575	45,095	9,056	1,781	93,507
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 investments in property, plant & equipment and right-of-use assets in 2021 amounted to K€10,331 (2020:K€15,598). They are mainly related to new machines and installations (K€3,635), land and buildings (K€2,224), IT equipment (K€2,126) and leased vehicles (K€769). The investments in 2020 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 leased vehicles (K€1,119).

The Group realized a net loss on disposal of property, plant and equipment of K€210 in 2021 (2020: a net loss of K€10; 2019: a net loss of K€165).

No impairment of property, plant and equipment was recorded in 2021, 2020 and 2019.

The transfers in 2021 within property, plant and equipment are mainly related to

- the transfers from construction in progress towards Land & Buildings and Plant & Equipment of K€8,296 is mainly related to the new metal production site in Bremen.
- 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€168.

Assets under construction

Per December 31, 2021 the main assets under construction were related to our new metal production facility in USA for an amount of K€547 and a printer for our plastic production in Belgium for K€540.

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 for the year ended December 31, 2019 by K€1,147. The depreciation charge for 2020 and 2021 was calculated to decrease by K€478 and K€276 respectively. 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, 2021 was K€9,054 (2020: K€10,996; 2019: K€10,586). Right-of-Use assets are mainly related to buildings with a carrying value of K€4,419 at December 31, 2021 (2020: K€4,917; 2019: K€3,783) and for which depreciation of K€1,794 was recorded in 2021 (2020: K€1,620; 2019: K€1,953). New leases in 2021 amount to K€2,396 of which K€1,624 related to leased buildings (2020: K€2,397; 2019: K€2,855).

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**
Additions	1,624	710	62	2,396
Disposals	(1,022)	(268)	(281)	(1,571)
Currency Translation	96	3	3	102
Transfers	(151)	(112)	(605)	(868)
At December 31, 2021	**8,121**	**4,888**	**7,197**	**20,206**
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)
Disposals	1,175	272	71	1,518
Transfers	446	992	2,373	3,811
Currency Translation	47	4	33	84
Other	–	–	–	–
At December 31, 2020	**(2,657)**	**(1,891)**	**(4,603)**	**(9,151)**
Depreciation charge for the year	(1,794)	(1,236)	(610)	(3,640)
Disposals	639	257	270	1,166
Currency Translation	(41)	(2)	2	(41)
Transfers	151	74	289	514
At December 31, 2021	**(3,702)**	**(2,798)**	**(4,652)**	**(11,152)**
Net book value				
At December 31, 2021	4,419	2,090	2,545	9,054
At January 1, 2021	4,917	2,664	3,415	10,996

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

(in 000€)	2021
Depreciation expense	(3,640)
Interest expense on lease liabilities	(289)
Expenses related to short-term leases/ low-value assets/ variable lease payments	(537)

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€)	2021
Potential (non-discounted) cash flows for terminations options that are not reasonably certain to be exercised:	3,015

Potential (non-discounted) cash flows for extensions options that are reasonably certain to be exercised	1,560

Pledges

Land and buildings (including buildings under construction) with a carrying amount of K€24,451 (2020: K€25,364; 2019: K€26,270) 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€1,131 (2020: K€2,274; 2019: K€2,884) (Note 24).

8 Investments in joint ventures

As at December 31, 2021, Materialise has no investments in joint ventures.

The changes in the carrying value of the joint ventures can be presented as follow for the years 2021, 2020 and 2019:

in 000€	
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 from 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	**–**
Additional investment	–
Transfer to receivables	–
Share in loss of the Joint venture	–
Gain from remeasurement previously held equity method investment at fair value	–
Accounted for as Business Combination	–
Carrying value as of December 31, 2021	**–**

9 Inventories and contracts in progress

Inventories and contracts in progress include the following:

	As of December 31,		
in 000€	**2021**	**2020**	**2019**
Raw materials	6,246	4,974	7,400
Work in progress	2,383	1,766	2,806
Finished goods	2,171	2,554	1,995
Contracts in progress	495	749	495
Total inventories and contracts in progress	**11,295**	**10,043**	**12,696**

Inventory written-off on the balance sheet amounted to K€1,196 for the year ended December 31, 2021 (2020: K€567; 2019: K€526). The expenses are recorded in Cost of Sales.

The Group has contracts in progress and advances from customers. The total costs incurred is K€426 and the profit recognized is K€69 as per December 31, 2021. Advances were received for the amount of K€11 with respect to contracts in progress per end of 2021 (2020: K€146; 2019: K€22).

10 Other assets

Other non-current assets

Other non-current assets include the following:

Investments in convertible loans	**As of December 31,**		
in 000€	**2021**	**2020**	**2019**
Convertible loan	3,560	6,203	2,750
Total	**3,560**	**6,203**	**2,750**

The Group 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€3,560 at December 31, 2021. The convertible loan has a duration of 7 years with a 10% annual interest rate which is capitalized. We refer to Note 3 and Note 20.

Investments in non-listed equity instruments	**As of December 31,**		
in 000€	**2021**	**2020**	**2019**
Non-listed equity investments	399	3,842	3,046
Total	**399**	**3,842**	**3,046**

At December 31, 2021, the Group remeasured the fair value of its equity investment in Essentium, Inc. to zero, recognizing a K€3,443 fair value adjustment in other comprehensive income. We refer to Note 3 and Note 20.

In addition, Materialise continues to hold an equity investment in AM Danube BV (holding company for AM Flow Holding BV), which had a fair value of K€307 at December 31, 2021. We also refer to Note 3 and Note 20.

The remainder of K€92 relates to an investment in the African Drive NV, which runs the African Drive project in Benin.

Other non-current assets	**As of December 31,**		
in 000€	**2021**	**2020**	**2019**
Tax credits	4,044	3,381	3,015
Guarantees and deposits	447	528	415
Non-current receivable on joint venture	–	–	138
Loan to Link3D incl capitalized interest	2,249	–	–
LT deferred charges	741	–	–
Other	38	184	27
Total	**7,519**	**4,093**	**3,595**

The non-current tax credits mainly relate to Belgian R&D tax credits, recoverable between 2023 and 2027.

On February 3, 2021, the Group concluded an interim loan agreement with Link3D, Inc. (“Link3D”) for the principal amount of K$700. In connection wih the call option entered into as of April 9, 2021, the Group concluded an additional loan for the principal amount of K$1,800 million. The aggregate principal amount of K$2,500, carries interest based on the Prime rate (3.25% for 2021) and has a maturity date of April 9, 2031. As set out in Note 4, the Group completed the acquisition of Link3D on January 4, 2022.

Other current assets

Other current assets include the following:

	As of December 31,		
in 000€	**2021**	**2020**	**2019**
Deferred charges	2,958	2,841	2,632
Tax credits	673	1,243	695
Accrued income	384	260	486
Other tax receivables	1,459	1,125	3,127
Grants	1,021	1,181	754
Other non-trade receivables	2,445	1,640	922
Total other current assets	**8,940**	**8,290**	**8,616**

The other tax receivables included Value Added Tax (VAT) receivables and corporate tax receivables. The other non-trade receivables as at December 31, 2021 included the value of the option purchased by the Group to acquire Link3D, for an amount of $ 2 million.

11 Trade receivables

The trade receivables include the following:

in 000€	As of December 31, 2021	2020	2019
Trade receivables	42,814	32,346	42,509
Allowance for doubtful accounts	(1,273)	(1,475)	(1,532)
Total	**41,541**	**30,871**	**40,977**

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

As at December 31, 2021, trade receivables of an initial value of K€1,273 (2020: K€1,475; 2019: K€1,532) 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, 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)**
Addition	(689)
Usage	259
Reversal	632
At December 31, 2021	**(1,273)**

12 Cash and cash equivalents

Cash and cash equivalents include the following:

	As of December 31,		
in 000€	**2021**	**2020**	**2019**
Cash at bank	192,895	108,399	123,337
Cash equivalents	3,133	3,139	5,560
Total	**196,028**	**111,538**	**128,897**

For the year ended December 31, 2021, cash at banks in euro earned a negative interest (K€223), based on floating interest rates. Cash at banks in other currencies 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.

There were no cash balances on a restricted bank account per December 31, 2021, 2020 or 2019.

13 Equity

Share capital

The share capital of the parent company Materialise NV consists of 59,063,521 ordinary nominative shares at December 31, 2021 (2020: 54,169,257; 2019: 53,172,513) with no nominal but par value of €0.076 in 2021 (2020: €0.076; 2019: €0.058) for a total amount of K€4,487 at December 31, 2021 (2020:K€4,096; 2019:K€3,066).

in 000€, except share data	Total number of ordinary shares	Total shareholders' capital	Total sharepremium
Outstanding at Jauary 1, 2019	**52,890,761**	**3,050**	**136,637**
Capital increase through exercise of warrants	281,752	16	1,252
Equity-settled share-based payments expense	–	–	201
Outstanding at December 31, 2019	**53,172,513**	**3,066**	**138,090**
Capital increase through exercise of warrants	487,840	30	3,082
Capital increase through 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 at December 31, 2020	**54,169,257**	**4,096**	**141,275**
Capital increase through exercise of warrants	294,264	22	2,322
Capital increase through public offering	4,600,000	371	90,235
Equity settled share-based payments expense	–	–	41
Outstanding on December 31, 2021	**59,063,521**	**4,489**	**233,872**

The shareholders' capital increased by K€22 in 2021 as a result of the exercise of warrants outstanding and fully vested. The number of new shares issued was 294,264 at an average price of €8,0 per share, including share premium.

The shareholders' capital increased by K€371 in 2021 as a result of the capital increase through public offering. The number of new shares issued was 4,600,000 at an average price of €19.7 per share, including share premium.

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€233,872 at December 31, 2021 (2020: K€141,275; 2019: K€138,090). The change in 2021 is the result of:

- The capital increase via exercise of warrants of K€2,322; and
- The share-based payment expense of K€41;
- The public offering of K€90,235

The change in 2020 is the result of the share-based payment K€103 and the capital increase via exercise of warrants of K€3,082. The change in 2019 is the result of the share-based payment expense of K€201 and the capital increase via exercise of warrants of K€1,252.

Other reserves

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

in 000€	As of December 31, 2021	2020	2019
Legal reserve	279	279	279
Other reserves	1,987	2,574	(335)
Equity-settled share-based payment expense	72	72	72
Other Comprehensive Income (loss)	(9,087)	(7,796)	(1,394)
Other reserves	**(6,749)**	**(4,871)**	**(1,378)**

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 2021, 2020 and 2019.

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, 2019	**(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)**
Currency translation impact	2,152	–	2,152
Fair value adjustment	–	(3,443)	(3,443)
At December 31, 2021	**(6,133)**	**(2,954)**	**(9,087)**

Non-controlling interest

In 2019 a non-controlling interest was recognized for 25% held by a third party in Engimplan for an amount of K€3,276 per end of 2019.

As of December 1, 2020, Materialise acquired the remaining 25% non-controlling interest held by a third party in Engimplan in return for the Spine business line. The non-controlling interest with a carrying amount of K2,213 was derecognized.

As of June 22, 2021, the Group, together with Zhenyuan (Tianjin) Medical Appliances Technology Co., Ltd., incorporated a new subsidiary with the name Tianjin Zhenyuan Materialise Medical Technology Limited Company. This entity will be responsible for all regulatory requirements regarding the Materialise Mimics Enlight Lung Software on the Chinese market. Both Materialise and Zhenyuan will work on development and distribution, in a collaborating manner. Materialise holds 51% of the shares, Zhenyuan 49%. In 2021, in respect of this majority-owned subsidiary, a non-controlling interest has been recognized, which had a carrying value of K€1 at December 31, 2021.

RapidFit+

At October 8, 2021, PMV, who owned 16.66% of the shares of our subsidiary RapidFit NV, executed their put option at the redemption amount of K€875. Prior to the execution, this put option was recognized as a financial liability and measured at the fair value of the redemption amount.

15 Loans and borrowings

The loans and borrowings include the following:

	As of December 31		
in 000€	2021	2020	2019
K€35,000 EIB bank loan	33,333	35,000	35,000
K€28,000 acquisition bank loan	15,604	18,621	21,612
K€18,000 secured bank loans	16,592	17,013	17,429
K€12,300 bank loans ACTech	8,160	10,470	11,850
K€9,050 other facility loans	2,248	2,910	3,599
Bank investment loans - top 20 outstanding	12,852	17,280	22,132
Bank investment loans - other	1,569	2,681	4,429
Lease liabilities	8,621	10,624	9,876
Institutional loan	–	353	824
Convertible bonds	–	–	1,000
Related party loan	128	158	187
Total loans and borrowings	**99,107**	**115,110**	**127,938**
Current	21,202	17,523	16,838
Non-Current	77,905	97,588	111,100

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%. A pledges have been given on moveable assets as well as a pledge over the shares.

On June 29, 2020, the European Investment Bank temporarily waived the compliance obligation of the covenants “Total gross Debt to Adjusted EBITDA” (until December 31, 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 January 3, 2022 for the first tranche and until January 17, 2022 for the second tranche. Finally, the European Investment Bank waived “the subsidiary financial indebtedness” covenant for the calculation period ending on June 30, 2020. For the periods thereafter this covenant has been eased. These covenants were waived in order to allow the Group to continue investing in its growth programs, even under stressed COVID-19 scenarios. At December 31, 2021, The Group was in compliance with all debt covenants including those that have been waived, as a result of the additional capital raised during 2021, the solid Adjusted EBITDA, and the decrease of our gross debt position.

During 2021 a first reimbursement of K€1,666 was made.

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; and with reimbursements only starting in December 2022. The agreement for the Polish facility financing amounts to K€6,000, 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€2,248 per December 31, 2021. All loans have a repayment schedule of 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, 2021 amount to a balance of K€12,852. 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€8,621 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, 2021 the balance of these lease agreements amounts to K€8,621, and are mostly at fixed interest rates with weighted average below 2%.

The total cash outflow from the lease liabilities amounts to K€3,775 in 2021, K€3,640 in 2020 and K€5,283 in 2019.

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, 2021 no balance remains outstanding under this loan.

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 of K€400 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, 2021 is K€128 (2020: K€158; 2019: K€187). The interest expense for the year ended December 31, 2021 is K€5 (2020:K€7; 2019:K€9).

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€	**2021**	**2020**	**2019**
At January 1,	**115,110**	**127,938**	**106,038**
Proceeds from loans & borrowings	–	–	29,000
Repayment of loans & borrowings	(14,277)	(13,736)	(12,126)
New leases	2,355	4,626	8,326
Repayment of leases	(3,775)	(3,640)	(5,283)
Loans acquired from business combination	–	–	2,076
Net foreign exchange movements	(306)	(78)	(92)
At December 31,	**99,107**	**115,110**	**127,938**

16 Other non-current liabilities

The other non-current liabilities consist of the following:

	As of December 31,		
in 000€	**2021**	**2020**	**2019**
Advances received on contracts	1,500	–	–
Provisions	667	318	122
Other	–	80	574
Total	**2,167**	**398**	**696**

The increase of the provision relates to a provision for the potential of reclassification of our self-employed workers into employees within Engimplan (K€541).

The advances received on contracts were paid by a client in the context of a long term contract for medical devices.

The impact of the accounting treatment of the Belgian contribution plans with a minimal guarantee is not material as the number of beneficiaries is limited. No provisions have been recognized as of December 31, 2021, 2020 and 2019. As such, no further disclosures have been provided.

17 Tax payables

The tax payables amount to K€783 as per December 31, 2021 (2020:K€974; 2019:K€3,363).

18 Deferred income

Deferred income consists of the following:

	As of December 31		
in 000€	**2021**	**2020**	**2019**
Deferred maintenance & license	34,287	30,242	27,667
Deferred (project) fees	3,537	4,555	4,647
Deferred government grants	435	85	358
Total	**38,259**	**34,882**	**32,672**
current	33,307	29,554	27,641
non-current	4,952	5,328	5,031

The deferred maintenance and license revenue consists 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.

19 Other current liabilities

Other current liabilities include the following:

	As of December 31		
in 000€	**2021**	**2020**	**2019**
Payroll-related liabilities	11,836	11,152	10,281
Non-income tax payables	2,058	3,018	2,262
Accrued charges	1,170	995	1,080
Advances received	276	404	715
RapidFit+ amounts payable to former shareholders	–	875	875
Derivatives	118	140	478
Cash settled share-based payment plan	147	1,223	–
Other current liabilities	367	888	1,995
Total	**15,972**	**18,695**	**17,686**

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, 2021, 2020 and 2019 are as follows:

	Carrying value			Fair value		
in 000€	**2021**	**2020**	**2019**	**2021**	**2020**	**2019**
Financial assets						
Financial assets measured at amortized cost						
Trade receivables (current)	41,541	30,871	40,977	41,541	30,871	40,977
Other financial assets (non-current)	2,696	712	580	2,696	712	580
Other current non-trade receivables	1,696	1,618	1,676	1,696	1,618	1,676
Cash & cash equivalents	196,028	111,538	128,897	196,028	111,538	128,897
Total financial assets measured at amortised cost	241,961	144,739	172,130	241,961	144,739	172,130
Financial assets at fair value through profit or loss						
Derivatives	1,770	23	9			
Convertible loan	3,560	6,203	2,750			
Total financial assets measured at fair value through profit and loss	5,330	6,226	2,759			
Financial assets at fair value through OCI						
Non-listed equity investments	399	3,842	3,046			
Total financial assets at fair value through OCI	399	3,842	3,046			

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, 2021, 2020 and 2019
- Other non-current financial assets are being evaluated on the basis of their credit risk and interest rate which are considered as level 2 inputs. Their fair value is not considered different from their carrying value given the related interest rate is revised on a regular basis.
- The non-listed equity investments, mainly representing the investment AM Flow (via an investment in AM Danube, one of the shareholders of AM Flow) for K€307, are measured at fair value. As of December 31, 2021, 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 (approx. 5% 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;
- For the non-listed equity investment in Essentium, as of December 31, 2021, Materialise recorded a remeasurement of fair value to zero through OCI (K€3,443).
- The derivatives include the option acquistion for Link3D for $ 2 million, discussed further in Note 4. The fair value is not different from the carrying value on December 31, 2021, and was determined based on level 3 inputs.
- The convertible loan granted to Fluidda was measured at fair value. As of December 31, 2021, management determined the fair value based upon level 3 inputs as follows:
    - The Group determined that the fair value of the convertible loan as at December 31, 2021 amounted to K€3,560. Fluidda is a private start-up company which offers turnkey contract research services for drug development and medical device development. Fluidda is currently loss-making. The convertible loan has a duration of 7 years with a 10% annual interest rate which are capitalized. The Group has applied a discount factor of 12.87% 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.

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€(46) / K€48.

Financial liabilities:

The carrying value and fair value of the financial liabilities as of December 31, 2021, 2020 and 2019 can be presented as follows:

	Carrying value			Fair value		
in 000€	2021	2020	2019	2021	2020	2019
Financial liabilities measured at amortized cost						
Loans & Borrowings including lease liabilities	99,108	115,110	127,939	100,417	116,843	128,930
Trade payables	20,171	17,698	18,517	20,171	17,698	18,517
Other liabilities excl. written put option on NCI	485	1,276	3,187	485	1,275	3,187
Total financial liabilities measured at amortized cost	**119,764**	**134,084**	**149,643**	**121,073**	**135,816**	**150,634**
Financial liabilities measured at fair value						
Contingent consideration	–	–	–	–	–	–
Cash settled share based payments	147	1,223	–			
Written put option on NCI	–	875	875			
Derivatives	118	140	478			
Total financial liabilities measured at fair value	**265**	**2,238**	**1,353**			
Total non-current	77,905	98,543	112,549			
Total current	42,124	37,779	38,447			

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.

Fair value hierarchy 3 evolution

Convertible Loans Ditto & Fluidda	Fair Value Evolution		
in 000€	2021	2020	2019
As at 1 January	**6,203**	**2,750**	**–**
Addition	–	2,830	2,500
Remeasurement	–	316	–
Capitalized interests	–	307	250
Reimbursement Ditto convertible loan	(2,643)	–	–
As at 31 December	**3,560**	**6,203**	**2,750**

Fair value hierarchy

Written Put Option on NCI RapdFit+	Fair Value Evolution		
in 000€	2021	2020	2019
As at 1 January	**875**	**875**	**845**
Remeasurement	–	–	30
Payout put-option PMV	(875)	–	–
As at 31 December	**–**	**875**	**875**

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, 2021, 2020 and 2019: 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 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	Consolidated
For the year ended December 31, 2021						
Revenues	42,902	73,368	89,180	205,450	–	205,450
Segment Adjusted EBITDA	15,705	20,669	6,275	42,649	(10,159)	32,490
Segment Adjusted EBITDA %	36.6%	28.2%	7.0%	20.8%	–	15.8%
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	29,846	(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%

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€	2021	2020*	2019
Segment Adjusted EBITDA	**42,649**	**29,847**	**36,740**
Depreciation, amortization and impairment	(20,516)	(19,775)	(19,278)
Corporate research and development	(2,948)	(2,824)	(1,859)
Corporate headquarter costs	(10,317)	(11,719)	(11,077)
Other operating income (expense)	3,527	3,668	2,410
Fair value adjustment 50% Materialise Motion	–	770	–
Impairments	(177)	(4,606)	–
Operating (loss)/ profit	**12,217**	**(4,639)**	**6,936**
Financial expenses	(4,101)	(5,995)	(3,682)
Financial income	5,620	2,452	1,377
Income taxes	(591)	1,028	(2,595)
Share in loss of joint venture	–	(39)	(392)
Net profit (loss) for the year	**13,145**	**(7,193)**	**1,644**

* The year 2020 has been retrospectively adjusted to reflect the final accounting of the business combination with Materialise Motion. See additional information in Notes 2 and 4.

The Group has 1 individual customer that represents sales larger than 10% of the total revenue in 2021 (2020: 0; 2019: 0). The total amount of revenues from this customer for the year 2021 was K€ 26,772, and these revenues are reported within the Medical segment.

Entity-wide disclosures

The revenue by geographical area is as follows:

	As of December 31,		
in 000€	**2021**	**2020**	**2019**
United States of America	69,140	47,266	56,235
Americas other than USA	6,297	5,297	3,395
Belgium	6,947	7,048	7,917
Germany	20,442	17,087	31,185
France	12,964	11,586	20,110
Switzerland	13,643	12,587	14,907
United Kingdom	8,836	7,725	13,804
Italy	6,520	5,876	6,707
Netherlands	7,310	6,943	5,825
Other Europe	33,816	31,518	17,329
Asia Pacific	19,535	17,516	19,265
Total	**205,450**	**170,449**	**196,679**

The total revenue realized in the country of domicile (Belgium) in 2021 amounts to K€6,947 (2020: K€7,048; 2019: K€7,917).

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

	As of December 31,		
in 000€	**2021**	**2020**	**2019**
United States of America (USA)	4,237	3,441	4,194
Americas other than USA	3,276	3,454	8,374
Belgium	67,865	62,810	49,426
Germany	55,712	58,305	57,918
Poland	12,756	13,437	15,506
Rest of Europe	10,019	9,087	10,410
Asia-Pacific	1,739	2,052	2,658
Total	**155,604**	**152,586**	**148,486**

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.

22 Income and expenses

22.1 Revenue

22.1.1 Disaggregated revenue information

	For the year ended December 31, 2021					
in 000€	Materialise Software	Materialise Medical	Materialise Manufacturing	Total segments	Unallocated	Consolidated
Geographical markets						
United States of America (USA)	11,981	38,507	18,652	69,140	–	69,140
Americas other than USA	501	4,576	1,220	6,297	–	6,297
Europe (without Belgium) & Africa	18,749	22,098	62,683	103,530	–	103,530
Belgium	235	1,177	5,535	6,947	–	6,947
Asia Pacific	11,436	7,010	1,090	19,536	–	19,536
Total revenue from contracts with customers	42,902	73,368	89,180	205,450	–	205,450
Type of goods or service						
Software revenue (non-medical)	42,902	–	–	42,902	–	42,902
Software revenue (medical)	–	22,856	–	22,856	–	22,856
Medical devices and services	–	50,512	–	50,512	–	50,512
Manufacturing	–	–	89,180	89,180	–	89,180
Other	–	–	–	–	–	–
Total revenue from contracts with customers	42,902	73,368	89,180	205,450	–	205,450
Timing of revenue recognition						
Goods/Services transferred at a point in time	19,832	54,355	85,448	159,635	–	159,635
Goods/Services transferred over time	23,070	19,013	3,732	45,815	–	45,815
Total revenue from contracts with customers	42,902	73,368	89,180	205,450	–	205,450

	For the year ended December 31, 2020					
in 000€	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	–	–	–	–	–	–
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

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

in 000€	For the year ended December 31 2021	2020	2019
Software revenue (non-medical)	42,902	39,054	41,654
Software revenue (medical)	22,887	19,808	19,407
Medical devices and services	50,481	41,921	41,401
Manufacturing	89,180	69,635	94,156
Other	–	31	61
Total	**205,450**	**170,449**	**196,679**

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, 2021	2020
Trade receivables, included in 'trade and other receivables'	42,814	32,346
Contract assets / contracts in progress	495	749
Contract liabilities / deferred income / advances received on contracts	39,324	34,797

We refer to Note 18 for a detail of the deferred income. Note 18 includes a 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 2021 that was included in the contract liability at the beginning of the year amounts to K€34,797. There is no revenue recognized during 2021 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 constraint (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 2021	2020	2019
Purchase of goods and services	(38,691)	(31,725)	(37,870)
Amortization and depreciation	(11,296)	(11,788)	(10,917)
Payroll expenses	(38,499)	(32,438)	(37,715)
Work in Progress	1,208	(495)	(550)
Total	**(87,278)**	**(76,446)**	**(87,052)**

22.3 Research and development expenses

Research and development expenses include the following selected information:

	For the year ended December 31		
in 000€	2021	2020	2019
Purchase of goods and services	(3,770)	(2,788)	(2,583)
Amortization and depreciation	(1,821)	(1,746)	(1,483)
Payroll expenses	(21,300)	(20,368)	(19,219)
Other	–	(2,202)	(63)
Total	**(26,891)**	**(27,104)**	**(23,348)**

22.4 Sales and marketing expenses

Sales and marketing expenses include the following selected information:

	For the year ended December 31		
in 000€	2021	2020	2019
Purchase of goods and services	(6,704)	(5,960)	(9,228)
Amortization and depreciation	(1,892)	(1,946)	(1,346)
Payroll expenses	(40,555)	(36,521)	(42,055)
Other	–	(209)	(360)
Total	**(49,151)**	**(44,636)**	**(52,989)**

22.5 General and administrative expenses

General and administrative expenses include the following selected information:

	For the year ended December 31		
in 000€	2021	2020	2019
Purchase of goods and services	(11,248)	(8,933)	(9,856)
Amortization and depreciation	(2,987)	(2,437)	(3,630)
Payroll expenses	(19,080)	(18,104)	(18,078)
Other	–	137	(222)
Total	**(33,315)**	**(29,337)**	**(31,786)**

22.6 Net other operating income

The net other operating income can be detailed as follows:

in 000€	For the year ended December 31 2021	2020*	2019
Government grants	4,466	4,473	5,263
Amortization intangibles purchase price allocation	(2,521)	(1,857)	(2,013)
Allowance for doubtful debtors	(58)	(244)	210
Capitalized expenses (asset construction)	223	316	166
Tax Credits	746	1,198	665
Personnel related income	–	–	37
Fair value adjustment Materialise Motion	–	770	–
Impairment Engimplan	–	(2,516)	–
Impairment Metal Belgium (Aldema)	(177)	–	–
Other	723	295	1,104
Total	**3,402**	**2,436**	**5,432**

* The year 2020 has been adjusted retrospectively to reflect the final accounting of the business combination with Materialise Motion.

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 2021, 2020 and 2019:

in 000€	For the year ended December 31 2021	2020	2019
Short-term employee benefits	(93,850)	(82,135)	(87,775)
Social security expenses	(17,076)	(15,691)	(15,647)
Expenses defined contribution plans	(1,250)	(1,150)	(1,033)
Other employee expenses	(7,259)	(8,455)	(12,612)
Total	**(119,435)**	**(107,431)**	**(117,067)**
Total registered employees at the end of the period	2,332	2,162	2,177

22.8 Financial expenses

Financial expenses includes the following selected information:

in 000€	For the year ended December 31 2021	2020	2019
Interest expense	(2,435)	(2,299)	(2,146)
Foreign exchange losses	(1,258)	(2,999)	(832)
Other financial expenses	(408)	(697)	(704)
Total	**(4,101)**	**(5,995)**	**(3,682)**

22.9 Financial income

Financial income includes the following selected information:

in 000€	For the year ended December 31 2021	2020	2019
interest income	658	418	386
Foreign exchange gains	4,904	1,668	955
Other finance income	58	366	36
Total	**5,620**	**2,452**	**1,377**

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:

	For the year ended December 31		
in 000€	2021	2020*	2019
Net profit (loss) attributable to ordinary equity holders of the parent for basic earnings	**13,154**	**(7,044)**	**1,586**
Interest on convertible bonds	–	–	50
Net profit (loss) attributable to ordinary equity holders of the parent adjusted for the effect of dilution	**13,154**	**(7,044)**	**1,636**

* The year 2020 has been adjusted retrospectively to reflect the final accounting of the business combination with Materialise Motion. See additional information in Notes 2 and 4.

The warrants are dilutive at December 31, 2021. 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, 2021 and 2019 and are anti-dilutive as per December 31, 2020.

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

	For the year ended December 31		
in 000	2021	2020	2019
Weighted average number of ordinary shares for basic earnings per share	**56,685**	**53,364**	**52,915**
Effect of dilution:			
Warrants	158	–	563
Convertible loan	–	–	509
Weighted average number of ordinary shares adjusted for effect of dilution	**56,843**	**53,364**	**53,987**

The earnings per share are as follows:

	For the year ended December 31		
	2021	2020	2019
Earnings per share attributable to the owners of the parent			
Basic	0.23	(0.13)	0.03
Diluted	0.23	(0.13)	0.03

24 Commitments and contingent liabilities

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€25,582 (2020: K€27,638; 2019: K€29,154). The total outstanding mortgages and pledges are K€103,685 in 2021 (2020: K€105,610; 2019: K€77,849).

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 2021 (2020: K€69,300; 2019: K€36,992) and pledges on other fixed assets for a total amount of K€1,399 (2020: K€3,290; 2019: K€3,301).

Other commitments

The Group has outstanding non-cancellable contracts with a future commitment of K€7,043 at December 31, 2021 (2020: K€6,384; 2019: K€11,640), mainly related to purchase commitment for raw materials. For property, plant & equipment, we have no committed expenditures as per December 31, 2021 (2020: K€0; 2019: K€0).

Contingent liabilities

On September 21, 2021, the Brussels Court of Appeal issued a judgment regarding the termination of a supply agreement that we entered into with Dentsply Implants NV in 2010. In its judgment, the Court of Appeal overruled the judgment issued by the court of first instance (which had previously ruled in favor of Dentsply Implants NV), and fixed the amount of the financial compensation to Dentsply Implants NV at an amount, which, increased with legal interests and costs, resulted in a total amount payable by us to Dentsply Implants NV of € 866,909.74. This judgment of the Brussels Court of Appeal is final and payment was made on November 25, 2021.

On November 15, 2021, we received a written notice from counsel for Zimmer Biomet, informing us of Zimmer Biomet’s decision to file a request for arbitration with the Belgian Centre for Arbitration and Mediation. Zimmer Biomet believes that we have a contractual obligation pursuant to the terms of our collaboration to indemnify Zimmer Biomet for the expenses it incurred as a result of its settlement with Conformis, Inc. of a patent dispute related to certain joint replacement devices. We believe there are meritorious defenses to Zimmer Biomet’s claim and intend to contest it vigorously. However, an adverse resolution of this arbitration could have an adverse effect on our results of operations, financial condition or cash flows in the period in which the arbitration is resolved. No amounts have been accrued for this loss contingency.

On June 1, 2021, we entered into a settlement agreement with Osteoplastics, LLC in connection with a patent infringement lawsuit filed by Osteoplastics, LLC on March 20, 2020, as described in our Annual Report on Form 20-F for the year ended December 31, 2020. Pursuant to the settlement agreement, we agreed to file documents seeking to withdraw or terminate all petitions for review (the “IPR Procedure”) of seven asserted patents owned by Osteoplastics, LLC with the Patent Trial and Appeal Board of the United States Patent and Trademark Office (the “PTAB”). On June 3, 2021, we filed a Motion to Dismiss with the PTAB regarding the IPR Procedure, and in a decision dated June 4, 2020, the PTAB granted our Motion to Dismiss. Other than external counsel fees and PTAB fees, there is no financial impact incurred in relation to this matter or the settlement agreement.

Apart from the cases set out above, 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..

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, 2021, 2020 and 2019, 35%, 35% and 29% 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 U.S. dollar (rate for €1) would have appreciated by 10%, the net result would have been € 1.2 million higher, excluding the effect of the cash and term accounts held in U.S. dollars. If the U.S. dollar (rate for €1) would have depreciated by 10%, the net result would have been € 1.0 million lower, excluding the effect of the cash and term accounts held in U.S. dollars.

To limit the exposure to foreign currency rate fluctuations on GBP and JPY, the Group has entered into currency rate swaps. As of December 31, 2021 the Group had hedge agreements in place for K GBP 1,350 and million JPY 160.0. 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.

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 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 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. interest) :

in 000€	Less than 1 year	2 to 3 years	4-5 years	More than 5 years	Total
At December 31, 2021					
Loans & borrowings	19,081	41,590	19,587	14,901	95,159
Lease liabilities	3,496	3,790	946	1,102	9,334
Trade payables	20,171	–	–	–	20,171
Other current liabilities	750	–	–	–	750
Total	**43,498**	**45,380**	**20,533**	**16,003**	**125,414**

	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	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**

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.

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, 2021	41,541	34,002	4,199	1,634	426	611	669
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

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, 2021, 2020 and 2019.

26 Related party transactions

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

	For the year ended December 31		
in 000€	2021	2020	2019
Short-term employee benefits	2,832	2,302	2,394
Post-employment benefits	93	93	85
Total	**2,925**	**2,395**	**2,479**
Warrants granted	–	–	–
Warrants outstanding	4,545	108,905	359,266

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, 2021 the compensation to key management by means of share based payments amounts to K€132.

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								
2021	–	122	–	–	–	–	–	58
2020	–	85	–	28	–	–	–	–
2019	–	128	–	37	–	–	–	1,053
Shareholders of the Group								
2021	–	30	–	6	–	77	–	60
2020	–	2	–	7	–	29	–	158
2019	–	113	–	9	–	–	–	131
Joint ventures								
2021	–	–	–	–	–	–	–	–
2020	419	–	–	–	–	–	–	–
2019	1,431	–	–	–	–	1,279	–	–
Non-controlling interests								
2021	–	–	–	–	–	–	–	–
2020	–	–	–	–	–	–	–	–
2019	–	–	26	9	617	–	652	–

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 a partial demerger). 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, 2021. The Group rents apartments on a regular basis from Lunebeke NV 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 for rent in 2021 was K€37 (2020: K€0; 2019: K€113).

27 Events subsequent to the statement of financial position date

Closing of acquisition of Link3D

On April 9, 2021, the Group acquired an option to buy Link3D Inc.. On November 15, 2021, Materialise provided notice to Link3D of its intention to exercise the option. The acquisition was completed on January 4, 2022. This acquisition was effectuated through the Group's U.S. subsidiary, Materialise USA, LLC. As a result of this transaction, Materialise USA has become the sole shareholder of Link3D. Link3D is an additive workflow and digital manufacturing software company. The acquisition of Link3D is intended to strengthen and accelerate the creation of the Materialise software platform.

Impact of the armed conflict in Ukraine

As discussed in more detail in "Item 3. Key Information—D. Risk Factors" of this annual report, we have historically maintained an office in Kyiv, employing over 400 collaborators who are mainly engaged in engineering, software development and supporting IT and staff functions. As a result of the armed conflict in Ukraine, our operations from our Kyiv office have come to a standstill.

To-date, most our our personnel from the office in Kyiv have continued to work for us throughout the armed conflict, either remotely from Ukraine or other neighboring countries or from our Wroclaw office, while others remain unable to perform their work.As of the date of this annual report, we have been able to continue servicing our customers without significant disruption or delay, as personnel with similar skills and competencies located elsewhere in the world have increased their roles and responsibilities to assist displaced personnel.

Despite our initiating an intense relocation and support program, it is impossible to predict how much of our Ukrainian workforce will be able or willing to continue working for us. As we are unable to predict how the armed conflict in Ukraine will evolve, we cannot exclude that delays or disruption in certain of our services may occur, which could impact our business and operations, results of operations, financial condition, cash flows and liquidity.

Although the impact of the armed conflict in Ukraine has not had a material adverse effect on our financial results to-date, we have incurred € 0.3 million as of February 24, 2022 related to the relocation and support efforts of Ukrainian personnel. We will continue to incur expenses and we will be affected by additional operating expenses from hiring additional and more expensive resources outside Ukraine.

It is still uncertain to what extent some of the development projects of our Materialise Software and Materialise Medical segments, and to a lesser extent our Materialise Manufacturing segment, will be impacted. As a result of such impact, some of our anticipated product releases may be delayed, which may adversely affect our revenue.

In addition, although only a small percentage of our historical revenues was generated in Russia, we expect that the trade sanctions that have been imposed against Russia by, among others, the United States and the European Union, will have a negative impact on our revenue for the year ended December 31, 2022.

As of the date of this annual report, we are unable to predict how the armed conflict in Ukraine will evolve or what the impact of any political and direct and indirect economic repercussions will be on the global economy and our business. Indirect economic repercussions could, for example, come from continued or further increased inflation, or currencies instability. 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.

28 Overview of consolidated entities

Name	Country of incorporation	% equity interest*		
		2021	2020	2019
Materialise NV	Belgium	100%	100%	100%
Materialise SAS	France	100%	100%	100%
Materialise GmbH	Germany	100%	100%	100%
Materialise Japan K.K.	Japan	100%	100%	100%
Materialise s.r.o.	Czech Republic	100%	100%	100%
Materialise USA, LLC	United States	99%	99%	99%
Materialise UK Ltd	United Kingdom	100%	100%	100%
OBL SAS	France	100%	100%	100%
Materialise Austria GmbH	Austria	100%	100%	100%
Materialise Sdn. Bhd.	Malaysia	100%	100%	100%
Materialise Ukraine LLC	Ukraine	100%	100%	100%
RapidFit NV	Belgium	100%	83%	83%
Meridian Technique Ltd	United Kingdom	100%	100%	100%
OrthoView Holdings Ltd	United Kingdom	100%	100%	100%
Materialise SA	Poland	100%	100%	100%
Materialise Colombia SAS	Colombia	100%	100%	100%
Materialise Motion NV	Belgium	100%	100%	50%
Materialise Shanghai Co.Ltd	China	100%	100%	100%
Engimplan Engenharia de Implante Industria & Comércio Ltda	Brazil	100%	100%	75%
Engimplan Holding Ltda	Brazil	100%	100%	100%
Materialise Limited	South-Korea	100%	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%
Tianjin Zhenyuan Materialise Medical Technology Ltd	China	51%	—	—

*The overview provides the equity interest held as of 31 December of each respective year.

The entities Materialise GmbH, 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, 2020 and 2021.

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, 2021.

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.