



Europäisches
Patentamt
European
Patent Office
Office européen
des brevets

Financial Statements Accounting Period **2019**

Financial Statements

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Audit opinion

The audit opinion on the following page is originally provided in the Report of the Board of Auditors of the European Patent Organisation accessible via the EPO's website.

1. Opinion

The Board of Auditors has audited the financial statements, comprising the statement of comprehensive income, the statement of financial position, statement of changes in equity, statement of cash flows and notes (Article 69(1)(a) of the Financial Regulations), together with the bookkeeping system of the European Patent Organisation (EPO) for the accounting period 1 January to 31 December 2019.

In our opinion, the accompanying financial statements give a true and fair view of the financial position of the EPO as at 31 December 2019, and its financial performance and its cash flows for the year then ended in accordance with Article 50(g) of the European Patent Convention (EPC) and the Financial Regulations (FinRegs).

2. Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the “Auditor’s Responsibilities for the Audit of the Financial Statements”. We are independent of the EPO as required by the ethical standards in accordance with Article 50(g) of the European Patent Convention (EPC) and the Financial Regulations (FinRegs) that are relevant to our audit of the financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

3. Responsibilities of the President of the EPO for the financial statements

The President of the EPO is responsible for the preparation and fair presentation of the financial statements in accordance with Article 50(g) of the European Patent Convention (EPC) and the Financial Regulations (FinRegs). Under Article 1(3) FinRegs, the generally accepted accounting principles of the EPO are the International Financial Reporting Standards (IFRSs) as promulgated by the International Accounting Standards Board (IASB). Furthermore, the President of the EPO is responsible for such internal control as necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the President of the EPO is responsible for assessing the EPO’s ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the EPO or to cease operations, or has no realistic alternative but to do so.

4. Auditors’ responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors’ report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with ISAs, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- a. Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- b. Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the EPO's internal control.
- c. Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the President of the EPO.
- d. Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the EPO's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the EPO to cease to continue as a going concern.
- e. Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

5. Other matters

The Office has changed the principles for recognising the defined benefit obligations. The change, reducing the booked obligations by EUR 1 052m, is adequately described in paragraph 2.4.

From March 2020, the coronavirus epidemic has had a major negative impact on both the operations of the Office and the financial value of the assets. The main positions that are affected include the RFPSS assets, the EPO Treasury Investment Fund and the defined benefit liability. This event does not change the financial value as of 31 December 2019, and the long-time effect cannot be reliably estimated.

Munich, 15 April 2020

Board of Auditors

H. Schuh

O. Hollum

F. Angermann

Financial Statements

Statement of Comprehensive Income for the year ended 31 December 2019

		in '000 EUR	
	Notes	2019	2018
Revenue			
Revenue from patent and procedural fees	(3)	1 991 003	1 992 990
Other revenue	(3)	11 009	11 449
Other operating income	(5)	20 139	10 689
Work performed and capitalised	(11)	463	3 047
Employee benefit expenses	(6)	(1 859 911)	(1 907 840)
Depreciation and amortisation expenses	(10)(11)	(58 772)	(63 060)
Other operating expenses	(7)	(239 077)	(252 554)
Operating result		(135 146)	(205 279)
Finance revenue	(8)	1 784 557	21 104
Finance costs	(9)	(436 024)	(973 434)
Financial result		1 348 533	(952 330)
Profit/(loss) for the year		1 213 387	(1 157 609)
Other comprehensive income			
Items that will not be reclassified to profit or loss:			
Remeasurement defined benefit obligations	(21)	(8 041 438)	1 285 661
Items that may be reclassified subsequently to profit or loss:		-	-
Total comprehensive income/loss for the year		(6 828 051)	128 052

The notes are an integral part of the financial statements.
Regarding potential future national renewal fees, see Notes 2.5.3 and 4.

Statement of Financial Position as at 31 December 2019

		in '000 EUR	
Assets	Notes	2019	2018
Non-current assets			
Property, plant and equipment	(10)	733 506	661 847
Intangible assets	(11)	33 192	38 382
RFPSS financial assets		9 329 007	7 706 874
RFPSS other assets		640	613
RFPSS restricted cash		264 845	200 583
RFPSS financial liabilities		(694)	(5 874)
RFPSS other liabilities		(97)	(426)
RFPSS net assets	(13)	9 593 701	7 901 770
Investments	(14)	2 954 704	2 460 194
Home loans to staff	(15)	89 946	88 186
Other assets	(17)	124 462	86 757
Total non-current assets		13 529 511	11 237 136
Current assets			
Trade and other receivables	(18)	192 086	154 920
Home loans to staff	(15)	8 161	7 928
Other financial assets	(16)	—	58 000
Prepaid expenses	(19)	20 247	19 334
Cash and cash equivalents	(20)	61 165	54 859
Total current assets		281 659	295 041
Total assets		13 811 170	11 532 177

		in '000 EUR	
Equity and liabilities	Notes	2019	2018
Equity			
Retained earnings		(1 627 532)	(2 840 919)
Other components of equity		(16 004 730)	(7 963 292)
Total equity		(17 632 262)	(10 804 211)
Non-current liabilities			
Defined benefit liability	(21)	29 868 880	20 840 775
Salary Savings Plan obligation	(22)	124 117	86 393
Other employee-related liabilities	(23)	24 455	23 581
Lease liabilities	(12)	65 056	1 854
Prepaid fees and refund liabilities	(3)	513 574	584 436
Total non-current liabilities		30 596 082	21 537 039
Current liabilities			
Other employee-related liabilities	(23)	169 790	164 988
Trade and other payables	(24)	205 685	202 081
Lease liabilities	(12)	16 213	1 085
Provisions	(25)	9 541	12 776
Prepaid fees and refund liabilities	(3)	446 121	418 419
Total current liabilities		847 350	799 349
Total liabilities		31 443 432	22 336 388
Total equity and liabilities		13 811 170	11 532 177

The notes are an integral part of the financial statements.
Regarding potential future national renewal fees, see Notes 2.5.3 and 4.

Statement of Changes in Equity for the year ended 31 December 2019

in '000 EUR

	Issued capital	Reserves		Total equity
		Cumulative changes in equity not recognised through profit or loss	Retained earnings	
Balance at 1 January 2018	–	(9 248 953)	(1 617 870)	(10 866 823)
Changes in equity for 2018				
Remeasurement defined benefit obligations		1 285 661	–	1 285 661
Impact of adopting IFRS 15 using the cumulative effect method			(65 440)	(65 440)
Profit (loss) for the period		–	(1 157 609)	(1 157 609)
Balance at 31 December 2018	–	(7 963 292)	(2 840 919)	(10 804 211)
Changes in equity for 2019				
Remeasurement defined benefit obligations		(8 041 438)	–	(8 041 438)
Profit (loss) for the period		–	1 213 387	1 213 387
Balance at 31 December 2019	–	(16 004 730)	(1 627 532)	(17 632 262)

The notes are an integral part of the financial statements.
Regarding potential future national renewal fees, see Notes 2.5.3 and 4.

Statement of Cash Flows for the year ended 31 December 2019

in '000 EUR

	Notes	2019	2018
Cash flows from operating activities			
Profit/(loss) of the year		1 213 387	(1 157 609)
Adjustments for:			
Depreciation and amortisation	(10)(11)	58 772	63 060
Disposal of property, plant and equipment	(10)	1 608	469
Disposal of bonds		—	(14 974)
Other gains and losses		(48 473)	55 241
Revaluation of financial instruments		(1 606 394)	758 833
Net interest		(44 040)	(58 208)
Dividend income		(111 993)	(92 749)
Changes in net defined benefit liability	(21)	986 667	1 038 801
Changes in Salary Savings Plan obligation	(22)	37 724	6 828
Changes in provisions	(25)	(3 235)	6 086
Changes in prepaid fees	(3)	(43 161)	(59 142)
Changes in assets and liabilities carried as working capital		(28 821)	(25 053)
Total		412 041	521 583
Cash flows from investing activities			
Proceeds from disposal/settlement of:			
Property, plant and equipment		16	—
Investments/cash received upon maturity		—	2 529 528
Purchases of:			
Property, plant and equipment		(19 311)	(50 688)
Intangible assets		(5 975)	(14 684)
Investments		(169 980)	(2 824 301)
Change in bank deposits > 3 months		58 000	87 000
Home loans granted to staff		(16 800)	(16 800)
Repayment of staff home loans		14 448	15 280
Cash outflow from the purchase of RFPSS assets		(3 534 820)	(3 264 542)
Cash inflow from the sale of RFPSS assets		3 193 868	2 880 368
Cash inflow/(outflow) from decrease/(increase) in restricted cash		(64 262)	22 663
Interest received		38 948	82 453
Dividends received		111 509	88 232
Total		(394 359)	(465 491)
Cash flows from financing activities			
Interest paid		(949)	(93)
Repayment of lease liabilities		(10 415)	(3 415)
Total		(11 364)	(3 508)
Net increase/(decrease) in cash and cash equivalents	(20)	6 318	52 584
Cash and cash equivalents net of bank overdrafts at the beginning of the period		54 859	2 291
Effect of exchange rate changes on cash and cash equivalents		(12)	(16)
Cash and cash equivalents net of bank overdrafts at the end of the period		61 165	54 859

The notes are an integral part of the financial statements.
Regarding potential future national renewal fees, see Notes 2.5.3 and 4.

Notes

1. General information

The European Patent Organisation (the Organisation or the EPO) is an intergovernmental organisation set up pursuant to the European Patent Convention (EPC) which entered into force in 1977. It is the outcome of the European countries' collective political determination to establish a unitary patent system in Europe.

The Organisation comprises its legislative body, the Administrative Council, and its executive body, the European Patent Office (the Office). The Organisation is represented by the President of the Office. The task of the Organisation is to grant European patents, and is carried out by the Office supervised by the Administrative Council.

The Organisation is a legal entity and has its seat in Munich, a branch at The Hague/Rijswijk and sub-offices in Berlin and Vienna. The address of its head office is Bob-van-Benthem-Platz 1, 80469 Munich, Germany.

As laid down in the EPC and in the Organisation's Financial Regulations (FinRegs), the financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as provided by the International Accounting Standards Board (IASB).

These financial statements were authorised for issue by the President on 2 April 2020.

With respect to the information provided in the Statement of Comprehensive Income and in the Statement of Financial Position, it should be noted that

- the EPO is an intergovernmental organisation, thus the Contracting States are obliged to finance any deficit;
- the value of future national renewal fees cannot be shown as an asset but is an essential factor for the Organisation's actual financial position.

For more details, see Notes 2.5.3 and 4 on future renewal fees for European patents.

2. Summary of significant accounting policies

The principal accounting policies applied in the preparation of these financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated. As required by amended IAS 1, the EPO presents profit or loss and other comprehensive income in one statement – Statement of Comprehensive Income – with expenses analysed by nature.

2.1 Basis of preparation

The financial statements of the EPO have been prepared in accordance with IFRS. The financial statements have been prepared on a historical cost basis, except for financial instruments measured at fair value and the defined benefit obligation measured in accordance with IAS 19. The financial statements are presented in euro (EUR) and all values are rounded to the nearest thousand (EUR '000) unless otherwise indicated.

In accordance with IFRS 8 – Operating Segments the Organisation has not prepared segment reporting, as IFRS 8 must be applied only by entities whose debt or equity securities are publicly traded and by those in the process of issuing such securities in public securities markets.

New, revised or early-adopted standards and interpretations affecting the Financial Statements in the current year (and/or prior years)

IFRS 16 – Leases. This new standard specifies how IFRS reporting entities have to recognise, measure, present and disclose leases. It provides a single lessee accounting framework, requiring lessees to recognise assets and liabilities for all leases. Lessors continue to classify leases as operating or finance. The EPO initially applied IFRS 16 Leases from 1 January 2019. The EPO applied IFRS 16 using the modified retrospective approach, under which the cumulative effect of initial application is recognised in retained earnings at 1 January 2019. Accordingly, the comparative information presented for 2018 is not restated but it is presented, as previously reported, under IAS 17 and related interpretations.

On transition to IFRS 16, the EPO elected to apply IFRS 16 to contracts previously identified as lease in the sense of IAS 17, and did not apply IFRS 16 to contracts previously identified as not-lease in the sense of IAS 17.

For leases previously identified as operating leases in the sense of IAS 17, the EPO recognised the right-of-use assets as of 1 January 2019 at an amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payment related to that lease recognised before 1 January 2019. Initial direct costs, if any, have been excluded from the measurement of the right-of-use asset at the date of initial application. Former operating leases ending within 12 months after the 1 January 2019 have been accounted for as short term leases. Lease liabilities recognised as at 1 January 2019 were measured using the incremental borrowing rate of the EPO on that date. The weighted average rate applied is 1,67%.

For leases previously identified as finance leases in the sense of IAS 17, the carrying amount of the right-of-use asset and the lease liability as at 1 January 2019 were determined at the carrying amount of the lease asset and lease liability under IAS 17 immediately before that date.

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

The initial application of IFRS 16 at the EPO resulted in the recognition of additional right-of-use assets and additional lease liabilities in the Statement of financial position as at 1 January 2019. The impact of the transition is summarised below:

Impact of IFRS 16 on Statement of Financial Position
as of 01.01.2019

	in '000 EUR
	Opening balance 01.01.2019
Right-of-use assets - Property, plant and equipment	34 920
Lease liabilities	34 920
Total equity	–

Reconciliation of lease commitments at 31.12.2018 with lease liabilities
as of 01.01.2019

	in '000 EUR
Operating lease commitments as of 31. December 2018:	44 684
Committed leases not commenced (undiscounted):	(4 421)
Recognition exemption:	
- low value leases (undiscounted)	(262)
- effect from discounting	(5 081)
Lease liabilities recognised as of 1 January 2019	34 920
Existing IAS 17 finance lease liabilities as of 31.12.2018	2 939
Total lease liabilities as of 1 January 2019	37 859

Standards, amendments and interpretations to existing standards that are new or revised but not yet effective and have not been adopted early by the Organisation

IFRS 17 – Insurance Contracts. This new standard introduces a new measurement model for insurance liabilities, based on the present value of future fulfilment cash flows. The standard has an effective date of 1 January 2021. This standard will have no impact on the EPO's accounts.

Amendments to IFRS 3 – Definition of a Business. These amendments entail changes to the defined terms in Appendix A, the application guidance and the illustrative examples of IFRS 3 only. They are applicable to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after 1 January 2020. The pronouncement will have no impact on the EPO's accounts.

Amendments to IAS 1 and IAS 8 – Definition of Material. These amendments clarify the definition of "material" and align the definition used in the Conceptual Framework and the standards. They are applicable to annual periods beginning on or after 1 January 2020. The amendments clarify that materiality will depend on the nature or magnitude of infor-

mation, or both. An entity will need to assess whether the information, either individually or in combination with other information, is material in the context of the financial statements. The amendments to the definition of material are not expected to have a significant impact on the EPO's financial statements.

Interest Rate Benchmark Reform (Amendments to IFRS 9, IAS 39 and IFRS 7). The amendments deal with issues affecting financial reporting in the period before the replacement of an existing interest rate benchmark with an alternative interest rate and address the implications for specific hedge accounting requirements. Interbank offered rates (IBORs) are interest reference rates, such as LIBOR or EURIBOR that represent the cost of obtaining unsecured funding. The amendments are effective for annual periods beginning on or after 1 January 2020, with earlier application permitted. They will have no impact on the EPO's financial statements.

The Conceptual Framework for Financial Reporting. It sets out a comprehensive set of concepts for financial reporting, standard setting, guidance for preparers in developing consistent accounting policies and assistance to others in their efforts to understand and interpret the standards. For preparers who develop accounting policies based on the Conceptual Framework, it is effective for annual periods beginning on or after 1 January 2020. The changes will have no material impact on the EPO's accounting policies.

Interpretations and amendments to existing standards which became effective in 2019 but are not relevant for the Organisation's operations.

IFRIC 23 – Uncertainty over Income Tax Treatments. This interpretation addresses the topic of taxable profit when there is uncertainty over income tax treatments under IAS 12 and is applicable to annual reporting periods beginning on or after 1 January 2019.

Amendments to IAS 28 – Investments in Associates and Joint Ventures. These amendments clarify the accounting for long-term interests in an associate or joint venture. The amendments are applicable to annual periods beginning on or after 1 January 2019.

Amendments to IFRS 9 – Prepayment Features with Negative Compensation. These amend the existing requirements in IFRS 9 regarding termination rights in order to allow measurement at amortised cost (or, depending on the business model, at fair value through other comprehensive income) even in the case of negative compensation payments. The amendment is applicable to annual periods beginning on or after 1 January 2019.

Amendments to IAS 19 – Plan Amendment, Curtailment or Settlement. These include two changes:

- If a plan amendment, curtailment or settlement occurs, it is now mandatory that the current service cost and the net interest for the period after the remeasurement are determined using the assumptions used for the remeasurement.
- In addition, amendments have been included to clarify the effect of a plan amendment, curtailment or settlement on the requirements regarding the asset ceiling.

The amendments are applicable to annual periods beginning on or after 1 January 2019.

The Annual Improvements to IFRSs 2015-2017 Cycle are applicable to annual periods beginning on or after 1 January 2019.

2.2 Consolidation

Although the RFPSS have to be internally treated and reported as a special class of asset of the Organisation, the EPO does not prepare consolidated financial statements, because under IFRS the Organisation constitutes a single entity.

2.3 Foreign currency translation

The financial statements are presented in euro, the Organisation's functional currency. Foreign currency transactions are translated into euro using the exchange rates prevailing at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the Statement of Comprehensive Income.

2.4 Significant accounting judgements and estimates

The preparation of financial statements requires management to make estimates and assumptions that affect amounts reported in the financial statements in order to conform to IFRS. These estimates and assumptions affect the reported amounts of assets and liabilities, the disclosure of contingent liabilities on the balance sheet date and the reported amounts of revenue and expenses during the reporting period. The estimates and judgements are continually evaluated and are based on historical experience, third-party transactions and other factors, including expectations of current and future events that are believed to be reasonable under the circumstances. The following significant accounting judgements and estimates and related assumptions and uncertainties inherent in the accounting policies applied are essential to an understanding of the underlying financial reporting risks and the effects on the financial statements.

The liabilities relating to the defined benefit pension plans as defined in Note 2.15.2 and other post-employment benefits are determined using actuarial valuations. The actuarial valuation involves making assumptions about discount rates, future salary increases, career development, mortality rates, the duration of incapacity to work, future pension increases and other actuarial parameters. The mortality table in use at the EPO is regularly adjusted for both serving staff and pensioners. For active staff, it is adjusted every two years, to take into account probable future increases in life expectancy. The mortality table applied by the Office is the International Civil Servants Life Table (ICSLT) produced by the ISRP which is a table specific to international civil servants based in Europe. The ICSLT 2013 mortality table, in use since 2014, was updated during 2018 by the ISRP and issued in February 2019 as the ICSLT 2018 mortality table. The EPO decided to maintain the ICSLT 2013 for the calculation of the 2018 year-end liabilities. During 2019, EPO's Actuarial Advisory Group (AAG) recommended the use of an EPO specific mortality table based on the ICSLT 2018 mortality table. In particular, the AAG made two changes to the 30-year longevity improvements of the stand-

ard ICSLT 2018 table. First, it recalibrated the trend to better match the EPO pensioner population. Second, in view of technical reasons and taking into account first signals of a slow-down in expected increases in life expectancy, the AAG reduced at this stage the horizon of longevity improvements from 30 years to 10 years. This assumption will be reviewed in 2021. An early adoption of the EPO specific ICSLT 2018 tables would have increased the previous year total defined benefits liabilities by 4.3%. Calculation of the defined benefit plan also means making assumptions to determine the level of lump-sum payments as tax compensation for the national tax levied on pensions (disclosed as “tax adjustment”). Due to the long-term nature of these plans, such estimations are subject to significant legal and actuarial uncertainties (see also Note 27).

The Organisation exercises judgement in measuring and recognising provisions related to outstanding legal claims. Judgement is necessary in assessing the likelihood that an outstanding legal claim will succeed and to quantify the possible range of the final settlement.

Provisions are recorded for liabilities when losses are expected from executory contracts, or a loss is considered probable and can be reasonably estimated. Because of the inherent uncertainties, actual losses may be different from the originally estimated provision. These estimates are updated when new information becomes available.

Development costs are capitalised in accordance with the accounting policy in Note 2.10. Determining the amounts to be capitalised requires management to make assumptions about e.g. technological feasibility, expected benefits, allocation of costs to research or development phases, and the costs directly attributable to development of the assets.

National renewal fees for the fourth quarter of the reporting period not received before the closure of the accounts are accrued using estimates based on the average amount received in previous periods.

The Organisation exercises judgement in measuring the net present value of potential future national renewal fees disclosed in Note 4. Determining this amount requires management to make assumptions about discount rates, exchange rates and the life expectancy of patents in the different countries where they have been validated.

2.5 Revenue recognition

2.5.1. Revenue from patent and procedural fees

2.5.1.1. Patent granting, opposition and appeal procedures (EPC and Euro-PCT)

The EPO, as the patent granting authority for Europe, processes patent applications from filing up to grant (or refusal), opposition procedures against granted patents and appeals against EPO decisions.

A European patent can be obtained in one of two ways:

- (a) European route: direct European patent application (EPC application)
- (b) International route: European patent application derived from an international application filed under the Patent Cooperation Treaty (Euro-PCT application).

Principles of revenue recognition for fees from patent granting, opposition and appeal procedures

As of 1 January 2018, the EPO has recognised its revenue in accordance with **IFRS 15 Revenue from Contracts with Customers**. When a patent application is filed, a contract is established between the EPO and the patent applicant, creating enforceable rights and obligations for both parties. However, the EPO does not usually have individual customer contracts in place but instead performs its patent examination services on the basis of the legal regulations (EPC and PCT) under which patent applicants file their applications.

Patent granting, opposition and appeal procedures are fully standardised at the EPO and consist of different steps.

The fees for each step and the corresponding due dates are regulated in the European Patent Convention of 5 October 1973 and its Implementing Regulations and the Rules relating to Fees of 20 October 1977.

The patent applicant can decide at any time to abandon the procedure by not paying a fee which is due; the EPO then deems the application to be withdrawn.

The fees related to each step are standardised and determine the transaction price related to the contract with customer.

In most cases, the EPO does not start performing the service related to each step until the applicant has paid the fees involved.

Revenue from patent and procedural fees is recognised in the Statement of Comprehensive Income when the EPO satisfies its performance obligation, i.e. when it transfers the service. Costs are expensed as incurred. Fees received as payment for services for which the performance obligation has not yet been fully satisfied or for which the patent applicant is entitled to a refund are presented at the closing date as a liability.

The prepaid fees, recognised in the Statement of Financial Position as liabilities (from contracts with customers), are carried forward and recognised as revenue upon full satisfaction of the related performance obligation as follows:

- **Filing and page fees:** the underlying performance obligation, namely examination of the patent application for compliance with the formal requirements, is satisfied completely by the EPO shortly after filing/entry into European phase. Payment is due within one month of the filing date.
- **Search fees and claims fees** included in the transaction price: the underlying performance obligation for the search service is fully satisfied once the search report has been dispatched to the patent applicant. According to Article 9.2 of the Rules relating to Fees, an applicant may be entitled to a full or partial refund of the search fees if the EPO was able to make use of a search report previously drawn up by it.

Furthermore, the applicant can decide at any time to cancel the search contract with the EPO either actively (withdrawal of the application) or passively (application deemed to be withdrawn). According to Article 9.1 of the Rules relating to Fees, the search fee paid for a European or supplementary European search is to be fully refunded if the European pat-

ent application is withdrawn, refused or deemed to be withdrawn at a time when the EPO has not yet begun to draw up the search report.

- **Examination fees and claims fees** included in the transaction price: the underlying performance obligation for the examination service is fully satisfied once the written communication of the intention to grant the patent or the decision to refuse the application has been sent to the patent applicant.

The patent applicant can decide at any time to cancel the examination contract with the EPO either actively (withdrawal of the application) or passively (application deemed to be withdrawn). Under Article 11(a) of the Rules relating to Fees (as in force from 1 July 2016), the examination fee provided for in Article 94(1) EPC is to be refunded in full if the European patent application is withdrawn, refused or deemed to be withdrawn before substantive examination has begun.

Under Article 11(b) of the Rules relating to Fees, as in force from 1 November 2016, the examination fee provided for in Article 94(1) EPC is to be refunded at a rate of 50% if the European patent application is withdrawn after substantive examination has begun but before either expiry of the time limit for replying to the first Article 94(3) communication issued by the examining division, even if the applicant has already replied, or, in the case of a direct grant (i.e. no previous Art. 94(3) communication), before the date on which the Rule 71(3) communication is dispatched.

Article 11(b) of the Rules relating to Fees applies to all applications for which substantive examination started on or after 1 November 2016 and applies only if they are withdrawn, not if they are refused or deemed to be withdrawn.

- **Grant and printing fees:** these fees are due four months after completion of the examination service by the EPO. The underlying performance obligation for the grant service is fully satisfied once the patent is published.
- **Opposition fees:** the underlying performance obligation is fully satisfied once the opposition proceedings have been closed, i.e. once a final decision by the opposition division has been communicated to the parties.
- **Appeal fees:** the underlying performance obligation is fully satisfied once the appeal proceedings have been closed, i.e. once a final decision by the board of appeal has been communicated to the parties.
- **Limitation fees:** the underlying performance obligation is fully satisfied once the examining division's decision as to whether or not the request for limitation is allowable has been communicated to the requester.

The following remaining fees are accounted for as current revenue upon receipt and are not adjusted for prepaid fees:

- **Designation, extension and validation fees:** there is no performance obligation related to these fees; they are one-off fees payable to ensure protection of the invention in the EPC contracting and extension/validation states of the applicant's choice. The underlying service has already been fully performed by the EPO at the date of filing, before payment of the fee is due.

As these fees are not refundable in any case, a liability for received payments for designation or extension and validation fees not yet due at the year-end closing date is not recognised in the Statement of Financial Position.

Due to the lack of a legal payment obligation by the patent applicant, a trade receivable for potentially receivable fees at the closing balance sheet date with a due date in the following period is not recognised in the Statement of Financial Position.

- **Renewal fees for patent applications:** payment of renewal fees for patent applications is not subject to the EPO's fulfilment of a performance obligation; they are due in advance on a yearly basis starting from the third year after the filing date. Therefore, a deferral of the amount for renewal fees for patent applications covering two financial periods is not recognised. The last renewal fee payable in respect of a European patent application covers the year in which mention of the grant of the patent is published. Renewal fees validly paid three months (six months for the third renewal fee) before the due date under Rule 51(1) EPC are refundable and therefore recognised as prepayments.

For information on renewal fees post-grant, see Note 2.5.1.3 below.

2.5.1.2. Searches and preliminary examinations on international applications (PCT procedure)

The EPO as an International Searching and Preliminary Examining Authority also performs international searches and preliminary examinations on international applications under the Patent Cooperation Treaty.

The due dates of the related fees are established by the World Intellectual Property Organization in the Patent Cooperation Treaty of 19 June 1970, as last amended on 3 October 2001, and the amounts are fixed in the Rules relating to Fees of 20 October 1977.

Principles of revenue recognition for searches and preliminary examinations for international applications

In most cases, the EPO does not start performing the service involved until the requisite fee has been paid.

As in the EPC and Euro-PCT procedure, revenue is recognised in the Statement of Comprehensive Income when the EPO satisfies its performance obligation, i.e. when it transfers the service.

Costs are expensed as incurred. Fees received as payment for services for which the performance obligation has not yet been fully satisfied or for which the patent applicant is entitled to a refund are presented at the closing date as prepaid.

The prepaid fees, recognised in the Statement of Financial Position as liabilities, are carried forward and released to current revenue as follows:

- **International and international-type search fees:** the underlying performance obligation is fully satisfied once the search report has been dispatched to the patent applicant. As prescribed by Rule 41.1 PCT, when establishing the international search report on an international application in its capacity as International Searching Authority, the EPO must, to the extent possible, use the results of any earlier search performed by it. It must then fully or partially refund the search fee, depending on the extent of use it was able to make of the results of that previous search.
- **PCT Chapter II examination fees:** the underlying performance obligation is fully satisfied once the international preliminary examination report has been dispatched to the patent applicant and the examining division has completed its work.

2.5.1.3. National renewal fees for granted European patents

After a European patent has been granted, renewal fees for subsequent years during its term are payable to the designated Contracting States. Under Article 39 EPC, each Contracting State pays to the Organisation, for each European patent maintained in that state, a proportion of its national renewal fee fixed by the Administrative Council and which may not exceed 75% and is the same for all Contracting States (this proportion has been 50% since 1984). If that proportion is less than a uniform minimum amount fixed by the Administrative Council, the Contracting State has to pay that minimum to the Organisation. The structure and level of national renewal fees are fixed by the Contracting States.

The national patent offices of the Contracting States make these payments to the EPO on a quarterly basis.

Principles of revenue recognition for national renewal fees for granted European patents

National renewal fees for granted patents for the first three quarters of the year (due dates 30 April, 31 July and 30 October) are recognised as revenue upon receipt of payment. National renewal fees for the fourth quarter (due date 31 January) are accrued on the basis of cash received before year-end closure. Amounts not received by that date are accrued using estimates based on the average amount received in the first three quarters of the year. There is no EPO performance obligation associated with post-grant renewal fees.

2.5.1.4. Searches for national offices and third parties

Revenue from **searches for national offices and third-party searches** are recognised upon satisfaction of the corresponding performance obligation, i.e. upon rendering of the service and issue of the invoice involved. To reflect better the nature of these revenues and to align them with the internal reporting on search products, they have been reclassified in 2019 from other revenue to revenue from patent and procedural fees. The revenue classification for the comparative period was adjusted accordingly.

2.5.2 Other revenue

Other revenue includes **revenue from patent information services, sales of patent information products and administrative fees, with the following principles of revenue recognition:**

- Revenue from **patent information services** is recognised upon satisfaction of the corresponding performance obligation, i.e. upon rendering of the service and issue of the invoice involved.
- For **sales of patent information products**, the revenue is recognised once control over the goods is transferred to the buyer.
- Revenue from **administrative fees** is recognised upon satisfaction of the corresponding performance obligation i.e. upon rendering of the administrative service.

2.5.3 Potential future national renewal fees for European patents

The EPO's costs related to the patent granting process from filing up to grant are covered only partly by its own procedural fees, the remainder being financed from national renewal fees for granted European patents, payable for each year the patent is maintained in force (see also Note 2.5.1.3). Further information on the financing of the EPO is provided in Note 30.4 on capital management.

This is reflected in the Organisation's fee policy: when fixing its fees for the specific services delivered in the grant procedure, potential national renewal fees for granted patents are explicitly taken into account.

Since there is no legal obligation on the patentee to maintain the patent for the maximum term (20 years) by paying the renewal fees involved, and since the structure and level of the fees are defined by the contracting states, the net present value of expected future national renewal fees on granted patents is presented in the notes but not recognised in the Statement of Comprehensive Income and the Statement of Financial Position. It is also possible that EPO income from these fees, together with that from renewal fees for pending applications, will not cover its remaining costs in granting the patent. As such future operating losses do not meet the criteria of a liability, the EPO recognises no provision for onerous contracts.

The net present value of potential future national renewal fees for European patents is calculated on the basis of estimated cash flows per Contracting State and year. These cash flows are discounted in line with their expected timing using the discount rates from the zero-coupon yields curve extrapolated from the Euro iBoxx[®] indices for corporates with an AA rating.

The estimated cash flows are based on the actual number of granted patents until year-end, and their life expectancy in the different countries where they have been validated.

Life expectancy and national validations are estimated using historical statistics for each contracting state.

The current renewal-fee distribution key and the fee amounts laid down by the contracting states are taken as constant values over the expected term of the patents.

2.6 Finance revenue and finance costs

Gains or losses arising from changes in the fair value of financial assets through profit and loss are presented in the Statement of Comprehensive Income, in the financial result section, in the period in which they arise.

Interest from assets measured at amortised cost is calculated using the effective interest method and recognised in financial income on an accrual basis. Interest from assets measured at fair value is recognised on an accrual basis.

Dividend income is recognised when the right to receive the payment is established.

2.7 Leases

The EPO has applied IFRS 16 as from 1 January 2019 using the modified retrospective approach. Therefore the comparative information has not been restated and continues to be reported under IAS 17 and IFRIC 4.

Policy applicable from 1 January 2019

At inception of a contract, the EPO assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

As a lessee

The EPO recognises a right-of-use asset and a lease liability at the lease commencement date. The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset.

The right-of-use asset is subsequently depreciated using the straight-line method from the commencement date to the end of the lease term, or over the useful life of the underlying asset. The right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability.

The lease liability is initially measured at the present value of the discounted lease payments at the commencement date.

The EPO uses its incremental borrowing rate as the discount rate, the incremental borrowing rate being the estimated rate that the EPO would have to pay to borrow the funds necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions.

Lease payments included in the measurement of the lease liability comprise fixed payments, in-substance fixed payments, variable lease payments that depend on an index or a rate and the exercise price of a purchase options that the EPO is reasonably certain to exercise, lease payments in an optional renewal period if the EPO is reasonably certain to exercise an extension option, and penalties for early termination of a lease unless the EPO is reasonably certain not to terminate the lease contract early.

The lease liability is measured at amortised cost using the effective interest method.

The EPO presents the right-of-use in 'property, plant and equipment' in the statement of financial position.

The EPO has elected not to recognise right-of-use assets and lease liabilities for leases of low-value assets and short-term leases, including IT equipment. The EPO recognises the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

As a lessor

When the EPO acts as a lessor, it determines at lease inception whether the lease is a finance lease or an operating lease. To classify each lease, the EPO makes an overall assessment of whether the lease transfers substantially all of the risks and rewards incidental to ownership of the underlying asset. Generally, the accounting policies applicable to the EPO as a lessor in the comparative period were not different from IFRS 16.

Policy applicable before 1 January 2019

As a lessee

A lease is classified as a finance lease if it transfers to the lessee substantially all of the risks and rewards incidental to ownership. All other leases are treated as operating leases. Whether a lease is a finance lease or an operating lease depends on the substance of the transaction rather than the legal form of the contract.

An item under finance lease is capitalised at the start of the lease at its fair value or, if lower, at the present value of the minimum lease payments. Lease payments are apportioned between the finance charges and reduction of the lease liability so as to achieve a constant rate of interest on the remaining balance of the liability. Finance charges are directly expensed. Capitalised leased assets are depreciated over the estimated useful life of the asset.

As a lessor

Operating lease payments are recognised as an expense in the Statement of Comprehensive Income on a straight-line basis over the lease term.

2.8 Income taxes

In accordance with Article 4 of the EPO's Protocol on Privileges and Immunities (EPO-PPI), the EPO and its property and income are exempt from all direct taxes within the scope of its official activities.

2.9 Property, plant and equipment

Property, plant and equipment are stated at cost (including borrowing cost, if any) less accumulated depreciation and any impairment in value. Depreciation is calculated on a straight-line basis over the estimated useful life of the asset as follows:

Land	not depreciated
Building components	10-50 years
Office equipment	3-20 years

The expected useful life of property, plant and equipment is reviewed at each year-end and adjusted if necessary.

For its buildings, the EPO applies the component approach, and depreciates parts of buildings with different useful lives separately. The depreciation periods for the components are as follows:

Construction of buildings	50 years
Facade	30 years
Fitting out	20 years
Technical installations	20 years
Electrical installations	10 years

If a part of a component is replaced, the new investment is added to the existing component's value, subject to IFRS recognition criteria, and the useful life of the component is extended accordingly. The carrying amount of the replaced part is derecognised. Repairs and maintenance are charged to the Statement of Comprehensive Income during the financial period in which they were incurred.

Assets that are subject to depreciation are reviewed for impairment whenever events or changes in circumstances indicate that the carrying value may not be recoverable. If such an indication exists and the carrying value exceeds the estimated recoverable amount, assets are written down to their recoverable amount.

For the purpose of assessing impairment, assets are grouped at the lowest level for which there are separately identifiable cash flows (cash generating units).

Property, plant and equipment that have suffered impairment are reviewed for possible reversal of the impairment at each reporting date. Specific rules relating to the impairment of intangible assets are described in Note 2.10.

An item of property, plant and equipment is derecognised upon disposal or when no future economic benefits are expected from its use and subsequent disposal. Any gain or loss arising on derecognition of the asset is included in the Statement of Comprehensive Income in the period in which the item is derecognised.

If an asset is kept with the intention to sell and is available for immediate sale in its present condition then it is reclassified to "assets held for sale". After reclassification the asset is no longer depreciated. Assets classified as held for sale are measured at the lower of their carrying amount and fair value less cost to sell.

2.10 Intangible assets

Intangible assets acquired separately are capitalised at cost. Following initial recognition, an intangible asset is carried at its cost less any accumulated amortisation. The depreciable amount of an intangible asset is allocated on a straight-line basis over its useful life. The acquired software is amortised over the period of 3-5 years. The amortisation period of acquired information systems is determined individually, depending on the expected useful life of the system. Some intangible assets are amortised over 20 years, including databases used by EPO examiners in the patent granting procedure. The amortisation period and method are reviewed at least at each financial year-end. If the expected useful life of the asset is significantly different from previous estimates, the amortisation period is changed accordingly.

Internal and external development costs of the intangible assets generated by the EPO are capitalised if they meet the recognition criteria:

- completion of the asset is technically feasible
- the EPO intends to complete the asset and use or sell it
- the EPO is able to use or sell the asset
- the asset is expected to generate future economic benefits
- the financial and technical resources necessary to complete the asset are available
- the costs attributable to the asset during its development can be measured reliably.

The costs incurred in the research phase of internal projects are expensed.

The costs of capitalised internally generated intangible assets comprise:

- the cost of services used in generating the asset
- the cost of internal employees involved in generating the asset
- other internal costs of materials, services and depreciation incurred in generating the asset
- programme management cost
- borrowing cost, if any.

EPO accounting policy is to capitalise the costs of internal development of intangible assets or significant, separately identifiable enhancement if the total internal and external costs over the whole project life exceed EUR 3m.

The internal costs for generating the asset include salaries allocated to the project based on the time used by internal staff for development activities (and recorded in an IT-based system) and any other directly attributable expenditure. External costs included in the capitalised projects mainly comprise fees for IT consultants, the purchase price of development software and hardware and the cost of developing and implementing specific system modules.

Intangible assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying value may not be recoverable. The asset concerned is impaired only if it is no longer in use. This policy is applied for two reasons:

- the intangible assets owned by the EPO are not traded in an active market, which renders any reliable calculation of the recoverable amount impossible
- the smallest cash-generating unit to which these intangible assets belong is the EPO as a whole. No reliable estimate of the value in use by the EPO can be made because the EPO is a non-profit institution and its mission contains non-measurable goals (such as promoting a knowledge-based society in Europe).

Intangible assets not yet ready for use are reviewed for impairment at each reporting date.

Intangible assets that have suffered impairment are reviewed for possible reversal of the impairment at each reporting date.

An intangible asset is derecognised on disposal or when no future economic benefits are expected from its use and subsequent disposal. Gains or losses arising from the retirement or disposal of an intangible asset are determined as the difference between the net disposal proceeds and the carrying amount of the asset and should be recognised as income or expense in the Statement of Comprehensive Income.

2.11 Other assets

Since 2009, the Office has had a contract with FIL Investments International UK – Niederlassung Frankfurt, Kronberg im Taunus, Germany and FIL Pensions Services GmbH, Kronberg im Taunus, Germany, for asset management services and individual account administration services in connection with the implementation and administration of the Organisation's Salary Savings Plan (SSP). Since the introduction of the SSP, reimbursement rights due from the external service providers are capitalised as other assets measured at fair value determined by obtaining the market price at the balance sheet date. The term "reimbursement right", in this context, denotes the total contributions paid into each individual account plus the corresponding investment returns. SSP reimbursement rights are the Organisation's property within the meaning of Article 4 EPO-PPI. They are a special class of asset of the Organisation designed solely to settle the amounts owed. Fair value changes are recognised in the Statement of Comprehensive Income as finance revenue or finance costs. The main characteristics of the SSP are summarised in Note 22. A corresponding liability is recognised and presented separately in the Statement of Financial Position ("Salary Savings Plan obligation").

The repurchase value of insurance contracts agreed between the former Institut International des Brevets (ex-IIB) and several insurance companies is presented as a separate asset. The Organisation measures these assets at fair value determined by obtaining the repurchase values from the market makers.

2.12 Financial instruments

Since 1 January 2018, the EPO applies IFRS 9 (2014) to the reporting of financial instruments.

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

Financial assets and liabilities are recognised in the Statement of Financial Position when the EPO becomes a party to the contractual provisions of the instrument. Regular purchases and sales of financial assets are recognised on the trade-date – the date on which the EPO commits to purchase or sell the asset. Financial assets are derecognised when the rights to receive cash flows from the investments have expired or have been transferred and the EPO has transferred substantially all risks and rewards of ownership. A financial liability is derecognised when the obligation specified in the contract is discharged or cancelled or expires.

Initially, financial instruments are recognised at fair value. For the purpose of measurement at subsequent reporting dates, the EPO classifies its financial assets according to IFRS 9 in the following categories: at fair value through profit or loss, and at amortised cost. The classification depends on the purpose for which the financial asset was acquired, and is defined at initial recognition. The business model for managing the financial assets and the contractual cash-flow characteristics of financial assets are also determined at initial recognition, and re-evaluated at each reporting date.

Financial assets are classified as current if expected to be settled within 12 months; otherwise, they are classified as non-current.

RFPSS assets are held with the aim of covering future pension payments. Estimates based on the actuarial studies have shown that the net payments to pensioners are not expected in the short term. Therefore all RFPSS assets are presented as non-current.

(a) Financial instruments at fair value through profit or loss

EPO Treasury Investment Fund (EPOTIF)

The EPOTIF portfolio is managed, evaluated and measured on a fair value basis and is not held to collect contractual cash flows. The portfolio comprises standard and other bonds, shares, funds, derivatives and other instruments. The performance of both assets and liabilities included in the EPOTIF portfolio is managed on a fair value basis. Consequently, the EPOTIF portfolio is measured at fair value through profit and loss.

After initial recognition, the fair value of EPOTIF investment units is measured on the basis of the Net Assets Value as published by the capital management company in charge of the fund administration (Master KVG).

RFPSS assets

The RFPSS portfolio is managed and evaluated on a fair value basis and is not held to collect contractual cash flows. The portfolio comprises standard and other bonds, shares, funds, derivatives and other instruments. The performance of both assets and liabilities included in the RFPSS portfolio is managed on the fair value basis. Consequently, the RFPSS portfolio is measured at fair value through profit and loss.

At initial recognition the instruments in this category are measured at fair value. Transaction costs are expensed in profit or loss for the period in which they were incurred. The instruments that are actively traded in the market are valued at the market auction price (also called close price) on the balance sheet date. If there is no active market for financial instruments, the last available price from the market maker is used. Gains or losses are recognised in the Statement of Comprehensive Income in the financial result section. The instruments held both by the EPOTIF and RFPSS are managed on a portfolio basis, so gains and losses on investments are presented net in the Statement of Comprehensive Income. A gross presentation is disclosed in Note 30.3.

(b) Financial instruments at amortised cost

Bonds

Until November 2018 the EPO held a bonds portfolio that was managed within a business model whose objective was to hold financial assets in order to collect contractual cash flows that are solely payments of principal and of interest on the principal.

Bonds held by the Office are debt instruments actively traded in organised financial markets. Bonds are measured after initial recognition at amortised cost using the effective interest method.

Gains or losses are recognised in the Statement of Comprehensive Income when the asset is derecognised or impaired and through the amortisation process.

Home loans

Home loans are granted to the EPO staff for the construction, purchase or conversion of residential property at an interest rate lower than the prevailing market one. Therefore, the fair value at initial recognition is estimated as the present value of all future cash receipts discounted using the prevailing market rate of interest for a similar instrument with a similar credit rating.

After initial recognition, home loans are measured at amortised cost using the effective interest method. They are split into non-current and current, based on the remaining term of the loan.

Trade and other receivables

After initial recognition, trade and other receivables are measured at amortised cost using the effective interest method, and discounted only if they are due in more than one year. Bad debts are written off when they become uncollectible, usually due to insolvency of the client. In such cases, the carrying amount of the trade receivables is reduced directly, rather than recognising the impairment on a separate account.

Other financial assets

Fixed-term deposits with a maturity longer than 3 months are shown under other financial assets and are measured at amortised cost.

Cash and cash equivalents

Cash and cash equivalents in the Statement of Financial Position comprise cash at banks and in hand, as well as short-term deposits with an original maturity of three months or less, and are measured at amortised cost. For the purposes of the Statement of Cash Flows, cash and cash equivalents are presented as defined above, net of any outstanding bank overdrafts, which are shown as such in the Statement of Financial Position.

RFPSS restricted cash

RFPSS financial instruments include "restricted cash", i.e. cash used for purchase or received from sale of RFPSS investments. Cash and cash equivalents of the RFPSS comprise cash at

bank, short-term deposits, i.e. with an original term to maturity of three months or less from the balance sheet date, and cash collateral relating to derivative transactions (margin account). According to the EPO regulations, this cash cannot be used for operational purposes, but only for post-employment benefit payments. Therefore, the cash of the RFPSS is presented separately as a part of non-current RFPSS net assets and is measured at amortised cost.

Trade and other payables

Trade and other liabilities are initially recognised at fair value. They are subsequently measured at amortised cost under the effective interest method, if applicable. Trade payables also include liabilities for goods received or services already performed but not yet invoiced.

RFPSS other assets

RFPSS other assets comprise mainly tax receivables and amounts receivable from the sale of RFPSS assets.

RFPSS other liabilities

The amounts payable for the purchase of RFPSS assets, as well as other trade payables, are presented under this heading.

Lease liabilities

Reference is made to Note 2.7.

Impairment

The EPO recognises an expected credit loss allowance on financial assets that are measured at amortised cost. The loss allowance is measured at an amount equal to 12 months' expected credit losses unless the credit risk on the financial instrument has increased significantly since initial recognition, in which case the loss allowance is measured at an amount equal to the lifetime expected credit losses. The credit loss on the financial asset is measured as the present value of the difference between the cash flows that are due to the EPO under the contract and the cash flows that the EPO expects to receive.

Fair value measurements

The EPO uses the following techniques and inputs to determine the fair value measurements:

- The fair value of instruments that are actively traded in the market is measured at the market auction price (also called close price) on the balance sheet date.
- The fair value of instruments for which there is no active market is measured at the last available price from the market maker.
- The fair value of EPOTIF investment units is measured on the basis of the Net Assets Value as published by the capital management company in charge of the fund administration (Master KVG).
- The fair value of bonds held by the Office is determined on the basis of quoted market prices. The price used for valuation is the closing price on the last trading day of the financial year.
- The fair value of home loans is calculated as the present value of the future cash flows discounted using the prevailing market interest rates and applying the Moosmüller

method. Interest rates used as input for the model are Euribor rates and the rates of AAA-rated Euro-area central-government bonds.

The EPO's policy is to recognise transfers into and out of fair value levels as of the date of the event or change in circumstances that caused the transfer.

2.13 Prepaid expenses

To ensure that the Statement of Comprehensive Income shows only expenses for services actually rendered or goods actually received within the accounting period, the initially posted cash-based expenses are adjusted for prepaid expenses at the closing date.

2.14 Equity

In compliance with the EPC, no issued capital is designated.

2.15 Employee benefits

Employee benefits comprise any benefits payable by the EPO to current or former employees and to those entitled under them (beneficiary) for services rendered.

2.15.1 Short-term employee benefits

Short-term employee benefits are those benefits (other than post-employment benefits) that are expected to be wholly settled within twelve months as of the end of the annual reporting period in which the services were rendered. Obligations resulting from short-term employee benefits are presented in the Statement of Financial Position as other employee-related liabilities (current). These liabilities mainly concern bonus payments and compensated absences such as regular annual leave and home leave which are determined by applying an average daily cost rate, based on year-end figures, on granted but untaken leave.

2.15.2 Post-employment benefits – defined benefit liability

Post-employment benefits are employee benefits (other than termination benefits) which are payable after the completion of employment. Defined contribution plans are post-employment benefit plans under which an entity pays fixed contributions into a separate entity and will have no legal obligation to pay further contributions if the separate entity does not hold sufficient assets to pay all employee benefits relating to employee service in the current and prior periods. A defined benefit plan is a pension plan that is not a defined contribution plan. At the EPO, defined benefit plans define an amount of pension benefit that a beneficiary will receive on retirement, usually dependent on one or more factors such as age, years of service and pay. Assets held to fund part of the pension obligations, lump-sum payments made in tax compensation for national taxation of pensions, long-term care (LTC)

insurance, and sickness insurance for pensioners and those entitled under them are invested by the RFPSS but do not represent plan assets in terms of IAS 19.8.

The Organisation operates four plans treated as defined benefit obligations (DBOs) for its employees:

- a retirement pension plan including retirement for health reasons, any tax compensation thereon, and family allowances
- an LTC plan
- a sickness insurance for pensioners
- a death insurance involving lump-sum payments.

As of 1 April 2015, the EPO introduced new rules on incapacity (formerly known as invalidity). This reform affected the defined benefit plans for pensions and the death & invalidity insurance involving lump-sum payments.

a) Under the old scheme, employees of the EPO could be assigned to non-active status for reasons of invalidity. These employees were exempt from service and they received an invalidity allowance, a tax adjustment (if the allowance was taxed nationally) and a lump sum for permanent invalidity equivalent to 33 months of basic salary. In view of its obligation to pay invalidity allowances, tax adjustments and lump sums in case of invalidity, the EPO built up actuarially measured provisions for the potential risk for those payments, classified as DBOs.

b) Under the new scheme, if upon expiry of the extended sick leave period under the EPO Service Regulations as currently worded the employee is still unable to perform his duties or other similar duties he is declared to be on incapacity, on the basis of a medical opinion. During incapacity, he remains in active service. He is entitled to a proportion of his basic salary and salary-related allowances equal to the time worked, and 70% of the basic salary and salary-related allowances for the time he is discharged from duties for reasons of incapacity. Incapacity is always temporary, except for staff with severe health problems. If the medical condition is assumed to be permanent and the employee is not expected to recover, he is retired for health reasons if he has reached 55 years of age and has been totally discharged from his duties for reasons of incapacity for ten years.

The employee's state of health is periodically reviewed, to determine whether or not he still fulfils the conditions for incapacity and, if so, whether the proportion of incapacity and its duration should be adjusted. Incapacity ends on return to full-time work or on termination of service through retirement. Thus, the lump sum paid under the old scheme in case of invalidity has been abolished.

As a transitional measure, those in receipt of an invalidity allowance upon entry into force of the new regulations are not subject to the new incapacity scheme, but are entitled to a retirement pension.

The change in the invalidity scheme as per 1 April 2015 had the following consequences for EPO accounting purposes:

Those in receipt of invalidity allowances before the reform's entry into force went into final retirement before the reform. The provision for their invalidity allowances and tax adjustments remained unchanged but was treated as retirement pension.

For all employees declared to be on incapacity following a medical opinion, a provision is recognised on a case-by-case basis for 70% of their basic salary and salary-related allowances for that part of time for which they are discharged from duties for reasons of incapacity, during the entire expected period of incapacity. Since there is no vesting period, for all such employees vesting occurs immediately following the declaration that they are incapacitated. Therefore, no provisions are recognised for the potential risk of incapacity in the group of active employees.

Allowances to persons on non-active or retired status are considered as post-employment benefits accounted for under the rules of defined benefit plans, whereas the salary (or percentage thereof) and salary-related allowances payable during discharge from service for reasons of incapacity are considered as other long-term employee benefits.

The potential risk of retirement for health reasons is recognised under the normal pension scheme of the EPO.

2.15.3 Pension plan

The liability recognised in the Statement of Financial Position in respect of the defined benefit pension plan is the present value of the defined benefit obligation (DBO) at the balance sheet date, together with adjustments – if any – for past service costs.

The DBO is calculated annually by independent actuaries at the OECD's International Service for Remunerations and Pensions (ISRP) using the projected unit credit method, taking into account not only the pension obligations and vested pension rights known at the balance sheet date but also expected future salary increases, career development and demographic assumptions about mortality, employee turnover, retirement for health reasons and other actuarial parameters. The present value of the DBO is also determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds that are denominated in the currency in which the benefits will be paid and that have terms to maturity approximating to the terms of the related pension liability. The increase in the present value of the DBO resulting from the employees' service in the current period is classified as service costs.

Actuarial gains and losses are recognised, in total, in other comprehensive income in the period in which they arise.

A beneficiary of the defined benefit pension plan as defined above who took up duty before 1 January 2009 can be entitled to tax compensation ("tax adjustment") applying to the contracting state of the Organisation in which the pension and adjustment relating thereto are chargeable to income tax under the tax legislation in force in that state. The adjustment is equal to 50% of the amount by which the recipient's pension would theoretically need to be increased, were the balance remaining after deduction of the amount of national income tax or taxes on the total to correspond to the amount of the pension calculated without income taxes. For such purpose, the Organisation uses tables of equivalence specifying, for each amount of pension and each country of residence, the amount of the adjustment to be added thereto.

When the EPO introduces a new defined benefit plan, or changes the benefits payable under an existing plan, the difference in DBO is recognised as past service cost.

EPO employees who have previously worked in national government departments, international organisations or industry may be able to arrange for inward transfer, into the EPO pension scheme, of retirement pension rights accrued under their previous schemes. In such cases, the EPO determines the number of years' reckonable service credited under its own pension scheme. Valuation differences resulting from inward transfers are taken into account as past service cost.

The interest component of the addition to provisions contained in pension expenses is classified as interest costs. Current service costs and past service costs are classified as employee benefit expenses.

2.15.4 Other post-employment benefit obligations

The Organisation provides health and LTC insurance for its pensioners and those entitled under them. There is also insurance cover for the risks of death and invalidity for former staff members who have not yet reached the age of 60. The expected costs of these benefits are accrued over the period of employment using the same accounting methodology as for defined benefit pension plans.

Actuarial gains and losses are recognised in the period in which they occur, in total, in retained earnings. The obligations are valued annually by independent qualified actuaries.

Post-employment health insurance is a defined benefit plan managed by the insurance broker Cigna International Health Services BVBA, Antwerp, Belgium (Cigna). The obligation for this insurance is calculated on the basis of the anticipated medical costs and the EPO's estimated future contributions to the insurance contracts given the medical cost for the current population of pensioners and those entitled under them. Payments to beneficiaries are made directly by Cigna on behalf of the EPO. Under the system in place until 2016, the EPO paid insurance premiums to Cigna; in 2017, this system was replaced by a self-insurance model administered by Cigna. As a result of this change, the EPO no longer pays a fixed insurance premium per insured family but pays plan participants' medical costs itself. The benefits paid are calculated taking into account the graph of refunds by age, based on the refunds made to the beneficiaries by Cigna.

Post-employment LTC insurance is also classified as a defined benefit plan. Insured on a compulsory basis are former employees and their dependent children, former employees in receipt of an invalidity or retirement pension and their dependent children, and dependent children in receipt of an orphan's pension following the death of the insured person. There are also persons who are insured on a voluntary basis. The LTC insurance benefits are calculated in proportion to salaries. Depending on the degree of reliance on LTC identified, the monthly benefit paid corresponds to defined percentages of the monthly basic salary.

A deferred pensioner can irrevocably opt for LTC insurance. The Office assesses the probability of deferred pensioners remaining in the LTC scheme. Any deviation between the estima-

tion of the Office and the actual number of insured persons is recognised as an actuarial gain or loss in Other Comprehensive Income.

The death insurance is a defined benefit plan managed by the Organisation. Under this plan, beneficiaries receive a lump sum, based on the deceased's last salary, in the event of death. The benefits are calculated in proportion to salaries. Payments to beneficiaries are made directly by the Organisation and financed by the contributions of staff members and the Organisation. The actuarial present value of the death benefits is based on the benefits promised under the terms of the plan as described in Note 21.2.4 using the projected salary levels and the risk of death in service for each plan participant at the balance sheet date. The regular cash settlements after each three-year period, if any, do not affect the actuarial present value of the death obligation.

2.15.5 Other long-term employee benefits

2.15.5.1 Salary Savings Plan (SSP) obligation

The Organisation operates an SSP managed by external service providers. The amount of the SSP received by the beneficiaries is recognised as an obligation from other long-term employee benefits and is determined by the amount of contributions paid by the Office and the beneficiary to that plan, together with investment returns on the contributions. Contributions paid by the EPO are included in employee benefit expenses. In contrast to the accounting treatment of pension and other post-employment benefit obligations, any gains and losses are recognised immediately in the Statement of Comprehensive Income as finance revenue or finance costs. The Salary Savings Plan obligation is presented in the Statement of Financial Position as a separate line item. The main characteristics of the SSP are summarised in Note 22.

2.15.5.2 Incapacity

For any permanent employee declared to be on incapacity following a medical opinion, a provision is recognised on a case-by-case basis for 70% of their basic salary and salary-related allowances for that part of time for which they are discharged from duties for reasons of incapacity, during the entire expected period of incapacity. During 2018 the incapacity scheme was opened up to employees working on fixed-term contracts.

2.15.5.3 Other employee-related liabilities (non-current)

Non-SSP employee benefit obligations payable during employment but more than one year after the end of the period in which the employee service was rendered, are presented in the Statement of Financial Position as other employee-related liabilities (non-current).

2.15.6 Termination benefits

Termination benefits, if any, are payable when employment is terminated by the Organisation before the normal retirement date and the EPO is contractually committed to such payments. Benefits due more than 12 months after the balance sheet date are discounted to their present value. Termination benefit obligations are presented in the Statement of Financial Position as part of other employee-related liabilities (current/non-current).

2.16 Provisions

Provisions are recognised when the Organisation has a present legal or constructive obligation as a result of past events, it is more likely than not that an outflow of resources will be required to settle the obligation and the amount can be reliably estimated. Provisions are not recognised for future operating losses.

If the effect is material, a provision is determined by discounting the expected future cash outflow using a rate that reflects current market assessments of the time value of money and the risks specific to the obligation. This increase in the provision due to passage of time is recognised as finance costs.

2.17 Prepaid fees and refund liabilities

Prepaid fees and refund liabilities (contract liabilities) are recognised under IFRS 15 **Revenue from Contracts with Customers** to record fee payments received for services for which the performance obligation has not yet been fully satisfied or for which the payer is entitled to a refund, as well as prepayments for renewal fees for patent applications. See Note 2.5 above.

3. Revenue from contracts with customers

The following tables show the disaggregation of the EPO revenue by major products:

3.1 Revenue from patent and procedural fees and other revenue

The revenue breaks down into the following categories:

	in '000 EUR	
	2019	2018
Revenue from patent and procedural fees		
Procedural fees related to the patent grant process (Note 3.2)	1 354 804	1 392 381
National renewal fees for granted patents	581 679	543 322
Searches for national offices and third parties	54 520	57 287
Total	1 991 003	1 992 990
Other revenue		
Patent information services and products	8 203	8 451
Administrative fees	2 806	2 998
Total	11 009	11 449

3.2 Procedural fees related to the patent grant process

The different categories of patent grant-related services contributed to patent fee income as follows:

Procedural fees related to the patent grant process	in '000 EUR	
	2019	2018
Filing – EPC and Euro-PCT	60 134	56 011
Searches – EP and Euro-PCT	155 366	150 930
International searches-PCT	122 664	128 065
Examination – EPC and Euro-PCT	292 772	297 287
International preliminary examination-PCT	11 584	14 938
Grant – EP and Euro-PCT	128 391	119 683
Opposition	3 781	3 750
Appeal	5 241	3 868
Designation, extension and validation fees	93 328	90 755
Renewal fees for patent applications	476 153	520 048
Others	5 390	7 046
Total	1 354 804	1 392 381

3.3 Contract balances

The following table provides information about receivables as well as prepaid fees and refund liabilities (contract liabilities) from contracts with customers:

Contract balances	in '000 EUR	
	2019	2018
Receivables, which are included in "Trade and other receivables" (see note 18)	147 303	127 978
Prepaid fees and refund liabilities	959 695	1 002 855
Thereof Prepaid fees	957 536	999 964
Thereof Refund liabilities	2 159	2 891

Prepaid fees are recognised to record fee payments received for services for which the EPO has not yet fully satisfied its performance obligations as well as prepayments on patent application renewal fees which are refundable on the date of the financial statements.

Refund liabilities include the amount of refunds due at the balance-sheet date which have not yet been paid out.

The following tables show the significant changes in the prepaid fees balances during the reporting period:

in '000 EUR

Prepaid fees	Opening balance 01.01.2019*	Revenue recognised that was included in the prepaid fees at the beginning of the period	Decreases of prepaid fees due to cancellation of the contract	Increases due to cash received excluding amounts recognised as revenue during the period	Ending balance 31.12.2019
Filing – EPC and Euro-PCT	17 865	(17 365)	(200)	18 825	19 125
Searches – EP and Euro-PCT	97 051	(90 440)	(1 356)	98 308	103 563
International searches-PCT	32 840	(32 493)	(254)	33 554	33 647
Examination – EPC and Euro-PCT	796 852	(240 294)	(63 250)	253 496	746 804
International preliminary examination-PCT	5 538	(5 290)	(25)	4 413	4 636
Grant – EP and Euro-PCT	17 860	(17 293)	(303)	16 508	16 772
Opposition	5 789	(3 351)	(208)	3 438	5 668
Appeal	20 492	(5 579)	(352)	7 400	21 961
Others	5 677	(5 522)	(130)	5 335	5 360
Total	999 964	(417 627)	(66 078)	441 277	957 536

in '000 EUR

Prepaid fees	Opening balance 01.01.2018*	Revenue recognised that was included in the prepaid fees at the beginning of the period	Decreases of prepaid fees due to cancellation of the contract	Increases due to cash received excluding amounts recognised as revenue during the period	Ending balance 31.12.2018
Filing – EPC and Euro-PCT	16 949	(16 429)	(185)	17 530	17 865
Searches – EP and Euro-PCT	95 383	(88 740)	(1 790)	92 198	97 051
International searches-PCT	33 287	(32 872)	(133)	32 558	32 840
Examination – EPC and Euro-PCT	864 527	(245 630)	(68 590)	246 545	796 852
International preliminary examination-PCT	6 845	(6 595)	(15)	5 303	5 538
Grant – EP and Euro-PCT	14 415	(13 877)	(281)	17 603	17 860
Opposition	6 101	(3 285)	(243)	3 216	5 789
Appeal	17 992	(4 054)	(233)	6 787	20 492
Others	3 756	(3 629)	(104)	5 654	5 677
Total	1 059 255	(415 111)	(71 574)	427 394	999 964

*The opening balance in 2018 includes the IFRS 15 adjustment of EUR 65m booked as retained earnings.

The prepaid fees balances correspond to the transaction price allocated to the remaining performance obligations from contracts with customers. Slight modifications to the transaction price are possible if the patent applicant amends the amount of claims or pages during the patent application process.

For European, Euro-PCT and international searches, the full amount of the transaction price will not be realised as revenue due to the fact that applicants may be entitled to a refund if the search performed was based on an earlier search drawn up by the EPO and the EPO was able to profit fully or partially from the results of that earlier search. For more details on the search fee refund rules, please refer to Note 2.5 “Revenue recognition”.

As an indication, the amounts of refunds paid out per year due to the use of previous search reports are:

- For European and Euro-PCT searches: EUR 16.8m (2018: EUR 14.2m), which is 12% (2018: 11%) of the annual revenue for this product category.
- For international PCT searches: EUR 36.4m (2018: EUR 35.7m), which is 32% (2018: 30%) of the annual revenue for this product category.

Furthermore, examination, European and Euro-PCT search fees will not be fully or partly realised as revenue if applicants cancel the contract by withdrawing their application actively or passively or by closing the proceedings. In these cases the EPO will no longer have any performance obligation. Refunds may fall due depending on whether or not the examiner has started work when the cancellation takes effect. The amounts of cancelled contracts per product are shown separately in the first table above.

As an indication, the amounts of refunds paid out per year due to active or passive withdrawal by the applicant are:

- For examination: EUR 28.1m (2018: EUR 32.4m), which is 10% (2018: 11%) of the annual revenue for this product category.
- For European and Euro-PCT searches: EUR 1.7m (2018: EUR 1.6m), which is 1% (2018: 1%) of the annual revenue for this product category.

In line with its planned production schedule, the EPO expects to satisfy its remaining performance obligations as per balance sheet date for its two main products, search and examination, within:

– 3.5 months (2018: 3.2 months) for searches – EP and Euro-PCT
– 2.3 months (2018: 2.2 months) for international searches -PCT
– 21.1 months (2018: 22.5 months) for examination – EP and Euro-PCT
– 4.0 months (2018: 3.4 months) for international preliminary examinations- PCT

4. Potential future national renewal fees for European patents

As at the balance sheet date the net present value of these fees was EUR 5 190m (2018: EUR 4 697m).

Cash flows have been estimated individually per Contracting State and year over the term remaining after grant in each Contracting State. The renewal rates were derived from the behaviour of patent proprietors in the post-grant phase as currently observed.

The discount rates applied in line with the term of the expected cash flows ranged between -0.20% and 0.99% in 2019 (2018: between -0.13% and 1.88%). A one percentage point increase in the discount rates applied would result in a decrease of EUR 293m (2018: EUR 255m) in the net present value of potential future national renewal fees.

For further information see Notes 2.4 and 2.5.3.

5. Other operating income

		in '000 EUR
Other operating income	2019	2018
Reversal of impairment	12 819	—
Fees for European Qualifying Examination	1 868	1 820
Release accruals from prior years	1 692	4 158
Reimbursement additional site costs Berlin	787	816
Rental income	745	733
Income from valuation of insurance funds	119	840
Other	2 109	2 322
Total	20 139	10 689

Further information regarding the reversal of impairment is presented in Note 10.

Operating leases – The EPO as lessor

The EPO has entered into a number of minor agreements to lease out limited parts of office premises. All of these contracts are classified as operating leases with fixed payments subject to periodical adjustments for inflation. The income from these contracts in 2019 was EUR 680k (2018: EUR 733k).

Maturity analysis of the non-cancellable lease payments to be received by the EPO at 31 December 2019 (undiscounted):

Year	in '000 EUR
2020	619
2021	368
2022	379
2023	198
2024	198
2025 and later	188
Total	1 950

6. Employee benefit expenses

Employee benefit expenses	in '000 EUR	
	2019	2018
Current service cost (net of staff contributions)	755 779	837 242
Basic salaries permanent employees	755 079	733 905
Allowances and other benefits	239 569	237 800
Healthcare and other cost of social security	32 096	29 069
School and day-care centres	23 972	26 159
Remuneration of other employees	6 478	7 642
Past service costs	32 516	20 835
Training	5 075	6 356
Other	9 347	8 832
Total	1 859 911	1 907 840

Detailed information on current service cost is presented in Note 21.

7. Other operating expenses

Other operating expenses	in '000 EUR	
	2019	2018
IT maintenance	102 806	105 296
Property and equipment maintenance	42 350	50 261
Consultancy and other external services	40 105	36 611
Patent information and public relations	13 962	14 392
Co-operation and meetings	12 281	11 735
Documentation	10 411	10 147
Travel	4 909	5 401
Postage and telecommunications	4 277	4 341
Other	7 976	14 370
Total	239 077	252 554

8. Finance revenue

Finance revenue	in '000 EUR	
	2019	2018
Interest income from bonds	—	8 663
Interest income from bank accounts and deposits	12	74
Interest income from home loans	2 807	3 039
Valuation gains on investments	324 531	—
Valuation gains on RFPSS financial instruments	1 435 047	—
Valuation gains (losses) assets Salary Savings Plan	22 160	(5 657)
Gains from sale of bonds	—	14 974
Other	—	11
Total	1 784 557	21 104

Further information on gains from financial instruments is presented in Note 29.3.

9. Finance costs

Finance costs	in '000 EUR	
	2019	2018
Interest costs on defined benefit obligations	412 915	358 852
Valuation losses on investments	—	96 848
Valuation losses on RFPSS financial instruments	—	523 297
Interest costs lease	949	93
Increase (decrease) obligation Salary Savings Plan	22 160	(5 657)
Other	—	1
Total	436 024	973 434

Further information on losses from financial instruments is presented in Note 29.3.

10. Property, plant and equipment

The reconciliation of the carrying amount of property, plant and equipment for the reporting period is as follows:

	in '000 EUR			
	Land	Buildings	Office equipment	Total
Cost at 31 December 2018	174 732	1 088 825	143 522	1 407 079
Right-of-use assets initially recognised at 1 January 2019	0	33 892	1 028	34 920
Cost at 1 January 2019	174 732	1 122 717	144 550	1 441 999
Additions	—	15 170	57 966	73 136
Disposals/Retirements	—	(17 884)	(49 982)	(67 866)
Transfers	—	—	—	—
Cost at 31 December 2019	174 732	1 120 003	152 534	1 447 269
Accumulated depreciation 1 January 2019	(12 819)	(605 286)	(127 127)	(745 232)
Depreciation for the year	—	(35 828)	(11 763)	(47 591)
Disposals/Retirements	—	16 296	49 945	66 241
Transfers	—	—	—	—
Reversal of impairment loss	12 819	—	—	12 819
Accumulated depreciation 31 December 2019	—	(624 818)	(88 945)	(713 763)
Impairment loss for the year	—	—	—	—
Accumulated impairment 31 December 2019	—	—	—	—
Net carrying value 1 January 2019	161 913	517 431	17 423	696 767
Net carrying value 31 December 2019	174 732	495 185	63 589	733 506
Including construction in progress				
1 January 2019	—	19 132	—	19 132
31 December 2019	—	6 554	—	6 554

The reversal of impairment loss refers to the land plot for the EPO's building PschorrHöfe BA8 in Munich. In 2007, an impairment testing had resulted in the recognition of an impairment loss amounting to EUR 12.8m. A new expert valuation performed in 2019 shows that the value of the land now exceeds its initial purchase price. As a consequence, the impairment loss posted in 2007 has been fully reversed. The corresponding income is presented as other operating income in the statement of comprehensive income.

For details about the right-of-use assets recognised as of 1 January 2019, see Note 12. The major additions to the property, plant and equipment in 2019 relate to the new right-of-use assets: the rented building in Haar (Munich) and the external data centre. The asset retirements include mainly obsolete IT network servers, the fitting out of the demolished old Main building and other rented buildings in The Hague.

The EPO building at Bob-van-Bentham-Platz 1 in Munich was constructed under the hereditary building lease granted to the EPO by the German government in 1980 and ending on 8 August 2075. The Hinge building in The Hague was constructed on land leased from the Netherlands in 1988 for a period of 80 years ending on 30 May 2068, for the token amount of EUR 0.45 per year.

The comparative figures are presented in the table below:

	in '000 EUR			
	Land	Buildings	Office equipment	Total
Cost at 1 January 2018	174 732	1 045 817	139 355	1 359 904
Additions	—	43 358	7 931	51 289
Disposals/Retirements	—	(350)	(3 764)	(4 114)
Transfers	—	—	—	—
Cost at 31 December 2018	174 732	1 088 825	143 522	1 407 079
Accumulated depreciation 1 January 2018	(12 819)	(577 198)	(122 646)	(712 663)
Depreciation for the year	—	(28 088)	(8 126)	(36 214)
Disposals/Retirements	—	—	3 645	3 645
Transfers	—	—	—	—
Accumulated depreciation 31 December 2018	(12 819)	(605 286)	(127 127)	(745 232)
Impairment loss for the year	—	—	—	—
Accumulated impairment 31 December 2018	(12 819)	—	—	(12 819)
Net carrying value 1 January 2018	161 913	468 619	16 709	647 241
Net carrying value 31 December 2018	161 913	483 539	16 395	661 847
Including construction in progress				
1 January 2018	—	204 140	—	204 140
31 December 2018	—	19 132	—	19 132

11. Intangible assets

The reconciliation of the balances of intangible assets for the reporting period is as follows:

	in '000 EUR			
	Acquired software	Acquired information systems	Internally generated systems	Total
Cost at 1 January 2019	15 714	54 600	108 415	178 729
Additions	3 776	—	2 215	5 991
Disposals	(5 381)	—	(2 758)	(8 139)
Transfers	—	—	—	—
Cost at 31 December 2019	14 109	54 600	107 872	176 581
Accumulated amortisation 1 January 2019	(13 672)	(52 408)	(74 267)	(140 347)
Amortisation for the year	(1 886)	(434)	(8 861)	(11 181)
Amortisation disposals	5 381	—	2 758	8 139
Amortisation transfers	—	—	—	—
Accumulated amortisation 31 December 2019	(10 177)	(52 842)	(80 370)	(143 389)
Net carrying value 1 January 2019	2 042	2 192	34 148	38 382
Net carrying value 31 December 2019	3 932	1 758	27 502	33 192
Including construction in progress				
1 January 2019	—	—	9 269	9 269
31 December 2019	—	—	8 628	8 628

The comparative figures are as follows:

	in '000 EUR			
	Acquired software	Acquired information systems	Internally generated systems	Total
Cost at 1 January 2018	14 644	54 600	94 701	163 945
Additions	1 070	—	13 714	14 784
Disposals	—	—	—	—
Transfers	—	—	—	—
Cost at 31 December 2018	15 714	54 600	108 415	178 729
Accumulated amortisation 1 January 2018	(13 069)	(51 974)	(48 458)	(113 501)
Amortisation for the year	(603)	(434)	(25 809)	(26 846)
Amortisation disposals	—	—	—	—
Amortisation transfers	—	—	—	—
Accumulated amortisation 31 December 2018	(13 672)	(52 408)	(74 267)	(140 347)
Net carrying value 1 January 2018	1 575	2 626	46 243	50 444
Net carrying value 31 December 2018	2 042	2 192	34 148	38 382
Including construction in progress				
1 January 2018	—	—	21 937	21 937
31 December 2018	—	—	9 269	9 269

Additions of acquired software relate mainly to new software licences, while the disposals for that category of assets result from the retirements of licences that were no longer in use and were fully amortised. Disposals of internally generated systems refer mainly to an obsolete, fully amortised IT system.

The EPO invests in the development of information systems to support its operations. The figures for these internally generated systems include both external and internal costs. The capitalised internal costs amounting to EUR 0.5m (2018: EUR 3.1m) are presented in the Statement of Comprehensive Income as work performed and capitalised.

In 2018, the amortisation of internally generated systems included an impairment loss amounting to EUR 18.7m for the eDossier project. The impairment resulted from the EPO management decision to stop the project entirely due to concerns over the expected benefits and feasibility of the programme. The impairment related to assets under construction (EUR 16.7m) and assets in use (EUR 2.0m).

Internally generated systems still in the development phase (construction in progress) include:

	2019	2018
IT Transformation Track	7 364	7 476
IT Semi-Automatic Search	1 264	1 793
Total	8 628	9 269

in '000 EUR

12. Right-of-use assets and liabilities from leases

The EPO entered a number of leasing contracts as a lessee, to address specific needs concerning the office space and IT equipment. A substantial part of the right-of-use assets recognised by the EPO at 31 December 2019 is related to the dedicated facilities and IT hardware of a data centre, while another significant part is related to the leasing of office space in Haar (district of Munich). All right-of-use assets are presented in the balance sheet under property, plant and equipment (see Note 10).

The following amounts have been recognised during the reporting period in the statement of financial position for right-of-use assets:

	Buildings	Office equipment	Total
Balance at 1 January 2019	33 892	4 338	38 230
Additions	5 477	48 347	53 824
Depreciation	(3 402)	(7 583)	(10 985)
Balance at 31 December 2019	35 967	45 102	81 069

in '000 EUR

The amounts recognised during the reporting period in the statement of financial position statement of comprehensive income were as follows:

2019	in '000 EUR
Interest on lease liabilities	949
Expenses relating to short term leases	0
Expenses relating to leases of low-value assets	910
Total	1 859
<hr/>	
2018	in '000 EUR
Operating leases under IAS 17 - 2018	
Lease expense	10 745

The following amounts have been recognised during the reporting period in the statement of cash flows:

2019	in '000 EUR
Total cash outflows for leases	12 279

The maturity structure of undiscounted lease liabilities at 31 December 2019 was as follows:

Undiscounted lease liabilities 31.12.2019	in '000 EUR
Less than 1 year	17 458
Between 1 years and 5 years	46 509
Over 5 years	21 941
Total	85 908

The EPO does not have lease contracts that contain substantial variable lease payments. Substantial subleasing and sale-and-lease-back transactions did not take place during the reporting year. No leasing costs have been included in the carrying amount of other assets.

The leasing contracts related to buildings contain standard provisions according to which future lease payments are increased periodically to reflect changes of the relevant consumer price indexes. These potential increases of lease payments may lead to future cash outflows that are not reflected in the current measurement of lease liabilities. The increases will be reflected both in the right-of-use assets and lease liabilities at the time they become effective.

Substantial payments concerning extension or termination options, residual value guaranties, and leases committed not yet commenced are not present in the EPO leasing contracts. The contracts do not include any financial restrictions or covenants for the EPO.

13. RFPSS net assets

The value of RFPSS assets per post-employment benefit plan as at 31 December is as follows:

	in '000 EUR			
2019	Pensions	LTC	Sickness insurance	Total
RFPSS financial assets	8 410 678	205 362	712 967	9 329 007
RFPSS other assets	577	14	49	640
RFPSS restricted cash	238 774	5 830	20 241	264 845
RFPSS financial liabilities	(625)	(15)	(54)	(694)
RFPSS other liabilities	(87)	(2)	(8)	(97)
Total	8 649 317	211 189	733 195	9 593 701

	in '000 EUR			
2018	Pensions	LTC	Sickness insurance	Total
RFPSS financial assets	6 952 123	161 686	593 065	7 706 874
RFPSS other assets	554	13	46	613
RFPSS restricted cash	180 939	4 208	15 436	200 583
RFPSS financial liabilities	(5 299)	(123)	(452)	(5 874)
RFPSS other liabilities	(385)	(9)	(32)	(426)
Total	7 127 932	165 775	608 063	7 901 770

The major categories of RFPSS net assets are as follows:

RFPSS net assets	2019	2018
	in %	
Domestic government bonds	15.1	21.5
Domestic corporate bonds	5.7	6.2
Foreign bonds	4.7	5.1
Emerging market bonds	5.0	3.2
Domestic equities	19.2	17.6
Foreign equities	24.4	22.9
Emerging markets	9.3	7.9
Real estate	10.1	8.6
Commodities	4.0	4.7
Cash holdings	2.5	2.3
Total	100	100

14. Investments

The EPO invests its excess liquidity through the EPO Treasury Investment Fund (EPOTIF). The fund is administered by an external capital management company (Master KVG – Kapitalverwaltungsgesellschaft). The EPO participates in the fund by purchasing investment units issued by the Master KVG. The fund invests, both directly and in the form of derivative instruments, in equities, fixed-income instruments, commodities and alternative investments. Management of the resources invested in the fund by the EPO has been outsourced to asset management companies.

The value of the EPO's investment portfolio at the year-end was as follows:

	in '000 EUR	
Investments	2019	2018
EPO Treasury Investment Fund (EPOTIF)	2 954 704	2 460 194

The table below presents the EPOTIF asset allocation at the year-end.

	in %	
Percentage share in net assets value	2019	2018
Equities	13.3	10.1
Profit participation certificates (equities)	0.2	0.2
Dividend claims	0.0	0.0
Equity-index futures	0.2	-0.4
Equity funds	16.4	18.0
Bonds	37.3	46.0
Bond futures	0.0	0.0
Fixed-income funds	22.1	18.8
Commodity funds	0.7	0.6
Currency forwards	0.1	0.0
Other funds	6.8	2.7
Cash	2.9	4.0
Total	100.0	100.0

Net gains and losses on investments were as follows:

	in '000 EUR	
Net gains and losses on investments	2019	2018
Financial assets at fair value through P&L		
Valuation gains or losses	324 531	(96 848)
Financial assets at amortised cost		
Gains or losses on sale of financial assets	—	14 974
Interest income	—	8 663
Total	324 531	(73 211)

15. Home loans to staff

	in '000 EUR	
Home loans to staff	2019	2018
Non-current	89 946	88 186
Current	8 161	7 928
Total	98 107	96 114

Home loans to staff are initially recognised at fair value, which is estimated at the present value of all future cash receipts discounted using the prevailing market rate for a similar financial instrument of a similar duration. In 2019 the net loss due to revaluation of new home loans to fair value amounted to EUR 2 053k (2018: EUR 2 013k). After initial recognition, home loans are measured at amortised cost using the effective interest method. They are split into non-current and current portions based on the remaining term of the loan.

16. Other financial assets

Fixed-term deposits with an initial maturity over three months are reported as other financial assets.

	in '000 EUR	
Other financial assets	2019	2018
Non-current	—	—
Current	—	58 000
Total	—	58 000

The effective interest rate achieved in 2019 on fixed-term deposits was 0.02% (2018: 0.05%).

17. Other assets

	in '000 EUR	
Other assets	2019	2018
Assets Salary Savings Plan (SSP)	124 117	86 393
Repurchase value insurance funds ex-IIB	345	364
Total	124 462	86 757

The assets invested under the SSP are held on the EPO's behalf by an external service provider and owned by the EPO. The main characteristics of the SSP are summarised in Note 22.

18. Trade and other receivables

	in '000 EUR	
Trade receivables	2019	2018
Renewal fees	140 375	120 307
EPO products and services	6 928	7 671
Total	147 303	127 978
Other receivables		
Tax	44 186	17 829
Staff and related accounts	3 656	645
Others	(3 059)	8 468
Total	44 783	26 942
Total trade and other receivables	192 086	154 920

All trade and other receivables are expected to be recovered or settled within 12 months after the balance sheet date and are therefore classified as current assets. The analysis of trade receivables – EPO products and services that were past due but not impaired is as follows:

	in '000 EUR	
	2019	2018
Net carrying amount, trade receivables – EPO products and services	6 928	7 671
Of which not impaired on the reporting date and past due in the following periods		
Less than 120 days	307	417
More than 120 days	20	17

During 2019, the EPO wrote off uncollectible receivables amounting to EUR 7k (2018: EUR 3k) which are shown in the Statement of Comprehensive Income under other operating expenses.

“Trade receivables – renewal fees” include the renewal fees payable by the Contracting States under Article 39(1) EPC. These mainly relate to the last quarter of the reported year and are due on 31 January of the following year.

“Other receivables – tax” comprise VAT and income tax payable (“tax adjustment”) to the EPO by the Contracting States.

“Other receivables – others” mainly consist of accrued income on bonds and fixed-term deposits as well as advances to suppliers.

19. Prepaid expenses

Prepaid expenses	in '000 EUR	
	2019	2018
Employee-related expenses	12 661	12 713
Software expenses	7 586	4 516
Other expenses	—	2 105
Total	20 247	19 334

Prepaid expenses related to employees refers mainly to prepaid school fees, prepaid software expenses refer to prepaid multiyear software licences and software maintenance fees.

20. Cash and cash equivalents

The assets reported under this category have an initial maturity of three months or less and comprise the following:

Cash and cash equivalents	in '000 EUR	
	2019	2018
Short-term bank deposits	60 000	40 000
Cash at bank and in hand	1 165	14 859
Total	61 165	54 859

21. Defined benefit liability

Accounting for 2019	in '000 EUR				
	Pension obligation	Long-term care insurance	Sickness insurance	Death and invalidity	Total
Discount rate	1.13%	1.20%	1.14%	0.69%	
Future salaries increase	2.50%	2.50%		2.50%	
Future pensions increase					
Medical costs inflation			2,54%		
Present value of obligation 1 January 2019	17 957 108	874 065	1 973 655	35 947	20 840 775
Interest cost	354 787	18 209	39 416	503	412 915
Current service cost	712 768	29 961	87 516	2 521	832 766
Past service costs	32 525	—	—	—	32 525
Transfer of pension rights	7 035	—	—	—	7 035
Benefits paid	(263 561)	(5 684)	(26 779)	(2 550)	(298 574)
Remeasurements on obligation	6 275 122	313 280	1 462 821	(9 785)	8 041 438
Present value of obligation 31 December 2019	25 075 784	1 229 831	3 536 629	26 636	29 868 880
Unrecognised past service costs	—	—	—	—	—
Liability recognised in the Statement of Financial Position	25 075 784	1 229 831	3 536 629	26 636	29 868 880
Amounts recognised in the Statement of Comprehensive Income					
Interest cost	354 787	18 209	39 416	503	412 915
Current service cost	712 768	29 961	87 516	2 521	832 766
Past service costs	32 525	—	—	—	32 525
Staff contributions	(70 569)	(5 461)	—	(957)	(76 987)
Recognised in the Statement of Comprehensive Income	1 029 511	42 709	126 932	2 067	1 201 219

in '000 EUR

Accounting for 2018	Pension obligation	Long-term care insurance	Sickness insurance	Death and invalidity	Total
Discount rate	1.99%	2.09%	2.01%	1.45%	
Future salaries increase	2.50%	2.50%		2.50%	
Future pensions increase					
Medical costs inflation			2.60%		
Present value of obligation 1 January 2018	18 130 696	899 389	2 021 699	35 851	21 087 635
Interest cost	307 998	16 049	34 374	431	358 852
Current service cost	768 378	41 922	99 172	2 651	912 123
Past service costs	36 234	–	–	–	36 234
Transfer of pension rights	8 726	–	–	–	8 726
Benefits paid	(246 939)	(5 579)	(23 052)	(1 564)	(277 134)
Remeasurements on obligation	(1 047 985)	(77 716)	(158 538)	(1 422)	(1 285 661)
Present value of obligation 31 December 2018	17 957 108	874 065	1 973 655	35 947	20 840 775
Unrecognised past service costs	–	–	–	–	–
Liability recognised in the Statement of Financial Position	17 957 108	874 065	1 973 655	35 947	20 840 775
Amounts recognised in the Statement of Comprehensive Income					
Interest cost	307 998	16 049	34 374	431	358 852
Current service cost	768 378	41 922	99 172	2 651	912 123
Past service costs	36 234	–	–	–	36 234
Staff contributions	(69 036)	(5 265)	–	(580)	(74 881)
Recognised in the Statement of Comprehensive Income	1 043 574	52 706	133 546	2 502	1 232 328

in '000 EUR

Accounting for 2017	Pension obligation	Long-term care insurance	Sickness insurance	Death and invalidity	Total
Discount rate	1.71%	1.79%	1.71%	1.23%	
Future salaries increase	2.50%	2.50%		2.50%	
Future pensions increase	2.50%	2.50%			
Medical costs inflation			2.60%		
Present value of obligation 1 January 2017	17 222 264	804 889	1 652 532	36 787	19 716 472
Interest cost	318 336	16 409	30 749	481	365 975
Current service cost	762 912	36 483	89 791	2 768	891 954
Past service costs	9 127	–	–	–	9 127
Transfer of pension rights	4 957	–	–	–	4 957
Benefits paid	(225 450)	(5 332)	(15 798)	(1 255)	(247 835)
Remeasurements on obligation	38 550	46 940	264 425	(2 930)	346 985
Present value of obligation 31 December 2017	18 130 696	899 389	2 021 699	35 851	21 087 635
Unrecognised past service costs	–	–	–	–	–
Liability recognised in the Statement of Financial Position	18 130 696	899 389	2 021 699	35 851	21 087 635
Amounts recognised in the Statement of Comprehensive Income					
Interest cost	318 336	16 409	30 749	481	365 975
Current service cost	762 912	36 483	89 791	2 768	891 954
Past service costs	9 127	–	–	–	9 127
Staff contributions	(66 168)	(5 011)	–	(427)	(71 606)
Recognised in the Statement of Comprehensive Income	1 024 207	47 881	120 540	2 822	1 195 450

in '000 EUR

Accounting for 2016	Pension obligation	Long-term care insurance	Sickness insurance	Death and invalidity	Total
Discount rate	1.82%	2.00%	1.82%	1.28%	
Future salaries increase	2.50%	2.50%		2.50%	
Future pensions increase	2.50%	2.50%			
Medical costs inflation			2.64%		
Present value of obligation 1 January 2016	13 739 821	603 280	1 451 208	34 280	15 828 589
Interest cost	354 536	16 703	38 805	661	410 705
Current service cost	604 400	26 898	78 666	2 596	712 560
Past service costs	8 946	—	—	—	8 946
Transfer of pension rights	6 265	—	—	—	6 265
Benefits paid	(207 623)	(4 933)	(17 325)	(1 449)	(231 330)
Remeasurements on obligation	2 715 919	162 941	101 178	699	2 980 737
Present value of obligation 31 December 2016	17 222 264	804 889	1 652 532	36 787	19 716 472
Unrecognised past service costs	—	—	—	—	—
Liability recognised in the Statement of Financial Position	17 222 264	804 889	1 652 532	36 787	19 716 472
Amounts recognised in the Statement of Comprehensive Income					
Interest cost	354 536	16 703	38 805	661	410 705
Current service cost	604 400	26 898	78 666	2 596	712 560
Past service costs	8 946	—	—	—	8 946
Staff contributions	(64 570)	(4 850)	—	(526)	(69 946)
Recognised in the Statement of Comprehensive Income	903 312	38 751	117 471	2 731	1 062 265

in '000 EUR

Accounting for 2015	Pension obligation	Long-term care insurance	Sickness insurance	Death and invalidity	Total
Discount rate	2.60%	2.78%	2.69%	1.97%	
Future salaries increase	2.50%	2.50%		2.50%	
Future pensions increase	2.50%	2.50%			
Medical costs inflation			3.06%		
Present value of obligation 1 January 2015	16 950 750	775 620	1 870 558	144 028	19 740 956
Interest cost	271 406	13 533	29 958	1 866	316 763
Current service cost	845 437	40 014	114 022	11 801	1 011 274
Past service costs	(154 257)	—	—	(110 016)	(264 273)
Transfer of pension rights	6 812	—	—	—	6 812
Benefits paid	(186 662)	(4 662)	(19 628)	(5 277)	(216 229)
Remeasurements on obligation	(3 993 665)	(221 225)	(543 702)	(8 122)	(4 766 714)
Present value of obligation 31 December 2015	13 739 821	603 280	1 451 208	34 280	15 828 589
Unrecognised past service costs	—	—	—	—	—
Liability recognised in the Statement of Financial Position	13 739 821	603 280	1 451 208	34 280	15 828 589
Amounts recognised in the Statement of Comprehensive Income					
Interest cost	271 406	13 533	29 958	1 866	316 763
Current service cost	845 437	40 014	114 022	11 801	1 011 274
Past service costs	(154 257)	—	—	(110 016)	(264 273)
Staff contributions	(65 941)	(3 802)	—	(1 782)	(71 525)
Recognised in the Statement of Comprehensive Income	896 645	49 745	143 980	(98 131)	992 239

The contributions to the post-employment benefit plans are as follows:

	2019	2018
	in '000 EUR	
Pension benefits		
Office contributions	140 860	137 738
Staff contributions	70 430	69 036
LTC benefits		
Office contributions	10 420	9 976
Staff and pensioners' contributions	5 461	5 265
Post-employment medical care		
Office contributions for pensioners	12 112	11 138
Pensioners' contributions	6 113	5 611
Death and invalidity		
Office contributions	1 591	984
Staff contributions	957	580
Total	247 944	240 328

The Office and staff contributions for the next annual reporting period are expected to be EUR 260m.

The present value of the pension obligation is made up of the following components:

	2019	2018
	in '000 EUR	
Retirement pension/Retirement pensions for health reasons	20 195 362	14 434 061
Tax adjustment/partial compensation	4 031 511	3 020 858
Family allowances	848 911	502 189
Total	25 075 784	17 957 108

The present value of defined benefit obligations is allocated to the following populations:

	2019	2018
	in '000 EUR	
Pension obligation		
Active staff	17 390 779	12 454 893
Deferred pensioners	165 647	117 849
Pensioners	7 519 358	5 384 366
LTC insurance		
Active staff	768 291	525 508
Deferred pensioners	2 080	1 710
Pensioners	459 460	346 847
Sickness insurance		
Active staff	2 621 389	1 311 818
Deferred pensioners	—	—
Pensioners	915 240	661 837
Death insurance		
Active staff	26 636	35 947
Deferred pensioners	—	—
Pensioners	—	—
Total	29 868 880	20 840 775

21.1. Actuarial assumptions and sensitivities

The price inflation hypothesis reflects expected price inflation in the euro zone, in accordance with the European Central Bank's inflation target of 2%. The assumed future annual benefit and salary increase is 0.5% above price inflation.

The mortality table in use at the EPO is regularly adjusted for both serving staff and pensioners. For active staff, it is adjusted every two years, to take into account probable future increases in life expectancy. The mortality table applied by the Office is the International Civil Servants Life Table (ICSLT) produced by the ISRP which is a table specific to international civil servants based in Europe. The ICSLT 2013 mortality table, in use since 2014, was updated during 2018 by the ISRP and issued in February 2019 as the ICSLT 2018 mortality table. The EPO decided to maintain the ICSLT 2013 for the calculation of the 2018 year-end liabilities. During 2019, EPO's Actuarial Advisory Group (AAG) recommended the use of an EPO specific mortality table based on the ICSLT 2018 mortality table. In particular, the AAG made two changes to the 30-year longevity improvements of the standard ICSLT 2018 table. First, it recalibrated the trend to better match the EPO pensioner population. Second, in view of technical reasons and taking into account first signals of a slowdown in expected increases in life expectancy, the AAG reduced at this stage the horizon of longevity improvements from 30 years to 10 years. This assumption will be reviewed in 2021. An early adoption of the EPO specific ICSLT 2018 tables would have increased the previous year total defined benefits liabilities by 4.3%.

The medical cost inflation applied in 2019 is 2.54% (2018: 2.58%)

Experience adjustments and the effects of changes in actuarial assumptions result in actuarial gains and losses that can be categorised as follows:

	2019	2018
	in '000 EUR	
Pension obligation		
Actuarial (gain) loss from changes in financial assumptions	5 395 298	(1 047 985)
Actuarial (gain) loss from changes in demographic assumptions	879 824	—
LTC insurance		
Actuarial (gain) loss from changes in financial assumptions	298 009	(77 716)
Actuarial (gain) loss from changes in demographic assumptions	15 271	—
Sickness insurance		
Actuarial (gain) loss from changes in financial assumptions	842 707	(158 538)
Actuarial (gain) loss from changes in demographic assumptions	620 114	—
Death and invalidity		
Actuarial (gain) loss from changes in financial assumptions	2 604	(1 422)
Actuarial (gain) loss from changes in demographic assumptions	(12 389)	—
Total	8 041 438	(1 285 661)

Included within actuarial gains and losses on pension obligations is an increase in the liability of EUR 531m concerning the update in actuarial models. The increase is primarily due to the change in benefit payment frequency from annual to monthly payments as well as the use of spouse dates of birth in the calculations.

A change in the discount rates on defined benefit obligations by 0.1 percentage point would result in the following present value of each plan:

At 31 December 2019	in '000 EUR	
	0.1 percentage point increase	0.1 percentage point decrease
Present value pension obligation	24 466 421	25 705 583
Present value LTC insurance	1 191 151	1 270 051
Present value sickness insurance	3 440 391	3 647 952
Present value death and invalidity	26 405	26 873

At 31 December 2018	in '000 EUR	
	0.1 percentage point increase	0.1 percentage point decrease
Present value pension obligation	17 546 995	18 380 295
Present value LTC insurance	848 379	900 719
Present value sickness insurance	1 923 241	2 027 433
Present value death and invalidity	35 632	36 269

An increase of one year in life expectancy at the age of 63 would result in the following present value of each plan:

At 31 December 2019	in '000 EUR
	One year increase in life expectancy
Present value pension obligation	26 074 813
Present value LTC insurance	1 342 269
Present value sickness insurance	3 691 150
Present value death and invalidity	23 867

At 31 December 2018	in '000 EUR
	One year increase in life expectancy
Present value pension obligation	18 591 273
Present value LTC insurance	955 871
Present value sickness insurance	2 046 557
Present value death insurance	32 259

The above sensitivity analyses are based on one assumption changing while all others remain constant. In practice, this is unlikely to occur, and changes in some assumptions may be correlated. When calculating the sensitivity of the defined benefit obligation to significant actuarial assumptions the same method (present value of the defined benefit obligation calculated using the projected unit credit method at the end of the reporting period) has been applied as when calculating the defined benefit obligations recognised within the statement of financial position. The methods and types of assumptions used in preparing the sensitivity analysis have not changed compared to the previous accounting period.

The expected maturity analysis of undiscounted defined benefit payments is as follows:

At 31 December 2019	in '000 EUR		
	Less than 1 year	Between 1-5 years	Over 5 years
Pension obligation, net of tax adjustment	244 058	1 172 595	26 808 331
LTC insurance	6 207	30 280	1 799 974
Sickness insurance	30 485	147 377	4 906 884
Death and invalidity	1 917	7 230	19 188
Total	282 667	1 357 482	33 534 377

At 31 December 2018	in '000 EUR		
	Less than 1 year	Between 1-5 years	Over 5 years
Pension obligation, net of tax adjustment	215 974	1 001 085	23 478 108
LTC insurance	5 754	28 125	1 677 189
Sickness insurance	28 524	135 517	3 753 200
Death and invalidity	2 424	9 615	29 045
Total	252 676	1 174 342	28 937 542

The expected maturity analysis of undiscounted defined benefit payments is calculated using the salary/pension/cost increase assumptions presented in Note 21.

The undiscounted values of the pension DBO from the above table are net of tax adjustment. Including the tax adjustment would result in a total undiscounted amount of the pension DBO of EUR 33 596m (2018: EUR 29 633m).

The weighted average duration of the defined benefit obligations is as follows:

Duration	in years	
	2019	2018
Pension obligation	25	24
LTC insurance	32	31
Sickness insurance	28	25
Death and invalidity	9	9

The average duration for each defined benefit obligation is calculated using the salary/pension/cost increase assumptions presented in Note 21.

21.2. Main characteristics of the Organisation's defined benefit plans

As an intergovernmental organisation the EPO is not subject to national law and regulations. For all its defined benefit plans the EPO has developed its own regulations that have been approved by the Administrative Council.

Since 1984, the EPO has been setting aside reserves in the RFPSS so that it can fund its pension obligations. Since 2001, it has also been building up a reserve fund for LTC insurance. Since 2008, it has been doing the same for sickness insurance. A breakdown of the reserves per funded plan is disclosed in Note 13.

In 1992 the President established the AAG, consisting of three independent actuaries, to advise the Office on the conditions to be met in order to ensure the long-term equilibrium

of its pension scheme. The AAG regularly analyses the demographic and financial assumptions and recommends modifications where necessary in view of general trends and specific developments at the Office. The AAG also examines the assumptions specific to LTC and sickness insurance. Neither the scope of the examined plans nor the valuation methods used by the AAG are congruent with IFRS provisions.

Through its defined benefit plans the EPO is exposed to a number of risks, the most significant of which are as follows:

- (a) Changes in bond yields: changes in bond yields have a direct impact on the applied discount rates thus a decrease in corporate bond yields will increase plan liabilities.
- (b) Inflation risk: all plans' benefit obligations are linked to inflation, either directly (medical cost inflation) or indirectly (all plans linked to basic salaries). Higher inflation will lead to higher liabilities.
- (c) Life expectancy: three out of four plans provide benefits for the beneficiary's life time, so higher life expectancy will increase those plans' liabilities.

Although the RFPSS assets do not constitute plan assets in terms of IAS 19.8, the EPO monitors their volatility risk. The plan liabilities are calculated using a discount rate set with reference to corporate bond yields. If the RFPSS assets underperform this yield, this will increase the funding deficit. The RFPSS have significant equity holdings, which are expected to outperform corporate bonds in the long term but create volatility and risk in the short term.

21.2.1 Pension obligation

Type of benefit	Beneficiary	Calculation of the benefit
Retirement pension, old scheme	Staff member who took up duty before 1 January 2009 from age of 60 with at least 10 years (5 years for some key managers) total service; reduced pension possible from the age of 50	2% of last monthly basic salary per reckonable year of service, subject to a maximum of 70% (80% for some key managers)
Retirement pension, new scheme	Staff member who took up duty on or after 1 January 2009 from age of 60 with at least 10 years total service; reduced pension possible from the age of 50	2% of last monthly basic salary per reckonable year of service, subject to a maximum of 70% (80% for some key managers), capped at twice the salary for Grade C1, step 3
Reversion of retirement pension	Surviving spouse/husband	60% of the retirement pension
Survivor's pension	Surviving spouse/husband	60% of the retirement pension to which the staff member would have been entitled at the time of his death, without the need for a minimum of ten years of service
Orphan's pension	Dependent child, subject to age and education status	40% of the survivor's /reversionary pension (80% if there is no survivor's/reversionary beneficiary)
Retirement for health reasons	Staff members aged between 55 and 65 that have been totally discharged of duties for reasons of incapacity during 10 years and beneficiaries of the former invalidity allowance	Same as for Retirement pension. For employees who have not reached the age of 60, the number of reckonable years is determined as if the employee had remained in service until the age of 60, and the reference salary is 70% of the employee's last salary as defined under the Pension Scheme Regulations.
Family allowances	Beneficiary of the pension plan (Note 2.15.2)	Same as for active staff
Tax compensation, old scheme	Beneficiary of the pension plan (Note 2.15.2)	50% of income taxes on retirement pensions and allowances calculated by use of standardised tables of equivalence specifying the amount of the adjustment to be added to the pension

The Reserve Fund for Pensions is allocated payments equivalent to the Office's and the staff's pension contributions – 19.6% and 9.8% respectively of basic salaries paid – after deduction of pensions actually paid. For 2019, the total pension contribution rate recommended by the AAG was 29.4% (2018: 29.4%).

The EPO Member States jointly guarantee the payment of these benefits. In the event of a merger, reconstitution or other transformation or in the event of dissolution of the Organisation, the Administrative Council or any ad hoc body set up in one of the afore-mentioned cases takes the necessary measures to ensure uninterrupted payment of pension scheme benefits until the cessation of entitlement of the last beneficiary. Should an EPO Member or ex-Member State fail to comply with its obligations, the other States meet the cost thereof in proportion to their contribution to the budget of the Organisation as fixed annually from and after the said state's default.

21.2.2 Sickness insurance

An employee who has remained in EPO service until retirement or retirement for health reasons, his spouse, his children and other dependants are insured against expenditure incurred in case of sickness, accident, pregnancy and confinement. One third of the contribution involved, calculated as a percentage of the pension (2019: 2.95% and 2018: 2.95%) is charged to the employee. A spouse in employment outside the EPO and whose salary exceeds a certain level has to pay an additional contribution.

Benefits also apply to a person entitled to a survivor's pension following the death of an employee who was in active employment or who remained in EPO service until retirement, or following the death of a person entitled to an invalidity pension. The contribution is calculated as a percentage of the survivor's pension. A person entitled to an orphan's or dependant's pension may also be covered, but only on request. The contribution is calculated as a percentage of the orphan's or dependant's pension.

Where the total medical expenditure not reimbursed for any period of twelve months exceeds half the pension paid, special reimbursement is allowed by the President. In addition, in the case of medical expenditure which exceeds one fifth but is less than one half of the pension, an additional reimbursement is allowed.

21.2.3 Long-term insurance

A permanent employee, a former employee in receipt of a retirement pension or a retirement pension for health reasons, his spouse, his former spouse, his dependent children and other dependants are insured on either a compulsory or a voluntary basis against expenditure arising from reliance on long-term care. This insurance is intended to provide a fixed amount of financial support to defray some of the expenses incurred if an insured person's autonomy becomes seriously impaired on a long-term basis and he therefore requires help to carry out everyday activities; it does not include any expenditure on medical fees associated with the treatment of an illness or resulting from pregnancy or an accident.

The following contributions are paid:

- (a) a contribution by the Office proportional to the basis formed by the sum of the basic salaries and basic pensions paid to the insured persons plus 6% for those insured persons who have opted for voluntary insurance of their spouse, and the sum of the survivor's pensions. The rate of this contribution is equal to two thirds of a reference rate

determined on the basis of an actuarial study carried out by independent experts and fixed at 1.5% since 2016.

- (b) a contribution by the insured persons. The rate of this contribution is equal to one third of the reference rate. However, during periods in which a person insured is not in active employment, it is equal to the reference rate.

For employees joining the EPO after the age of 55, the Office and staff contributions are reduced to one third of those defined above.

21.2.4 Death insurance

The benefits payable is a fixed amount for funeral expenses incurred for the permanent employee himself, his spouse and, where appropriate, his dependants. In the event of death of the permanent employee, the benefits payable are a lump sum equal to 2.75 times his annual basic salary.

The contribution for the insurance for funeral expenses is included in the contribution for sickness insurance. One third of the contribution, calculated by reference to the basic salary of the permanent employee, which is required to insure him against the risk of death, is charged to the employee.

A permanent employee who has been in the service of the Office for at least two years may on request continue to be insured, after termination of service, against the risk of death. However, he must then bear the total contribution, and the benefits payable are calculated on the basic salary received at the moment of termination of service. The insurance ends at the end of the month during which he reaches the age of 65 years.

22. Salary savings plan obligation

Since 1 January 2009, the EPO has been operating an SSP which is compulsory for employees who took up duty on or after that date (participants).

The rate for compulsory contributions is equal to the difference between the contribution to the pension scheme for staff in post on 31 December 2008 and that payable under the new rules, i.e. applying the cap described in Note 21.2.1. One third of the compulsory contribution is charged to the employee, two thirds to the Office.

An individual salary savings account (individual account) is opened for each participant. The sums credited to the individual account are invested by the Office, in accordance with a pre-defined strategy. The Office offers participants a maximum of three investment strategies. A default investment strategy applies during the first six months of participation; thereafter, each participant may choose a different investment strategy from among those offered by the Office, and may change it once per calendar year. The Office bears no responsibility for the outcome of application of the default strategy or the strategies chosen by participants.

On termination of service, participants are entitled to payment of the balance of their individual account as a lump sum corresponding to the contributions paid into the account, plus or minus investment returns. In the event of the participant's death, his entitlement passes to his estate. The lump sum is paid out as final salary. Concerning the assets invested under the SSP, see Note 17.

23. Other employee-related liabilities

Other employee related liabilities	in '000 EUR	
	2019	2018
Regular vacation	66 879	71 552
Home leave	41 867	44 179
Other compensated absences	29 477	30 763
Outstanding healthcare claims from staff	11 040	10 188
Bonus payments	9 800	—
Other	10 727	8 306
Total	169 790	164 988

An amount of EUR 24 455k (2018: EUR 23 581k) is presented as non-current liabilities and includes mainly obligations for long-term employee benefits as a result of long-service leave, gratuities, severance grants, obligations due to former non-active staff and similar long-term obligations.

24. Trade and other payables

Trade and other payables	in '000 EUR	
	2019	2018
Current deposit accounts by patent applicants	124 268	123 367
Payables to suppliers and trade creditors	61 881	77 070
Other	19 536	1 644
Total	205 685	202 081

Applicants can debit their deposit accounts kept by the Organisation for fee payments relating to their applications. A liability is recognised for payments received from applicants to replenish these accounts.

Other payables include a short term money market borrowing amounting to EUR 15m and an operational overdraft amounting to EUR 2.6m.

25. Provisions

	in '000 EUR			
	Litigation risks	Dismantling obligation	Other	Total
1 January 2019	7 130	5 251	395	12 776
Use	7 130	4 901	395	12 426
Reversal	—	—	—	—
Addition	8 796	—	395	9 191
Interest effect	—	—	—	—
Other	—	—	—	—
31 December 2019	8 796	350	395	9 541
Current	8 796	350	395	9 541
Non-current	—	—	—	—
Total	8 796	350	395	9 541

The provisions for litigation risks mainly include provisions for staff appeals pending at the Administrative Tribunal of the International Labour Organization. The EPO expects a settlement within twelve months after the balance sheet date.

A provision for a dismantling obligation amounting to EUR 5 251k has been initially recognised in the 2018 accounts. It relates to the cost of removing asbestos in the Main building (The Hague), which is expected to be demolished in the course of 2020. Reference is made to Note 27 Contingencies and risks.

Other provisions mainly include obligations for legal support in administrative and judicial procedures as well as obligations to fulfil requirements of the EPC – mainly due to external audit of financial statements, adherence to budgetary regulations and internal controls. It is expected that these obligations will be settled during 2020.

26. Commitments

	in '000 EUR	
Purchase commitments	2019	2018
Fixed assets	7 138	14 228
Intangible assets	1 360	9 822

The commitments for purchases of fixed assets are mainly for completions works in the area of the New Main building in The Hague.

27. Contingencies and risks

Contingencies and risks are disclosed as of the balance sheet date. Any material changes after the balance sheet date are disclosed in Note 31.

Introduction of a Salary Savings Plan

An SSP has been set up; participation is compulsory for all staff joining the Office on or after 1 January 2009. It allows them to build up individual savings accounts through monthly contributions deducted from salary (see Note 2.15.5.1). Throughout their EPO employment, the money thus invested remains the property of the Organisation. Consequently, the resulting income is regarded as exempt from direct taxes, under Article 4 EPO-PPI. On termination of service, the employee is entitled to payment of the capital built up under the SSP. As deferred salary, this is subject to internal tax under Article 16(1) EPO-PPI and therefore, in the Office's view, exempt from national tax.

This view might not be shared by all national tax authorities. It is not clear whether a negative outcome of possible court decisions would result in an EPO obligation to compensate staff who relied on tax exemption. For the reporting period, the EPO does not regard the tax risk as material, due to the relatively small amount of SSP contributions so far collected (see Note 17). The Office will decide on further action, which might involve recognising further liabilities.

Introduction of “partial compensation”, replacing the former tax adjustment

Since 1 January 2009, the national tax adjustment borne by each Contracting State had been replaced by a compensatory amount (“partial compensation”) borne by the Organisation and intended to mitigate the additional national tax burden to which beneficiaries are subject in some Contracting States. The Office considered this partial compensation to be not a pension or annuity within the meaning of Article 16(2) EPO-PPI but an emolument within the meaning of Article 16(1) EPO-PPI, which therefore should not be subject to national tax. After more than five years, this system has however proven to entail significant administrative, legal and financial uncertainties and risks for the Office. It has therefore been decided to revert to the former tax adjustment system as of 1 January 2015 for pensioners who began active service before 1 January 2009.

No account is taken of risks that might arise from claims for compensation from third parties relying on tax treatment under Article 16(1) EPO-PPI for the period 2009-2015.

Removal of asbestos in the Main building

The structure of the old Main building contains asbestos that needs to be disposed of before the building can be demolished. A provision has been recognised for the part of the disposal cost that can be already reliably assessed (see Note 25). The remaining cost of asbestos removal for the Main building cannot yet be reliably quantified.

Other contingencies and risks

In addition, the Organisation has contingencies arising in the ordinary course of business, mainly due to disputed invoices, pending legal disputes and arbitration procedures or appeals by staff members. It is not anticipated that these will give rise to any material liabilities other than those for which provision has been made (Note 25).

28. Related party disclosures

The Organisation has entered into transactions with members of the EPO’s key management personnel, their close family members and the Contracting States. The EPO has not applied partial exemptions, if any, for government-related entities provided by **IAS 24 – Related Party Disclosures**.

28.1 Related parties to the Organisation

28.1.1 Members of key management

Key management personnel are those persons having authority and responsibility for planning, directing and controlling the activities of an entity, directly or indirectly. This applies to the executive body of the Office and the Fund Administrator of the RFPSS:

At the balance sheet date, the EPO had three directorates-general, each headed by a Vice-President. The Directorate-General 1 in charge of the patent granting process is divided into three sectors, each headed by a Chief Operating Officer.

The President of the Office, along with the three Vice-Presidents and 14 Principal Directors, constitute the Management Committee (MAC). For the purpose of this note to the financial statements, the MAC members are considered to be related parties.

Besides the MAC members, the RFPSS Fund Administrator is also considered to be a related party. The importance and the size of the funds, combined with his functions, put him on a par with the members of the MAC.

28.1.2 Close family members of key managers

Close family members of a key manager are those family members who may be expected to influence, or be influenced by, that individual in their dealings with an entity. For the purpose of this note to the financial statements, the partner, children and dependants of the MAC members and the Fund Administrator are considered to be related parties.

28.1.3 Contracting States

The Administrative Council of the Organisation is made up of representatives of the Contracting States to the EPC. As the EPO's supervisory body, it exercises legislative powers, decides policy issues and oversees the Office's activities. Furthermore, Article 37(c) EPC provides that the budget of the Organisation is financed, where necessary, by financial contributions from the Contracting States. If the Organisation is unable to balance its budget in accordance with Article 40(1) EPC, then under Article 40(2) to (7) EPC the Contracting States must remit special financial contributions to the Organisation, the amount of which is determined by the Administrative Council for the accounting period concerned. In Article 40(2) to (4) Pension Scheme Regulations, the Contracting States jointly guarantee payment of the benefits to be paid under the pension scheme. As they appoint their representatives on the Administrative Council and can determine how they vote, the Contracting States themselves are also considered to be related parties to the EPO.

28.2 Transactions and outstanding balances with related parties

Compensation of key managers (MAC members and Fund Administrator) and close family members of key managers

	in '000 EUR	
	2019	2018
Short-term employee benefits*	6 406	4 928
Post-employment benefits, service costs	3 543	1 406
Total	9 949	6 334

* The salaries included in the short-term employee benefits are reported after deduction of internal tax.

The Organisation recognised a defined benefit obligation for post-employment benefits amounting to EUR 51 159k (2018: EUR 24 292k) for 19 (2018: 14) key managers.

Expenses with related parties other than compensation of key managers and their close family members

	2019	in '000 EUR 2018
MAC members and Fund Administrator	—	—
Close family members of key managers	—	—
Contracting States		
Co-operation with national offices	5 470	4 728
Rent office building Berlin	2 575	2 575
Total	8 045	7 303

Revenues from patent and procedural fees and other revenues from related parties

	2019	in '000 EUR 2018
MAC members and Fund Administrator	1	1
Close family members of key managers	—	—
Contracting States		
Renewal fees for granted patents (incl. interest)	581 679	543 322
Searches on behalf of ex-IIB member states	33 201	34 599
Searches on behalf of other Contracting States	21 319	22 688
Reimbursement rent office building Berlin	787	817
Rental income Netherlands patent office	—	—
Other revenue	8 719	8 534
Total	645 706	609 961

Loans, receivables and other assets due from related parties

	2019	in '000 EUR 2018
MAC members and Fund Administrator	82	93
Close family members of key managers	—	—
Contracting States		
Renewal fees	140 375	120 307
VAT and other taxes	44 139	17 785
Contracting States using EPO services and products	6 460	6 826
Tax adjustments	—	44
Total	191 056	145 055

The amounts due from key management personnel and their close family members result from home loans granted by the Organisation. The terms for granting home loans are the same as for other EPO employees.

Payables and other liabilities

	2019	in '000 EUR 2018
MAC members and Fund Administrator	—	—
Close family members of key managers	—	—
Contracting States	149	387
Total	149	387

29. Additional disclosures on financial instruments

29.1 Financial instruments by category

Set out below is a comparison by category of the carrying amounts and fair values of all of the EPO's financial instruments carried in the financial statements:

	Carrying value		Fair value	
	2019	2018	2019	2018
in '000 EUR				
RFPSS Financial instruments				
Financial assets at fair value through profit and loss				
Standard bonds	1 508 010	1 852 819	1 508 010	1 852 819
Other bonds	767 502	728 165	767 502	728 165
Shares	3 022 199	2 233 869	3 022 199	2 233 869
Funds	3 970 520	2 849 587	3 970 520	2 849 587
Derivatives used for trading	21 988	12 153	21 988	12 153
Other instruments	38 788	30 281	38 788	30 281
Total	9 329 007	7 706 874	9 329 007	7 706 874
Financial assets at amortised cost				
RFPSS other assets	640	613	640*	613*
RFPSS restricted cash	264 845	200 583	264 845	200 583
Financial liabilities at fair value through profit and loss				
Derivatives used for trading	(694)	(5 874)	(694)	(5 874)
Financial liabilities at amortised cost				
RFPSS other liabilities	(97)	(426)	(97)*	(426)*
Total net RFPSS financial instruments	9 593 701	7 901 770	9 593 701	7 901 770
Office financial instruments				
Financial assets at fair value through profit and loss				
EPO Treasury Investment Fund	2 954 704	2 460 194	2 954 704	2 460 194
Financial assets measured at amortised cost				
Bonds	–	–	–	–
Home loans	98 107	96 114	110 322	107 164
Trade and other receivables	192 086	154 920	192 086*	154 920*
Other financial assets	–	58 000	–	58 000*
Cash and cash equivalents	61 165	54 859	61 165*	54 859*
Total Office financial assets	3 306 062	2 824 087	3 318 277	2 835 137
Financial liabilities measured at amortised cost				
Trade and other payables	(205 685)	(202 081)	(205 685)*	(202 081)*
Finance lease liabilities	(81 269)	(2 939)	(81 269)*	(2 939)*
Total Office financial liabilities	(286 954)	(205 020)	(286 954)	(205 020)

* Approximation of fair value

Cash, cash equivalents, trade and other receivables, trade and other payables and other financial assets have mainly short terms to maturity. Their carrying amounts at the reporting date represent a reasonable approximation of their fair values.

The fair value of bonds held by the Office is determined on the basis of quoted market prices. The price used for valuation is the closing price on the last trading day of the financial year.

Home loans are not traded in an active market. Their fair value at the balance sheet date is calculated as the present value of the future cash flows discounted using the prevailing market interest rates and applying the Moosmüller method.

The changes in liabilities arising from financing activities are classified as follows:

	Lease liabilities	in '000 EUR Total
1 January 2019	2 939	2 939
Cash flows:		
Repayment	(10 415)	(10 415)
Non-cash:		
Transition IFRS 16	34 920	34 920
Acquisition	53 825	53 825
31 December 2019	81 269	81 269

	Lease liabilities	Total
1 January 2018	5 754	5 754
Cash flows:		
Repayment	(3 415)	(3 415)
Non-cash:		
Acquisition	600	600
31 December 2018	2 939	2 939

29.2 Fair value hierarchy

Depending on the techniques and inputs used to measure fair value, financial instruments are categorised in three levels:

- Level 1 – measurement based on quoted prices in active markets for identical assets or liabilities;
- Level 2 – measurement based on inputs other than quoted prices included within level 1 that are observable for the asset or liability, either directly or indirectly;
- Level 3 – measurement based on unobservable inputs for the asset or liability.

Financial instruments measured at fair value and those for which the fair value is disclosed in the notes to the Financial Statements are presented in the table below:

	in '000 EUR			
31 December 2019	Level 1	Level 2	Level 3	Total
RFPSS financial assets				
Standard bonds	1 485 098	22 912	–	1 508 010
Other bonds	750 081	17 421	–	767 502
Shares	3 022 199	–	–	3 022 199
Funds	–	3 970 520	–	3 970 520
Derivatives used for trading	–	21 988	–	21 988
Other instruments	–	38 788	–	38 788
Office financial assets				
EPO Treasury Investment Fund	–	2 954 704	–	2 954 704
Home Loans	–	110 322	–	110 322
Total financial assets	5 257 378	7 136 655	–	12 394 033
RFPSS financial liabilities				
Derivatives used for trading	–	694	–	694
Total financial liabilities	–	694	–	694
	in '000 EUR			
31 December 2018	Level 1	Level 2	Level 3	Total
RFPSS financial assets				
Standard bonds	1 841 693	11 126	–	1 852 819
Other bonds	632 702	95 463	–	728 165
Shares	2 233 869	–	–	2 233 869
Funds	–	2 849 587	–	2 849 587
Derivatives used for trading	–	12 153	–	12 153
Other instruments	–	30 281	–	30 281
Office financial assets				
Bonds	–	2 460 194	–	2 460 194
Home Loans	–	107 164	–	107 164
Total financial assets	4 708 264	5 565 968	–	10 274 232
RFPSS financial liabilities				
Derivatives used for trading	–	5 874	–	5 874
Total financial liabilities	–	5 874	–	5 874

Level 1 includes exchange-traded instruments for which quoted prices are readily available and highly liquid instruments with quoted prices in active markets.

Level 2 measurements were determined using the following techniques:

- The fair value of RFPSS financial instruments was determined based on the published net asset values of investment fund companies and quoted prices for identical assets in markets that are not active.
- The fair value of EPOTIF investment units was derived from the Net Assets Value as published by the capital management company in charge of the fund administration (Master KVG).
- The fair value of home loans was calculated as the present value of the future cash flows discounted using the prevailing market interest rates and applying the Moosmüller method. Interest rates used as input for the model were Euribor rates and the rates of AAA-rated Euro-area central-government bonds.

29.3 Gains and losses on financial instruments

These are summarised in the table below:

Financial instruments at fair value	in '000 EUR	
	2019	2018
Valuation gains (losses) on assets	1 608 973	(752 009)
Income from coupons, dividends and interest	152 916	138 465
Custodian fees and other costs	(913)	(889)
Sundry	(836)	(652)
Valuation gains (losses) on liabilities	(562)	(5 060)
Total	1 759 578	(620 145)

Financial assets at amortised cost	in '000 EUR	
	2019	2018
Interest income from home loans	2 807	3 039
Interest income on bonds	—	8 663
Interest income from bank accounts and deposits	12	74
Gains from sale of bonds	—	14 974
Other	—	11
Total	2 819	26 761

Financial liabilities at amortised cost	2019	2018
Interest costs lease	(949)	(93)
Total	(949)	(93)

Gains from sale of bonds result from the disposal of bonds in the process of transition to the EPOTIF portfolio in 2018.

30. Financial risk management

Risk management policies at the EPO depend on the type of assets concerned. RFPSS portfolio risk management is distinct from that for Office-held financial instruments and for EPOTIF. The following discussion of the policies and processes for managing and measuring the risk reflects the split of management responsibility for these three portfolios.

The main risks arising from the financial instruments are market risk, liquidity risk and credit risk. The Budget and Finance Committee and the Administrative Council approve the investment policies and strategy for managing the risks summarised in Notes 30.1 to 30.3.

(a) Financial instruments held by the Office

Financial instruments held by the Office comprise trade receivables and payables, fixed-term deposits and cash which arise directly from the EPO's operational activities as well as lease obligations that are used to finance the EPO's operations.

Additionally, home loans are granted to staff at an interest rate below the prevailing market rate.

(b) EPO Treasury Investment Fund

EPOTIF invests in the following asset classes:

Equities	– up to 40% of the total portfolio
Fixed income	– up to 60% of the total portfolio
Cash	– up to 10% of the total portfolio
Commodities	– up to 5% of the total portfolio
Real estate	– up to 15% of the total portfolio
Alternatives / multi-asset investments	– up to 15% of the total portfolio

To execute the investments in the above asset classes the EPOTIF may use all available financial instruments, including physical, derivative and structured financial products. The instruments held by the EPOTIF are subject mainly to market risk. The risk profile of the portfolio is derived from the EPO's strategic asset allocation, as proposed by the President and approved by the Budget and Finance Committee. For tactical reasons, asset managers may depart from this strategic asset allocation, as long as they observe the asset class limits set out above.

Asset managers are bound by a maximum net portfolio exposure of 100%.

EPOTIF cash may be held only with the depository or other credit institution with a seat or branch registered in Germany and only up to the protection ceiling provided by the German Deposit Protection Fund (Einlagensicherungsfond).

Securities lending of EPOTIF assets is entirely prohibited. Repurchase agreements are not permitted. Derivative short positions may be held only for hedging purposes. Over-the-counter (OTC) derivative contracts for hedging purpose or to gain exposure can only be entered with six selected counterparties approved jointly by the EPO and Master KVG.

(c) Financial instruments held by the RFPSS

The RFPSS allocates assets in accordance with the investment strategy and tactical ranges defined by its Supervisory Board. The lower and the upper bandwidths set the maximum admissible deviations from the strategic asset allocation. As a general rule, if a bandwidth is breached, a rebalancing to the strategic weights is triggered. The following asset classes are defined: domestic equities, foreign equities, domestic government bonds incl. Danish mortgage bonds, foreign bonds, domestic corporate bonds, emerging market bonds, emerging market equities, real estate, commodities and cash. The assets are managed actively and/or passively.

The risk characteristics of the financial instruments managed by the RFPSS are essentially derived from the risk profile of the strategic asset allocation as defined by the Supervisory Board of the RFPSS. For details about policies and risk measures applied, see Notes 30.1 to 30.3.

30.1 Market risk

(a) Financial instruments held by the Office

Financial instruments held by the Office do not have exposure to changes in market value. As these instruments are not market listed and the fair value changes would have no impact on the EPO's profit or loss and equity, a sensitivity analysis has not been performed.

At the reporting date, the Office had no material exposure to foreign-exchange risks.

(b) EPO Treasury Investment Fund

Market risks are managed by portfolio diversification, the asset class restrictions imposed by the EPO investment guidelines and absolute limits on the total risk exposure of the portfolio measured with VaR (Value at Risk), a statistically based estimate of the potential loss on the portfolio resulting from adverse market movements. The EPO investment guidelines stipulate that the VaR of the investment portfolio (one-year holding period, 95% level of confidence) must not exceed 20% of the EPOTIF Net Asset Value at any time.

The VaR figures are based on the historical simulation method performed by RiskMetrics® RiskManager (MSCI Inc.). The premise behind historical simulation is that potential changes in the underlying risk factors are identical to those observed over a defined historical period of six years. The empirical distributions of returns for all relevant risk factors (exchange rates, interest rates, equity prices, credit spreads, commodity prices, inflation rates, volatilities) are applied to obtain risk statistics on the basis of mark-to-model valuation. The risk factor price scenarios are calculated at a given holding period of 250 business days, on the assumption that the current fund portfolios are to be held over this same horizon. Lastly, the risk factors' P&Ls are finally used to obtain P&L scenarios for both the fund assets and higher aggregation levels (asset classes, fund portfolios, total fund level). The confidence level (expected probability of loss) of 0.95 is obtained as an interpolated order statistic from the simulated P&L distributions.

VaR figures are monitored by fund and by each fund segment against an absolute VaR guideline.

As at 31 December 2019 the EPOTIF portfolio's VaR was EUR 184m (2018: EUR 144m), which was 6.2% (2018: 5.9%) of the Net Assets Value.

(c) Financial instruments held by the RFPSS

Market risks are mitigated by diversification and limiting provisions laid down in the investment guidelines and code of procedure set up by the Fund Administrator by use of risk policies. Market risks are quantified using Value at Risk (VaR), a statistically based estimate of the potential loss on the portfolio resulting from adverse market movements. This metric makes it possible to estimate the maximum expected loss with a degree of confidence, chosen to be 95%, over a one-month horizon.

As at the end of 2019 the VaR was estimated at EUR 324m (2018: EUR 246m). The increase of VaR (+78 million compared to end 2018) stems from the increase in assets under management from EUR 7.9 bn at the end of 2018 to almost EUR 9.6bn at the end of 2019 as well as

from higher market risk (total risk increase from 6.55% to 7.12%). The latter being mainly due to the change in strategic asset allocation decided by RFPSS Supervisory Board that increased the equity quota (including real estate) from 59% to 62% starting from 1 July 2019.

The VaR figures are based on the assumptions of normal portfolio return distributions and persistence of the statistical characteristics of the distributions of returns in the horizon period. VaR figures are monitored by asset class and relative VaR guidelines are used to monitor aspects of deviations from the benchmarks, which are based on MSCI/FTSE for equity/real estate, S&P/Bloomberg for commodities and Bloomberg/Barclays/JP Morgan/Nykredit for fixed income. A risk-factor-based model, MSCI Barra's BarraOne, is used to break risk down and enable management to analyse aggregations and contributions.

Foreign exchange risks are mitigated by maintaining a minimum of 60% of assets in core currencies and maintaining a currency overlay programme at a strategic 50% hedge ratio on US dollar, pound sterling and Japanese yen exposures.

30.2 Liquidity risk

(a) Financial instruments held by the Office

Liquidity risk management implies maintaining sufficient cash position and cash flows to be able to face the entity's short- and long-term liabilities.

The EPO's treasury department monitors the risk of a shortage of funds using a daily cash management tool. This tool considers the maturity of financial assets and takes into consideration the expected cash in- and outflows from daily operations.

The EPO has no significant liquidity risk. The cash generated by its operations more than covers its liquidity needs for both operational and capital expenditure.

Surplus liquidity not needed in the short term is invested in EPOTIF units in line with estimated cash outflows according to the 5 year budget plan and the 6 month cash flow plan, which is subject to the President's approval.

The expected cash outflows resulting from financial instruments of the Office include payments of liabilities to trade creditors and lease liabilities. As at the balance sheet date, the maturity structure of future payments resulting from financial liabilities was as follows:

	in '000 EUR	
	2019	2018
Within 1 year	96 931	78 155
More than 1 year	68 450	1 882
Total	165 381	80 037

(b) EPO Treasury Investment Fund

The Office transfers the cash surplus generated from operational activities to the EPOTIF. A financial study performed by the EPO in 2019 forecasted that it will continue to generate an operational cash surplus until at least 2038. It is therefore not expected to redeem any EPOTIF units in the coming years. Nevertheless, the EPO is legally entitled to liquidate a part or the whole of the EPOTIF fund at any time. In such a case, proceeds from liquidation of fund units would be available at short notice.

As at the year-end, the margin account relating to future positions held as collateral for derivative transactions of EPOTIF amounted to EUR 11m (2018: EUR 13m).

(c) Financial instruments held by the RFPSS

The Office transfers to the RFPSS the surplus of pension contributions over pension payments. The reserves managed by the RFPSS are created to assist the Office in covering its social security schemes under its budget. Estimates based on the actuarial studies have shown that net payments to pensioners should not be necessary in the short term. Owing to the reserve nature of the funds, liquidity risk – defined as the risk of not being able to cover short- or long-term liabilities – is insignificant.

In relation to investment management activities, daily operational cash requirements are covered by cash management tools that forecast and allow matching of cash flows generated by investment operations. The margin account relating to bund future positions as collateral for derivative transactions amounted to EUR 1.9m (2018: EUR 1.9m).

The maturity analysis of the RFPSS financial liabilities as at 31 December is as follows:

	in '000 EUR	
Financial liabilities	2019	2018
Less than 3 months	694	5 874
Between 3 months and 1 year	–	–
More than 1 year	–	–
Total	694	5 874

30.3 Credit risk

(a) Financial instruments held by the Office

Financial instruments used in the EPO's operational activities are subject to limited credit risk. The EPO has policies in place to ensure that sales of patent information services and products are made to customers with an appropriate credit history. Outstanding trade receivables are monitored continually.

Financial assets are considered to have a low credit risk if they have received the investment grade issuer rating BBB-/Baa3 from either S&P or Moody's rating agency or have comparable credit risk characteristics. This applies in particular to home loans and bank deposits reported under other financial instruments.

As at the reporting date the gross carrying amount of financial assets subject to credit risk exposure was as follows:

	in '000 EUR			
	Low credit risk		High credit risk	
	2019	2018	2019	2018
Home loans	98 107	96 114	–	–
Trade and other receivables	192 086	154 920	–	–
Other financial assets	–	58 000	–	–
Cash and cash equivalents	61 165	54 859	–	–
RFPSS restricted cash	264 845	200 583	–	–
RFPSS other assets	640	613	–	–
Total	616 843	565 089	–	–

A financial asset is considered to be credit-impaired once one or more events having a detrimental impact on the estimated future cash flows have occurred. Examples of such events are information that the borrower is in serious financial or there is a high probability it will enter bankruptcy proceeding. The expected credit losses for credit-impaired assets are measured as the difference between the gross carrying amount and the present value of estimated future cash flows.

A default is considered to have occurred if the delay in payment of interest or principal by the borrower exceeds 30 days, which is the best industry practice used by major rating agencies. In this case, the borrower's debt is written off in full unless any external information is available that allows for a reliable estimate of the recoverable amount, in which case only the amount that cannot be recovered is written off.

Home loans

Home loans granted to the staff are similarly not subject to any significant credit risk. They are granted only to permanent staff, and repayment is guaranteed by the mortgage or other land charge entered in the land register or other appropriate public record. Interest and capital repayments are withheld from salary or pension. No home-loan borrower has ever defaulted. As this is equivalent to the quality of an AAA instrument, the home loans portfolio is considered to have low credit risk. For these instruments, the EPO calculates a loss allowance amounting to 12-month expected credit losses.

The EPO incorporates the forward-looking information in three economic scenarios: one assuming the current economic conditions will remain unchanged, one assuming deterioration and one assuming improvement of the economic conditions. The probability that the current conditions will remain unchanged has been estimated at 68%, which represents a 1-standard deviation in the normal distribution. The remaining 32% has been equally split between the two other scenarios. The expected credit losses are calculated using S&P Mortgage Default Index. The lifetime default probability represented by the index is adjusted to a 12-month probability by reference to the German Sovereign Credit Default Swap curve. For current conditions, the default probability as at the reporting date is used. For the scenarios with improved/deteriorated economic conditions, the lowest/highest default probability within the last three years is used. The expected loss has been calculated under assumption of a 58% recovery rate, this being the statistic for the German mortgage market. The default probability is adjusted to the 12 month rate. For home loans with a remaining duration of

less than one year, the expected loss has been calculated on the basis of a one-year duration, as the effect is immaterial.

As at the reporting date there were no material expected credit losses from the portfolio of home loans.

Trade and other receivables

Trade receivables - renewal fees: these include the renewal fees payable by the contracting states under Article 39(1) EPC. These mainly relate to the last quarter of the reported year and are due on 31 January of the following year.

Other receivables – tax: these include VAT and income tax payable (“tax adjustment”) to the EPO by the contracting states.

Other receivables – others: these consist mainly of accrued income on bonds and fixed-term deposits as well as advances to suppliers

All trade and other receivables are expected to be recovered or settled within 12 months of the balance sheet date and are therefore classified as current assets.

Outstanding balances are constantly monitored and assessed for recoverability. Both internal collection procedures and procedures using an external debt collection agency have been set up, and a list of blacklisted customers is kept.

Bad debts are written off when:

- they become uncollectible due to insolvency of the customer, or
- all internal collection and external debt-collector measures to collect the outstanding amounts have failed, or
- all internal collection measures have failed and, due to the small amount of the outstanding receivable, it is not considered cost-effective to pursue further collection measures.

In the case of a write-off, the carrying amount of trade receivables is reduced directly, rather than recognising the impairment on a separate account.

The EPO estimates the expected credit losses from trade receivables on the basis of the default probability of the member states, as quoted by Bloomberg. The customers are grouped into low risk (below 1% default probability) and high risk (above 1% default probability) portfolios. For both groups the expected credit losses are calculated using a provision matrix. As at the balance sheet date, the expected credit losses on trade receivables were immaterial.

To calculate the expected credit losses for the portfolio, the EPO uses a provision matrix. The provision matrix is based on its historically observed default rates over the expected lifetime of the trade receivables and is adjusted for forward-looking estimates. At every reporting date the historically observed default rates are updated and changes in the forward-looking estimates are analysed.

As at the reporting date, no material credit losses were expected from trade and other receivables.

Other financial assets

Other financial assets comprise short-term bank deposits. Since July 2018 bank deposits have only been used in the short-term management of the EPO's daily operational cash flows. No long-term investments have been made or are expected to be made in this asset category.

All deposits with banks which have received the investment grade issuer rating BBB-/Baa3 from either S&P or Moody's rating agency are considered to have a low credit risk. For these instruments, the EPO recognises a loss allowance amounting to 12 months' expected credit losses. The EPO incorporates the forward-looking information in three economic scenarios: one assuming the current economic conditions will remain unchanged, one assuming a deterioration and one assuming an improvement of the economic conditions. The probability that the current conditions remain unchanged has been estimated at 68%, which represents a 1-standard deviation in the normal distribution. The remaining 32% has been equally split between the two other scenarios. The expected credit losses are calculated using Bloomberg's 1-year default probability. For current conditions, the default probability as at the reporting date is used. For the scenarios with improved/deteriorated economic conditions, the lowest/highest default probability within the last three years is used. The expected loss has been calculated under assumption of a 40% recovery rate, which is the industry standard for valuation of Credit Default Swaps. For deposits with a remaining duration of less than one year, an adjustment for the actual duration of the deposit was made.

The EPO constantly monitors the macroeconomic environment in which the banks operate and, if adverse changes to this environment can reliably be expected, it may adapt the expected default rates using forward-looking information available from Bloomberg.

Should the rating of an instrument fall below the investment grade, the EPO reassesses whether the credit risk of the asset has increased significantly since initial recognition. The major criteria for the reassessment are: significant negative changes in credit rating or external market indicators of credit risk, unfavourable price changes of the bank's equity, significant adverse changes in the bank's financial situation or its regulatory, economic or technological environment. Where there has been a significant increase in the asset's credit risk, the EPO recognises a loss allowance amounting to the lifetime expected credit losses. The amount of losses is calculated on the basis of available external information such as credit default swap prices or Bloomberg's Credit Risk model.

As at the reporting date there were no material expected credit losses from other financial assets.

(b) EPO Treasury Investment Fund

The EPO investment guidelines impose a limit on the fund's exposure to credit-risk-bearing instruments of 60% of the total portfolio value. The risk of the credit instruments is managed by a limit on the total risk exposure (Value at Risk, one year, 95% level of confidence) of 20% of the Net Assets Value. The EPOTIF Strategic Asset Allocation defines the diversification of the credit-risk-bearing instruments and is used as a benchmark for evaluating the asset manager's performance. The target asset allocation is as follows:

Asset class	in % Weight in portfolio
Fixed income	20.0
Euro long duration AAA	5.0
Euro corporates broad index	10.0
Global short duration bonds	2.5
Global credit	2.5
Growth fixed income	35.0
Global high yield debit	2.5
Emerging market debt LC	12.5
Emerging market debt HC	5.0
Absolute return bonds	10.0
Global convertible bonds	5.0

All EPOTIF debt instruments are managed on the fair value basis.

(c) Financial instruments held by the RFPSS

The limitations and provisions relating to credit exposures are defined in the investment guidelines approved by the RFPSS Supervisory Board and are monitored on a daily basis. The salient features of the policies are indicated below.

Investments in fixed income asset classes must be made in securities within the admissible investment universe and with due consideration to rating criteria specified for the relevant portfolio. At least 85% of direct bond investments of the relevant portfolio shall be rated investment grade. The relevant rating agencies are Standard and Poor's / Moody's / Fitch. Investment grade is defined by a credit rating of BBB- (or equivalent) or higher by one of the above mentioned rating agencies. In the event of a split rating, the best rating is applied. No more than 5% of Fund assets may be invested in the fixed-interest securities of any one issuer except in the case of AAA non-corporate securities. In this case the limit is 8% except for AAA government debt of a member state of the European Union in which case the limit is 25%. A 2% limit of RFPSS assets applies to convertible bonds converting to MSCI listed companies. A Prime-2 or equivalent rating for short-term deposits is required whereby cash and fixed-term deposits must normally be deposited with at least 3 such institutions, with the further restriction of a 5% limit with any one such institution.

The table below presents RFPSS-held financial instruments according to the asset classes used by the RFPSS for risk-management purposes:

	in '000 EUR			
	Rating below "A"	Not rated	Rating "A" and higher	Total
31 December 2019				
Domestic government bonds	373 260	–	1 068 400	1 441 660
Domestic corporate bonds	152 850	–	392 490	545 340
Foreign bonds	–	–	288 512	288 512
Cash and currency forwards	–	–	286 833	286 833
Total financial assets	526 110	–	2 036 235	2 562 345
31 December 2018				
Domestic government bonds	338 517	–	1 353 667	1 692 184
Domestic corporate bonds	114 521	–	371 000	485 521
Foreign bonds	–	–	403 279	403 279
Cash and currency forwards	–	–	212 736	212 736
Total financial assets	453 038	–	2 340 682	2 793 720

For the use of derivatives, limitations and provisions are foreseen in the investment guidelines. Options and futures must be traded on a regulated market or with a regulated counterparty. In the case of non-standardised trades (OTC contracts) with a time to maturity of more than 12 months, the counterparty must have at least an A-rating (Standard & Poor's / Moody's / Fitch). If the contract expires within the next 12 months, a short-term rating of at least A-2 or equivalent is required.

Derivative transactions of the RFPSS are either executed on an exchange, or entered into under German master agreements (DRV). In general, under such agreements the amounts owned by each counterparty on a single day in respect of all transactions outstanding in the same currency are aggregated into a single net amount that is payable by one party to the other. In certain circumstances – e.g. when a credit event such as a default occurs – all outstanding transactions under the agreement are terminated, the termination values is assessed and only a single net amount is due or payable in settlement of all transactions.

The DRV agreements do not meet the criteria for offsetting in the statement of financial position. This is because the RFPSS does not have any currently legally enforceable right to offset recognised amounts, due to the fact that the right to offset is enforceable only on the occurrence of future events such as default.

For the derivative transactions open at year's end, Credit or Debit Value Adjustments are calculated. The counterparty risk assessments are established by the calculation of a Credit Valuation Adjustment ("CVA") for OTC derivative assets and, for symmetrical treatment, the Debit Valuation Adjustment ("DVA"), i.e. the own credit risk assessment for derivative liabilities. The adjustment amount is determined by assessing the potential credit exposure to a given counterparty and, taking into account any collateral held, the effect of any relevant netting arrangements as well as the expected loss given default and the credit risk, based on available market information, including the probability of default.

The table below presents a summary of master netting and similar agreements:

in '000 EUR

31 December 2019	Gross and net amounts of financial instruments in the statement of financial position	Related financial instruments that are not offset	Net amount
Financial assets			
Derivatives used for trading	19 999	(562)	19 437
Total	19 999	(562)	19 437
Financial liabilities			
Derivatives used for trading	562	(562)	–
Total	562	(562)	–
31 December 2018	Gross and net amounts of financial instruments in the statement of financial position	Related financial instruments that are not offset	Net amount
Financial assets			
Derivatives used for trading	9 406	(5 060)	4 346
Total	9 406	(5 060)	4 346
Financial liabilities			
Derivatives used for trading	5 060	(5 060)	–
Total	5 060	(5 060)	–

30.4 Capital management

The EPO is a non-profit organisation and the main objectives of its capital management are to ensure the continuity of its tasks as defined in the EPC – in particular the grant of European patents – and to meet its obligations to its stakeholders.

The stakeholders are the Contracting States, patent applicants and their representatives, serving and former EPO staff, and its product- and/or service-providers.

The Organisation is financed from its own resources, from its share of national renewal fees and, if need be, from special contributions by the Contracting States. Any liquidity deficits would be financed by its Contracting States, so the Organisation has no risk of insolvency.

According to Article 38 EPC, the Organisation's own resources comprise

- (a) all income from fees and other sources, and the Organisation's reserves
- (b) the resources of the RFPSS which are a special class of assets to support the Organisation's pensions and social security scheme by providing the appropriate reserves.

EPO capital management is based on financial planning for a period of five years, including a forecast of budgeted cash flows and of IFRS statements for each of these years. Both are based on a five-year business plan for all EPO services. Analyses of possible developments in demand for European patents and in applicant behaviour are conducted in consultation with the relevant stakeholders.

Actual developments during the year are monitored, in the form of monthly financial management reports to EPO management and quarterly reports to the Budget and Finance Committee and the Administrative Council.

The policy and measures described above are part of EPO management's strategy to ensure that the Organisation can continue as a going concern without any risk of needing to draw on special contributions from the Contracting States.

EPO capital management takes account of how the Organisation is financed (reference is made to Note 2.5.3).

31. Events after the reporting period

In the time between the end of the reporting period and the date when the financial statements were authorised for issue, financial markets experienced significant volatility in the face of the expected economic downturn caused by the coronavirus pandemic. In the first quarter of 2020 the equity index MSCI World (EUR) moved in a range between +7% and -29% as compared to 31 December 2019. The interest rates for 20-year AA-rated corporate bonds were in a range between 0,7% and 2,2%. This volatility may have a potential impact on the valuation of the EPO assets and liabilities at the end of 2020. The main positions that could potentially be affected include the RFPSS assets, the EPO Treasury Investment Fund and the defined benefit liability. At the date when these financial statements were authorised for issue the scale of this impact could not be reliably estimated.

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