Consolidated income statement

For the year ended December 31	Notes	2016 EURm	2015[1] EURm	2014[1] EURm
Net sales	4, 7	**23 614**	**12 499**	**11 762**
Cost of sales	8	(15 158)	(6 963)	(6 774)
Gross profit		**8 456**	**5 536**	**4 988**
Research and development expenses	8	(4 904)	(2 080)	(1 904)
Selling, general and administrative expenses	8	(3 819)	(1 772)	(1 559)
Other income	10	116	236	118
Other expenses	8, 10	(949)	(223)	(229)
Operating (loss)/profit		**(1 100)**	**1 697**	**1 414**
Share of results of associated companies and joint ventures	34	18	29	(12)
Financial income and expenses	11	(287)	(186)	(403)
(Loss)/profit before tax		**(1 369)**	**1 540**	**999**
Income tax benefit/(expense)	12	457	(346)	1 719
(Loss)/profit for the year from Continuing operations		**(912)**	**1 194**	**2 718**
(Loss)/profit for the year from Continuing operations attributable to:				
Equity holders of the parent		(751)	1 192	2 710
Non-controlling interests		(161)	2	8
(Loss)/profit for the year from Continuing operations		**(912)**	**1 194**	**2 718**
(Loss)/profit for the year from Discontinued operations attributable to:				
Equity holders of the parent		(15)	1 274	752
Non-controlling interests		–	–	6
(Loss)/profit for the year from Discontinued operations	6	**(15)**	**1 274**	**758**
(Loss)/profit for the year attributable to:				
Equity holders of the parent		(766)	2 466	3 462
Non-controlling interests		(161)	2	14
(Loss)/profit for the year		**(927)**	**2 468**	**3 476**

Earnings per share attributable to equity holders of the parent	13	EUR	EUR	EUR
Basic earnings per share				
Continuing operations		(0.13)	0.32	0.73
Discontinued operations		0.00	0.35	0.20
(Loss)/profit for the year		(0.13)	0.67	0.94
Diluted earnings per share				
Continuing operations		(0.13)	0.31	0.67
Discontinued operations		0.00	0.32	0.18
(Loss)/profit for the year		(0.13)	0.63	0.85
Average number of shares		000s shares	000s shares	000s shares
Basic				
Continuing operations		5 732 371	3 670 934	3 698 723
Discontinued operations		5 732 371	3 670 934	3 698 723
(Loss)/profit for the year		5 732 371	3 670 934	3 698 723
Diluted				
Continuing operations		5 741 117	3 949 312	4 131 602
Discontinued operations		5 741 117	3 949 312	4 131 602
(Loss)/profit for the year		5 741 117	3 949 312	4 131 602

(1) In 2016, following the Acquisition of Alcatel Lucent, the Group adopted a new financial reporting structure which resulted in changes to allocation and presentation principles of certain costs. Comparatives for 2015 and 2014 have been recast to reflect the new financial reporting structure.

The notes are an integral part of these consolidated financial statements.

Consolidated statement of comprehensive income

For the year ended December 31	Notes	2016 EURm	2015 EURm	2014 EURm
(Loss)/profit for the year		**(927)**	**2 468**	**3 476**
Other comprehensive income				
Items that will not be reclassified to profit or loss:				
Remeasurements on defined benefit plans		613	112	(275)
Income tax related to items that will not be reclassified to profit or loss		(269)	(28)	96
Items that may be reclassified subsequently to profit or loss:				
Translation differences		251	(1 054)	820
Net investment hedges		(103)	322	(167)
Cash flow hedges		14	(5)	(30)
Available-for-sale investments		(75)	113	106
Other (decrease)/increase, net		(6)	2	40
Income tax related to items that may be reclassified subsequently to profit or loss		20	(88)	16
Other comprehensive income/(loss), net of tax	22	**445**	**(626)**	**606**
Total comprehensive (loss)/income for the year		**(482)**	**1 842**	**4 082**
Attributable to:				
Equity holders of the parent		(277)	1 837	4 061
Non-controlling interests		(205)	5	21
Total comprehensive (loss)/income for the year		**(482)**	**1 842**	**4 082**
Attributable to equity holders of the parent:				
Continuing operations		(262)	1 513	2 350
Discontinued operations		(15)	324	1 711
Total attributable to equity holders of the parent		**(277)**	**1 837**	**4 061**
Attributable to non-controlling interests:				
Continuing operations		(205)	5	16
Discontinued operations		–	–	5
Total attributable to non-controlling interests		**(205)**	**5**	**21**

The notes are an integral part of these consolidated financial statements.

Consolidated statement of financial position

As of December 31	Notes	2016 EURm	2015 EURm
ASSETS			
Non-current assets			
Intangible assets	14, 16	10 960	560
Property, plant and equipment	15	1 981	695
Investments in associated companies and joint ventures	34	116	84
Available-for-sale investments	24	1 040	1 004
Deferred tax assets	12	5 701	2 634
Other non-current financial assets	24, 36	254	49
Defined benefit pension assets	27	3 802	25
Other non-current assets	19	328	51
Total non-current assets		**24 182**	**5 102**
Current assets			
Inventories	17	2 506	1 014
Accounts receivable, net of allowances for doubtful accounts	18, 24, 36	6 972	3 913
Prepaid expenses and accrued income	19	1 296	749
Current income tax assets		279	171
Other financial assets	24, 25, 36	296	128
Investments at fair value through profit and loss, liquid assets	24, 36	327	687
Available-for-sale investments, liquid assets	24, 36	1 502	2 167
Cash and cash equivalents	24, 36	7 497	6 995
Total current assets		**20 675**	**15 824**
Assets held for sale		44	–
Total assets		**44 901**	**20 926**
SHAREHOLDERS' EQUITY AND LIABILITIES			
Capital and reserves attributable to equity holders of the parent			
Share capital	20	246	246
Share issue premium		439	380
Treasury shares		(881)	(718)
Translation differences	21	483	292
Fair value and other reserves	21	488	204
Reserve for invested non-restricted equity		15 731	3 820
Retained earnings		3 588	6 279
Total capital and reserves attributable to equity holders of the parent		**20 094**	**10 503**
Non-controlling interests		881	21
Total equity		**20 975**	**10 524**
Non-current liabilities			
Long-term interest-bearing liabilities	23, 24, 36	3 657	2 023
Deferred tax liabilities	12	403	61
Defined benefit pension and post-retirement liabilities	27	5 000	423
Deferred revenue and other long-term liabilities	24, 28	1 453	1 254
Provisions	29	808	250
Total non-current liabilities		**11 321**	**4 011**
Current liabilities			
Short-term interest-bearing liabilities	23, 24, 36	370	51
Other financial liabilities	24, 25, 36	236	114
Current income tax liabilities		634	446
Accounts payable	24, 36	3 781	1 910
Accrued expenses, deferred revenue and other liabilities	28	6 412	3 395
Provisions	29	1 172	475
Total current liabilities		**12 605**	**6 391**
Total liabilities		**23 926**	**10 402**
Total shareholders' equity and liabilities		**44 901**	**20 926**

The notes are an integral part of these consolidated financial statements.

Consolidated statement of cash flows

For the year ended December 31	Notes	2016 EURm	2015 EURm	2014 EURm
Cash flow from operating activities				
(Loss)/profit for the year		(927)	2 468	3 476
Adjustments, total	31	2 407	(261)	(2 262)
Change in net working capital	31	(2 207)	(1 377)	988
Cash (used in)/from operations		(727)	830	2 202
Interest received		85	62	45
Interest paid		(309)	(99)	(336)
Income taxes paid, net		(503)	(290)	(636)
Net cash (used in)/from operating activities		**(1 454)**	**503**	**1 275**
Cash flow from investing activities				
Acquisition of businesses, net of acquired cash		5 819	(98)	(175)
Purchase of current available-for-sale investments, liquid assets(2)		(4 131)	(3 133)	(2 977)
Purchase of investments at fair value through profit and loss, liquid assets		–	(311)	–
Purchase of non-current available-for-sale investments		(73)	(88)	(73)
Proceeds from/(payment of) other long-term loans receivable		11	(2)	7
Proceeds from/(payment of) short-term loans receivable		19	(17)	20
Purchases of property, plant and equipment, and intangible assets		(477)	(314)	(311)
Proceeds from disposal of businesses, net of disposed cash(1)		6	2 586	2 508
Proceeds from disposal of shares in associated companies		10	–	7
Proceeds from maturities and sale of current available-for-sale investments, liquid assets(2)		5 121	3 074	1 774
Proceeds from maturities and sale of investments at fair value through profit and loss, liquid assets		368	48	–
Proceeds from sale of non-current available-for-sale investments		134	149	62
Proceeds from sale of property, plant and equipment and other intangible assets		28	–	44
Dividends received		1	2	–
Net cash from investing activities		**6 836**	**1 896**	**886**
Cash flow from financing activities				
Proceeds from stock option exercises		6	4	–
Purchase of treasury shares		(216)	(173)	(427)
Purchase of equity instruments of subsidiaries(2)		(724)	(52)	(45)
Proceeds from long-term borrowings		225	232	79
Repayment of long-term borrowings(2)		(2 599)	(24)	(2 749)
Repayment of short-term borrowings		(100)	(55)	(42)
Dividends paid and other contributions to shareholders		(1 515)	(512)	(1 392)
Net cash used in financing activities		**(4 923)**	**(580)**	**(4 576)**
Translation differences		43	6	(48)
Net increase/(decrease) in cash and cash equivalents		**502**	**1 825**	**(2 463)**
Cash and cash equivalents as of January 1		6 995	5 170	7 633
Cash and cash equivalents as of December 31		**7 497**	**6 995**	**5 170**

(1) In 2014, proceeds from the Sale of the D&S Business are presented net of the amount of principal and accrued interest on the repaid convertible bonds.
(2) In 2016, Alcatel Lucent ordinary shares and ADSs and OCEANEs acquired in cash by Nokia subsequent to the closing of the reopened exchange offer are presented within cash flow from financing activities as purchase of equity instruments of subsidiaries and repayment of long-term borrowings, respectively. In relation to the Public Buy-Out offer/Squeeze-Out, Nokia's pledged cash asset of EUR 724 million to cover the purchase of the remaining Alcatel Lucent securities was recorded within cash flow from investing activities as purchase of current available-for-sale investments, liquid assets. The amount of pledged cash released upon acquisition of Alcatel Lucent securities of EUR 724 million was recorded within cash flow from investing activities as proceeds from maturities and sale of current available-for-sale investments, liquid assets.

The consolidated statement of cash flows combines cash flows from both the Continuing and the Discontinued operations. Refer to Note 6, Disposals treated as Discontinued operations.

The amounts in the consolidated statement of cash flows cannot be directly traced from the consolidated statement of financial position without additional information on the acquisitions and disposals of subsidiaries and the net foreign exchange differences arising on consolidation.

The notes are an integral part of these consolidated financial statements.

Consolidated statement of changes in shareholders' equity

EURm	Notes	Number of shares outstanding (000s)	Share capital	Share issue premium	Treasury shares	Translation differences	Fair value and other reserves	Reserve for invested non-restricted equity	Retained earnings	Equity holders of the parent	Non-controlling interests	Total
As of January 1, 2014		**3 712 427**	**246**	**615**	**(603)**	**434**	**80**	**3 115**	**2 581**	**6 468**	**192**	**6 660**
Remeasurements of defined benefit plans, net of tax	21						(142)		(46)	(188)		(188)
Translation differences	21					813				813	7	820
Net investment hedge losses, net of tax	21					(148)				(148)		(148)
Cash flow hedges, net of tax							(30)			(30)		(30)
Available-for-sale investments, net of tax	21						103			103		103
Other increase, net							10		39	49		49
Profit for the year									3 462	3 462	14	3 476
Total comprehensive income/(loss) for the year			**–**	**–**	**–**	**665**	**(59)**	**–**	**3 455**	**4 061**	**21**	**4 082**
Share-based payment				4						4		4
Excess tax benefit on share-based payment				10						10		10
Settlement of performance and restricted shares		2 570		(25)	47			(32)		(10)		(10)
Acquisition of treasury shares		(66 904)			(427)					(427)		(427)
Stock options exercise		50								–		–
Dividends[1]									(1 374)	(1 374)	(9)	(1 383)
Disposal of subsidiaries										–	(109)	(109)
Acquisition of non-controlling interests									(7)	(7)	(38)	(45)
Convertible bond—equity component				(114)						(114)		(114)
Other movements				(51)	(5)		1		55	–	1	1
Total other equity movements			**–**	**(176)**	**(385)**	**–**	**1**	**(32)**	**(1 326)**	**(1 918)**	**(155)**	**(2 073)**
As of December 31, 2014		**3 648 143**	**246**	**439**	**(988)**	**1 099**	**22**	**3 083**	**4 710**	**8 611**	**58**	**8 669**
Remeasurements of defined benefit plans, net of tax	21						85		(7)	78		78
Translation differences	21					(1 057)				(1 057)	4	(1 053)
Net investment hedge gains, net of tax	21					252				252		252
Cash flow hedges, net of tax							(4)			(4)		(4)
Available-for-sale investments, net of tax	21						95			95		95
Other increase/(decrease), net							6		1	7	(1)	6
Profit for the year									2 466	2 466	2	2 468
Total comprehensive income/(loss) for the year			**–**	**–**	**–**	**(805)**	**182**	**–**	**2 460**	**1 837**	**5**	**1 842**
Share-based payment				34						34		34
Excess tax benefit on share-based payment				(2)						(2)		(2)
Settlement of performance and restricted shares		1 281		(12)	24			(16)		(4)		(4)
Acquisition of treasury shares		(24 516)			(174)					(174)		(174)
Cancellation of treasury shares					427				(427)	–		–
Stock options exercise		1 042						4		4		4
Dividends[1]									(507)	(507)	(5)	(512)
Acquisition of non-controlling interests									(15)	(15)	(37)	(52)
Convertible bond—equity component				(57)					57	–		–
Convertible bond—conversion to equity		313 681		(30)				750		720		720
Other movements		(436)		8	(7)	(2)		(1)	1	(1)		(1)
Total other equity movements			**–**	**(59)**	**270**	**(2)**	**–**	**737**	**(891)**	**55**	**(42)**	**13**
As of December 31, 2015		**3 939 195**	**246**	**380**	**(718)**	**292**	**204**	**3 820**	**6 279**	**10 503**	**21**	**10 524**

EURm	Notes	Number of shares outstanding (000s)	Share capital	Share issue premium	Treasury shares	Translation differences	Fair value and other reserves	Reserve for invested non-restricted equity	Retained earnings	Equity holders of the parent	Non-controlling interests	Total
As of December 31, 2015		**3 939 195**	**246**	**380**	**(718)**	**292**	**204**	**3 820**	**6 279**	**10 503**	**21**	**10 524**
Remeasurements of defined benefit plans, net of tax	21						348			348	(4)	344
Translation differences	21					289				289	(38)	251
Net investment hedge losses, net of tax	21					(83)				(83)		(83)
Cash flow hedges, net of tax							12			12		12
Available-for-sale investments, net of tax	21						(73)			(73)		(73)
Other decrease, net							(1)		(3)	(4)	(2)	(6)
Loss for the year									(766)	(766)	(161)	(927)
Total comprehensive (loss)/ income for the year			**–**	**–**	**–**	**206**	**286**	**–**	**(769)**	**(277)**	**(205)**	**(482)**
Share-based payment				117						117		117
Excess tax benefit on share-based payment				(6)						(6)		(6)
Settlement of performance and restricted shares		3 408		(22)	68			(52)		(6)		(6)
Acquisition of treasury shares	20	(54 296)			(231)					(231)		(231)
Stock options exercise		1 074		3				3		6		6
Dividends[(1)]									(1 501)	(1 501)	(14)	(1 515)
Acquisitions through business combinations	5	1 765 358						11 616		11 616	1 714	13 330
Equity issuance costs related to acquisitions								(16)		(16)		(16)
Acquisition of non-controlling interests		65 778				(15)	(2)	359	(459)	(117)	(635)	(752)
Vested portion of share-based payment awards related to acquisitions	5			6						6		6
Convertible bond—equity component				(38)					38	–		–
Other movements		(14)		(1)				1		–		–
Total other equity movements			**–**	**59**	**(163)**	**(15)**	**(2)**	**11 911**	**(1 922)**	**9 868**	**1 065**	**10 933**
As of December 31, 2016		**5 720 503**	**246**	**439**	**(881)**	**483**	**488**	**15 731**	**3 588**	**20 094**	**881**	**20 975**

(1) Dividend declared is EUR 0.17 per share, subject to shareholders' approval (dividend EUR 0.16 per share for 2015; special dividend EUR 0.10 per share for 2015; and dividend EUR 0.14 per share for 2014).

The notes are an integral part of these consolidated financial statements.

Notes to consolidated financial statements

1. Corporate information

Nokia Oyj, a public limited liability company incorporated and domiciled in Helsinki, Finland, is the parent company ("Parent Company" or "Parent") for all its subsidiaries ("Nokia" or "the Group"). The Group's operational headquarters are located in Espoo, Finland. The Group is listed on the Nasdaq Helsinki stock exchange, the New York stock exchange and the Euronext Paris stock exchange.

The Group is a leading global provider of mobile and fixed network infrastructure combining hardware, software and services, as well as advanced technologies and licensing that connect people and things.

On March 23, 2017 the Board of Directors authorized the financial statements for 2016 for issuance and filing.

2. Significant accounting policies

Basis of presentation and statement of compliance
The consolidated financial statements are prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board ("IASB") and as adopted by the European Union ("IFRS"). The consolidated financial statements are presented in millions of euros ("EURm"), except as otherwise noted, and are prepared under the historical cost convention, except as disclosed in the accounting policies below. The notes to the consolidated financial statements also conform to the Finnish accounting legislation.

In 2016, comparative presentation of certain items in the consolidated financial statements has been modified to conform with current year presentation.

Other information
This paragraph is included in connection with statutory reporting requirements in Germany. The fully consolidated German subsidiary, Nokia Solutions and Networks GmbH & Co. KG, registered in the commercial register of Munich under HRA 88537, has made use of the exemption available under § 264b of the German Commercial Code ("HGB").

Principles of consolidation
The consolidated financial statements comprise the financial statements of the Parent Company, and each of those companies over which it exercises control. Control over an entity exists when the Group is exposed, or has rights, to variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. When the Group has less than a majority of voting or similar rights in an entity, the Group considers all relevant facts and circumstances in assessing whether it has power over an entity, including the contractual arrangements, and voting rights and potential voting rights. The Group reassesses whether or not it controls an entity if facts and circumstances indicate that there are changes to the elements of control.

Consolidation of a subsidiary begins when the Group obtains control over the subsidiary and ceases when the Group loses control over the subsidiary. Assets, liabilities, income and expenses of a subsidiary acquired or disposed of during the year are included in the consolidated financial statements from the date the Group gains control until the date the Group ceases to control the subsidiary. A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction. If the Group loses control in a subsidiary, the related assets, liabilities, non-controlling interest and other components of equity are derecognized with any gain or loss recognized in the consolidated income statement. Any investment retained in the former subsidiary is measured at fair value.

All inter-company transactions are eliminated as part of the consolidation process. Non-controlling interests are presented separately as a component of net profit and are shown as a component of shareholders' equity in the consolidated statement of financial position.

Business combinations
Business combinations are accounted for using the acquisition method. The consideration transferred in a business combination is measured as the aggregate of the fair values of the assets transferred, liabilities incurred towards the former owners of the acquired entity or business and equity instruments issued. Acquisition-related costs are recognized as expenses in the consolidated income statement in the period in which the costs are incurred and the related services are received with the exception of costs directly attributable to the issuance of equity instruments that are accounted for as a deduction from equity.

Identifiable assets acquired and liabilities assumed are measured at the acquisition date fair values. The Group elects whether to measure the non-controlling interests in the acquiree at fair value or at the proportionate share of the acquiree's identifiable net assets on a business combination by business combination basis. The excess of the aggregate of the consideration transferred and the amount recognized for non-controlling interests over the acquisition date fair values of the identifiable net assets acquired is recorded as goodwill.

Investment in associates and joint ventures
An associate is an entity over which the Group exercises significant influence. Significant influence is the power to participate in the financial and operating policy decisions of the entity, but is not control or joint control over those policies.

A joint venture is a type of joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about relevant activities require the unanimous consent of the parties sharing control.

The Group's investments in associates and joint ventures are accounted for using the equity method. Under the equity method, the investment in an associate or joint venture is initially recognized at cost. The carrying amount of the investment is adjusted to recognize changes in the Group's share of net assets of the associate or joint venture since the acquisition date. The Group's share of profits and losses of associates and joint ventures is included in the consolidated income statement outside operating profit or loss. Any change in other comprehensive income ("OCI") of associates and joint ventures is presented as part of the Group's OCI.

After application of the equity method, as of each reporting date the Group determines whether there is objective evidence that the investment in an associate or joint venture is impaired. If there is such evidence, the Group recognizes an impairment loss that is calculated as the difference between the recoverable amount of the associate or joint venture and its carrying value. The impairment loss is presented in 'Share of results of associated companies and joint ventures' in the consolidated income statement.

Non-current assets held for sale (or disposal groups) and discontinued operations
Non-current assets or disposal groups are classified as assets held for sale if their carrying amounts will be recovered principally through a sale transaction rather than through continuing use. For this to be the case, the asset, or the disposal group, must be available for immediate sale in its present condition subject only to terms that are usual and customary for sales of such assets or disposal groups, and the sale must be highly probable. These assets, or in the case of disposal groups, assets and liabilities, are presented separately in the consolidated statement of financial position and measured at the lower of the carrying amount and fair value less costs to sell.

Non-current assets classified as held for sale, or included in a disposal group classified as held for sale, are not depreciated or amortized.

Discontinued operations are reported when a component of the Group, comprising operations and cash flows that can be clearly distinguished both operationally and for financial reporting purposes from the rest of the Group, is classified as held for sale or has been disposed of, or the component represents a major line of business or geographical area of operations, or is a part of a single coordinated plan to dispose of a separate major line of business or geographical area of operations. Profit or loss from Discontinued operations is reported separately from income and expenses from Continuing operations in the consolidated income statement, with prior periods presented on a comparative basis. Cash flows for Discontinued operations are presented separately in the notes to the consolidated financial statements. Intra-group revenues and expenses between Continuing and Discontinued operations are eliminated.

Revenue recognition

Revenue is recognized when the following criteria for the transaction have been met: significant risks and rewards of ownership have transferred to the buyer; continuing managerial involvement and effective control usually associated with ownership have ceased; the amount of revenue can be measured reliably; it is probable that the economic benefits associated with the transaction will flow to the Group; and the costs incurred or to be incurred in respect of the transaction can be measured reliably. Revenue is measured at the fair value of the consideration received or receivable net of discounts and excluding taxes and duties.

Recurring service revenue which includes managed services and maintenance services is generally recognized on a straight-line basis over the agreed period, unless there is evidence that some other method better represents the rendering of services.

The Group enters into contracts consisting of any combination of hardware, services and software. Within these multiple element arrangements, separate components are identified and accounted for based on the nature of those components, considering the economic substance of the entire arrangement. Revenue is allocated to each separately identifiable component based on the relative fair value of each component. The fair value of each component is determined by taking into consideration factors such as the price of the component when sold separately and the component cost plus a reasonable margin when price references are not available. The revenue allocated to each component is recognized when the revenue recognition criteria for that component have been met.

Revenue from contracts involving the construction of an asset according to customer specifications is recognized using the percentage of completion method. Stage of completion for each contract is measured by either the achievement of contractually defined milestones or costs incurred compared to total project costs.

Revenue on license fees is recognized in accordance with the substance of the relevant agreements. Subsequent to the initial licensing transaction, where the Group has no remaining obligations to perform and licensing fees are non-refundable, revenue is recognized after the customer has been provided access to the underlying asset. Where the Group retains obligations related to the licensed asset after the initial licensing transaction, revenue is typically recognized over a period of time during which remaining performance obligations are satisfied. In some multiple element licensing transactions, the Group applies the residual method in the absence of reference information.

Net sales includes revenue from all licensing negotiations, litigations and arbitrations to the extent that the criteria for revenue recognition have been met.

Government grants

Government grants are recognized when there is reasonable assurance that the Group will comply with the conditions attached to them and the grants will be received. Government grants received as compensation for expenses or losses incurred are recognized in the consolidated income statement as a deduction against the related expenses. Government grants related to assets are presented in the consolidated statement of financial position as deferred income and recognized as income over the same period the asset is depreciated or amortized.

Government grants received in the form of R&D tax credits are recognized as a deduction against R&D expenses if the amount of the tax credit is linked to the amount of R&D expenditures incurred by the Group and the tax credit is a fully collectible asset which will be paid in cash by the government in case the Group is not able to offset it against its income tax payable. R&D tax credits that do not meet both conditions are recognized as income tax benefit.

Employee benefits

Pensions and other post-employment benefits

The Group companies have various post-employment plans in accordance with the local conditions and practices in the countries in which they operate. The plans are generally funded through payments to insurance companies or contributions to trustee-administered funds as determined by periodic actuarial calculations.

In a defined contribution plan, the Group's legal or constructive obligation is limited to the amount that it agrees to contribute to the fund. The Group's contributions to defined contribution plans, multi-employer and insured plans are recognized in the consolidated income statement in the period to which the contributions relate. If a pension plan is funded through an insurance contract where the Group does not retain any legal or constructive obligations, the plan is treated as a defined contribution plan. All arrangements that do not fulfill these conditions are considered defined benefit plans.

For defined benefit plans, including pension and post-retirement healthcare and life insurance, costs are assessed using the projected unit credit method: the cost is recognized in the consolidated income statement so as to spread the benefit over the service lives of employees. The defined benefit obligation is measured as the present value of the estimated future cash outflows using interest rates on high-quality corporate bonds or government bonds with appropriate maturities. Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions are charged or credited to equity in other comprehensive income in the period in which they arise. Past service costs and settlement gains and losses are recognized immediately in the consolidated income statement as part of service cost, when the plan amendment, curtailment or settlement occurs. Curtailment gains and losses are accounted for as past service costs.

The liability or asset recognized in the consolidated statement of financial position is the defined benefit obligation as of the closing date less the fair value of plan assets including effects relating to any asset ceiling.

Remeasurements, comprising actuarial gains and losses, the effect of the asset ceiling and the return on plan assets, excluding amounts recognized in net interest, are recognized immediately in the consolidated statement of financial position with a corresponding debit or credit to Fair Value and Other Reserves in Equity through the consolidated statement of other comprehensive income in the period in which they occur. Remeasurements are not reclassified to the consolidated income statement in subsequent periods.

Actuarial valuations for the Group's defined benefit post-employment plans are performed annually or when a material curtailment or settlement of a defined benefit plan occurs.

Termination benefits

Termination benefits are payable when employment is terminated before the normal retirement date, or whenever an employee accepts voluntary redundancy in exchange for these benefits. The Group recognizes termination benefits when it is demonstrably committed to either terminating the employment of current employees according to a detailed formal plan without possibility of withdrawal, or providing termination benefits as a result of an offer made to encourage voluntary redundancy. Local laws may provide employees with the right to benefits from the employer upon termination whether the termination is voluntary or involuntary. For these specific termination benefits, the portion of the benefit that the Group would be required to pay to the employee in the case of voluntary termination is treated as a constructive obligation determined by local law and accounted for as a defined benefit arrangement as described in the pensions section above.

Share-based payment

The Group offers three types of global equity-settled share-based compensation plans for employees: stock options, performance shares and restricted shares.

Employee services received and the corresponding increase in equity are measured by reference to the fair value of the equity instruments as of the grant date, excluding the impact of any non-market vesting conditions. Non-market vesting conditions attached to the performance shares are included in assumptions about the number of shares that the employee will ultimately receive. The Group reviews the assumptions made on a regular basis and, where necessary, revises its estimates of the number of performance shares that are expected to be settled. Plans that apply tranched vesting are accounted for under the graded vesting model. Share-based compensation is recognized as an expense in the consolidated income statement over the relevant service periods.

The Group has issued certain stock options which are accounted for as cash-settled. The related employee services received and the liabilities incurred are measured at the fair value of the liability. The fair value of stock options is estimated based on the reporting date market value less the exercise price of the stock options. The fair value of the liability is remeasured as of each reporting date and as of the date of settlement, with changes in fair value recognized in the consolidated income statement over the relevant service periods.

Income taxes

The income tax expense comprises current tax and deferred tax. Tax is recognized in the consolidated income statement except to the extent that it relates to items recognized in other comprehensive income, or directly in equity; then the related tax is recognized in other comprehensive income or equity, respectively.

Current taxes are based on the results of group companies and are calculated using the local tax laws and tax rates that are enacted or substantively enacted as of each reporting date. Corporate taxes withheld at the source of the income on behalf of group companies, both recoverable and irrecoverable, as well as penalties and interests on income taxes are accounted for in income taxes.

The Group periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation. It adjusts the amounts recorded, where appropriate, on the basis of amounts expected to be paid to the tax authorities. The amount of current income tax liabilities for uncertain income tax positions is recognized when it is more likely than not that certain tax positions may not be fully sustained upon review by tax authorities. The amounts recorded are based upon the estimated future settlement amount as of each reporting date.

Deferred tax assets and liabilities are determined using the liability method for all temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. Deferred tax assets are recognized to the extent that it is probable that future taxable profit will be available against which the unused tax losses, unused tax credits or deductible temporary differences can be utilized before the unused tax losses or unused tax credits expire. Deferred tax assets are assessed for realizability as of each reporting date. When circumstances indicate it is no longer probable that deferred tax assets will be utilized, adjustments are made as necessary. Deferred tax liabilities are recognized for temporary differences that arise between the fair value and the tax base of identifiable net assets acquired in business combinations.

Deferred tax assets and deferred tax liabilities are offset for presentation purposes when there is a legally enforceable right to set off current tax assets against current tax liabilities, and the deferred tax assets and deferred tax liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities which intend either to settle current tax liabilities and assets on a net basis, or to realize the assets and settle the liabilities simultaneously in each future period in which significant amounts of deferred tax liabilities or deferred tax assets are expected to be settled or recovered.

Deferred tax liabilities are not recognized if they arise from the initial recognition of goodwill. Deferred tax liabilities are provided on taxable temporary differences arising from investments in subsidiaries, associates and joint arrangements, except for deferred tax liability where the timing of the reversal of the temporary difference is controlled by the Group, and it is probable that the temporary difference will not reverse in the foreseeable future.

The enacted or substantively enacted tax rates as of each reporting date that are expected to apply in the period when the asset is realized or the liability is settled are used in the measurement of deferred tax assets and deferred tax liabilities. Deferred tax assets and liabilities are not discounted.

Foreign currency translation

Functional and presentation currency

The financial statements of all group companies are measured using functional currency, which is the currency of the primary economic environment in which the entity operates. The consolidated financial statements are presented in euro, the functional and presentation currency of the Parent Company.

Transactions in foreign currencies

Transactions in foreign currencies are recorded at exchange rates prevailing as of the dates of the individual transactions. For practical reasons, a rate that approximates the actual rate as of the date of the transaction is often used. At the end of the reporting period, monetary assets and liabilities denominated in foreign currency are valued at the exchange rates prevailing at the end of the reporting period. Foreign exchange gains and losses arising from monetary assets and liabilities as well as fair value changes of related hedging instruments are recognized in financial income and expenses. Unrealized foreign exchange gains and losses related to non-current available-for-sale investments are included in the fair value measurement of these investments and recognized in other comprehensive income.

Foreign group companies

All income and expenses of foreign group companies where the functional currency is not the euro are translated into euro at the average foreign exchange rates for the reporting period. All assets and liabilities of foreign group companies are translated into euro at foreign exchange rates prevailing at the end of the reporting period.

Differences resulting from the translation of income and expenses at the average rate and assets and liabilities at the closing rate are recognized as translation differences in consolidated statement of comprehensive income. On the disposal of all or part of a foreign group company through sale, liquidation, repayment of share capital or abandonment, the cumulative amount or proportionate share of translation differences is recognized as income or expense when the gain or loss on disposal is recognized.

Intangible assets
Intangible assets acquired separately are measured on initial recognition at cost. The cost of intangible assets acquired in a business combination is their fair value as of the date of acquisition. Internally generated intangibles, except for development costs that may be capitalized, are expensed as incurred. Development costs are capitalized only if the Group has the technical feasibility to complete the asset; has an ability and intention to use or sell the asset; can demonstrate that the asset will generate future economic benefits; has resources available to complete the asset; and has the ability to measure reliably the expenditure during development.

Following initial recognition, intangible assets are carried at cost less accumulated amortization and accumulated impairment losses. Intangible assets are amortized over their useful lives, generally three to ten years, using the straight-line method which is considered reflecting best the pattern in which the asset's future economic benefits are expected to be consumed. The amortization charges are presented within cost of sales, research and development expenses and selling, general and administrative expenses in the consolidated income statement.

Property, plant and equipment
Property, plant and equipment are stated at cost less accumulated depreciation and accumulated impairment losses. Depreciation is recorded on a straight-line basis over the expected useful lives of the assets as follows:

Buildings and constructions	
Buildings and constructions	20–33 years
Light buildings and constructions	3-20 years
Machinery and equipment	
Production machinery, measuring and test equipment	1-5 years
Other machinery and equipment	3-10 years

Land and water areas are not depreciated.

Maintenance, repairs and renewals are generally expensed in the period in which they are incurred. However, major renovations are capitalized and included in the carrying amount of the asset when it is probable that future economic benefits in excess of the originally assessed standard of performance of the existing asset will flow to the Group. Major renovations are depreciated over the remaining useful life of the related asset. Leasehold improvements are depreciated over the shorter of the lease term and the useful life. Gains and losses on the disposal of property, plant and equipment are included in operating profit or loss.

Leases
Leases are classified as finance leases whenever the terms of the lease transfer substantially all the risks and rewards incidental to ownership to the lessee. All other leases are classified as operating leases.

The Group has entered into various operating lease contracts as a lessee. The related payments are treated as rental expenses and recognized in the consolidated income statement on a straight-line basis over the lease terms unless another systematic approach is more representative of the pattern of the benefit.

The Group does not have any significant finance lease arrangements.

Impairment of goodwill, other intangible assets and property, plant and equipment
The Group assesses the recoverability of the carrying value of goodwill, other intangible assets and property, plant and equipment if events or changes in circumstances indicate that the carrying value may be impaired. In addition, the Group tests the carrying value of goodwill for impairment annually even if there is no indication of impairment.

Factors that the Group considers when it reviews indications of impairment include, but are not limited to, underperformance of the asset relative to its historical or projected future results, significant changes in the manner of using the asset or the strategy for the overall business, and significant negative industry or economic trends.

For impairment testing purposes, goodwill is allocated to the cash-generating units or groups of cash-generating units expected to benefit from the synergies of the business combination. A cash-generating unit, as determined for the purposes of the Group's goodwill impairment testing, is the smallest group of assets, including goodwill, generating cash inflows that are largely independent of the cash inflows from other assets or groups of assets. The carrying value of a cash-generating unit includes its share of relevant corporate assets allocated to it on a reasonable and consistent basis.

The Group conducts its impairment testing by determining the recoverable amount for an asset or a cash-generating unit. The recoverable amount of an asset or a cash-generating unit is the higher of its fair value less costs of disposal and its value-in-use. The recoverable amount is compared to the asset's or cash-generating unit's carrying value. If the recoverable amount for the asset or cash-generating unit is less than its carrying value, the asset is considered impaired and is written down to its recoverable amount. Impairment losses are presented in other expenses, or as a separate line item if significant, in the consolidated income statement.

For more information on the annual impairment testing of goodwill, including key assumptions used in calculating the recoverable amount of goodwill, refer to Note 16, Impairment.

Inventories
Inventories are stated at the lower of cost and net realizable value. Cost is determined using standard cost, which approximates actual cost on a first-in first-out ("FIFO") basis. Net realizable value is the amount that can be realized from the sale of the inventory in the normal course of business after allowing for the costs of realization. In addition to the cost of materials and direct labor, an appropriate proportion of production overhead is included in the inventory values. An allowance is recorded for excess inventory and obsolescence based on the lower of cost and net realizable value.

Fair value measurement
A number of financial instruments are measured at fair value as of each reporting date after initial recognition. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest by using quoted market rates, discounted cash flow analyses and other appropriate valuation models. The Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data is available to measure fair value, maximizing the use of relevant observable inputs and minimizing the use of unobservable inputs. All assets and liabilities for which fair values are being measured or disclosed in the consolidated financial statements are categorized within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

Level 1—Quoted (unadjusted) market prices for exchange-traded products in active markets for identical assets or liabilities;

Level 2—Valuation techniques for which significant inputs other than quoted prices are directly or indirectly observable; and

Level 3—Valuation techniques for which significant inputs are unobservable.

The Group categorizes assets and liabilities that are measured at fair value on a recurring basis into an appropriate level of the fair value hierarchy at the end of each reporting period.

Financial assets

The Group has classified its financial assets in the following categories: available-for-sale investments, derivative and other current financial assets, loans receivable, accounts receivable, financial assets at fair value through profit or loss, and cash and cash equivalents. Derivatives are described in the section on derivative financial instruments.

Available-for-sale investments

The Group invests a portion of the cash needed to cover the projected cash outflows of its ongoing business operations in highly liquid, interest-bearing investments and certain equity instruments. The following investments are classified as available-for-sale based on the purpose of the investment and the Group's ongoing intentions:

- Available-for-sale investments, liquid assets consist of highly liquid, fixed-income and money-market investments with maturities at acquisition of more than three months, as well as bank deposits with maturities or contractual call periods at acquisition of more than three months.
- Investments in technology-related publicly quoted equity shares or unlisted private equity shares and unlisted venture funds, classified in the consolidated statement of financial position as non-current available-for-sale investments.

Current fixed-income and money-market investments are fair valued by using quoted market rates, discounted cash flow analyses and other appropriate valuation models as of the reporting date. Investments in publicly quoted equity shares are measured at fair value using exchange quoted bid prices. Other available-for-sale investments carried at fair value include holdings in unlisted shares. Fair value is estimated using a number of methods, including, but not limited to: the current market value of similar instruments; prices established from a recent arm's-length financing transaction of target companies; and analysis of market prospects and operating performance of target companies, taking into consideration public market comparable companies in similar industry sectors. The Group uses judgment in selecting the appropriate valuation methodology as well as underlying assumptions based on existing market practice and conditions. Changes in these assumptions may cause the Group to recognize impairments or losses in future periods.

The remaining available-for-sale investments are carried at cost less impairment. These are technology-related investments in private equity shares and unlisted venture funds for which fair value cannot be measured reliably due to non-existent public markets or reliable valuation methods.

All purchases and sales of investments are recorded on the trade date, that is, when the Group commits to purchase or sell the asset.

Changes in the fair value of available-for-sale investments are recognized in fair value and other reserves as part of other comprehensive income, with the exception of interest calculated using the effective interest method and foreign exchange gains and losses on current available-for-sale investments recognized directly in the consolidated income statement. Dividends on available-for-sale equity instruments are recognized in the consolidated income statement when the Group's right to receive payment is established. When the investment is disposed of, the related accumulated fair value changes are released from other comprehensive income and recognized in the consolidated income statement. The weighted average method is used to determine the cost basis of publicly listed equities being disposed of. The FIFO method is used to determine the cost basis of fixed-income securities being disposed of. An impairment charge is recorded if the carrying amount of an available-for-sale investment is greater than the estimated fair value and there is objective evidence that the asset is impaired including, but not limited to, counterparty default and other factors causing a reduction in value that can be considered other than temporary. The cumulative net loss relating to the investment is removed from equity and recognized in the consolidated income statement for the period. If, in a subsequent period, the fair value of the investment in a non-equity instrument increases and the increase can be objectively related to an event occurring after the loss was recognized, the loss is reversed and the reversal is recognized in the consolidated income statement.

Investments at fair value through profit and loss, liquid assets

Certain highly liquid financial assets are designated at inception as investments at fair value through profit and loss, liquid assets. These investments must meet one of the following two criteria: the designation eliminates or significantly reduces an inconsistent treatment that would otherwise arise from measuring the assets or recognizing gains or losses on a different basis; or the assets are part of a group of financial assets, which are managed and their performance evaluated on a fair value basis in accordance with a documented risk management or investment strategy. These investments are initially recognized and subsequently remeasured at fair value. Fair value adjustments and realized gains and losses are recognized in the consolidated income statement.

Loans receivable

Loans receivable include loans to customers and suppliers and are measured initially at fair value and subsequently at amortized cost less impairment using the effective interest method. Loans are subject to regular review as to their collectability and available collateral. A valuation allowance is made if a loan is deemed not to be fully recoverable. The related cost is recognized in other expenses or financial expenses, depending on the nature of the receivable to reflect the shortfall between the carrying amount and the present value of expected future cash flows. Interest income on loans receivable is recognized in financial income and expenses in the consolidated income statement by applying the effective interest rate.

Cash and cash equivalents

Cash and cash equivalents consist of cash at bank and in hand and available-for-sale investments, cash equivalents. Available-for-sale investments, cash equivalents consist of highly liquid, fixed-income and money-market investments that are readily convertible to known amounts of cash with maturities at acquisition of three months or less, as well as bank deposits with maturities or contractual call periods at acquisition of three months or less. Due to the high credit quality and short-term nature of these investments, there is an insignificant risk of change in value. Investments in money-market funds that have a risk profile consistent with the aforementioned criteria are also classified as cash equivalents.

Accounts receivable

Accounts receivable include amounts invoiced to customers, amounts where revenue recognition criteria have been fulfilled but the customers have not yet been invoiced, and amounts where the contractual rights to the cash flows have been confirmed but the customers have not yet been invoiced. Billed accounts receivable are carried at the amount invoiced to customers less allowances for doubtful accounts. Allowances for doubtful accounts are based on a periodic review of all outstanding amounts, including an analysis of historical bad debt, customer concentrations, customer creditworthiness, past due amounts, current economic trends and changes in customer payment terms. Impairment charges on receivables identified as uncollectible are included in other operating expenses in the consolidated income statement.

Financial liabilities
The Group has classified its financial liabilities into the following categories: derivative and other current financial liabilities, compound financial instruments, loans payable, and accounts payable. Derivatives are described in the section on derivative financial instruments.

Compound financial instruments
Compound financial instruments have both a financial liability and an equity component from the issuers' perspective. The components are defined based on the terms of the financial instrument and presented and measured separately according to their substance. The financial liability component is initially recognized at fair value, the residual being allocated to the equity component. The allocation remains the same for the life of the compound financial instrument. The financial liability components of convertible bonds issued by the Group are accounted for as loan payables.

Loans payable
Loans payable are recognized initially at fair value net of transaction costs. In subsequent periods, loans payable are presented at amortized cost using the effective interest method. Transaction costs and loan interest are recognized in the consolidated income statement as financial expenses over the life of the instrument.

Accounts payable
Accounts payable are carried at invoiced amount which is considered to be the fair value due to the short-term nature of the Group's accounts payable.

Derivative financial instruments
All derivatives are recognized initially at fair value on the date a derivative contract is entered into and subsequently remeasured at fair value. The method of recognizing the resulting gain or loss varies according to whether the derivatives are designated and qualify under hedge accounting. Generally, the cash flows of a hedge are classified as cash flows from operating activities in the consolidated statement of cash flows as the underlying hedged items relate to the Group's operating activities. When a derivative contract is accounted for as a hedge of an identifiable position relating to financing or investing activities, the cash flows of the contract are classified in the same way as the cash flows of the position being hedged.

Derivatives not designated in hedge accounting relationships carried at fair value through profit and loss
Forward foreign exchange contracts are valued at market-forward exchange rates. Changes in fair value are measured by comparing these rates with the original contract-forward rate. Currency options are valued as of each reporting date by using the Garman & Kohlhagen option valuation model. Changes in fair value are recognized in the consolidated income statement.

Fair values of forward rate agreements, interest rate options, futures contracts and exchange-traded options are calculated based on quoted market rates as of each reporting date. Discounted cash flow analyses are used to value interest rate and cross-currency interest rate swaps. Changes in fair value are recognized in the consolidated income statement.

For derivatives not designated under hedge accounting but hedging identifiable exposures such as anticipated foreign currency denominated sales and purchases, the gains and losses are recognized in other income or expenses. The gains and losses on all other derivatives not designated under hedge accounting are recognized in financial income and expenses in the consolidated income statement.

Embedded derivatives, if any, are identified and monitored by the Group and measured at fair value as of each reporting date with changes in fair value recognized in the consolidated income statement.

Hedge accounting
The Group applies hedge accounting on certain forward foreign exchange contracts, options or option strategies, and interest rate derivatives. Qualifying options and option strategies have zero net premium or a net premium paid. For option structures, the critical terms of the bought and sold options are the same and the nominal amount of the sold option component is not greater than that of the bought option.

Cash flow hedges: hedging of forecast foreign currency denominated sales and purchases
The Group applies hedge accounting for qualifying hedges. Qualifying hedges are those properly documented cash flow hedges of foreign exchange rate risk of future forecast foreign currency denominated sales and purchases that meet the requirements set out in IAS 39, Financial Instruments: Recognition and Measurement. The hedged item must be highly probable and present an exposure to variations in cash flows that could ultimately affect profit or loss. The hedge must be highly effective, both prospectively and retrospectively.

For qualifying foreign exchange forwards, the change in fair value that reflects the change in spot exchange rates and, for qualifying foreign exchange options or option strategies, the change in intrinsic value are deferred in fair value and other reserves in shareholders' equity to the extent that the hedge is effective. The ineffective portion is recognized immediately in the consolidated income statement. Hedging costs, expressed either as the change in fair value that reflects the change in forward exchange rates less the change in spot exchange rates for forward foreign exchange contracts, or as changes in the time value for options or options strategies, are recognized in other income or expenses in the consolidated income statement.

Accumulated changes in fair value from qualifying hedges are released from fair value and other reserves into the consolidated income statement as adjustments to sales and cost of sales when the hedged cash flow affects the consolidated income statement. Forecast foreign currency sales and purchases affect the consolidated income statement at various dates up to approximately one year from the reporting date. If the forecasted transaction is no longer expected to take place, all deferred gains or losses are released immediately into the consolidated income statement. If the hedged item ceases to be highly probable but is still expected to take place, accumulated gains and losses remain in fair value and other reserves until the hedged cash flow affects the consolidated income statement.

Cash flow hedges: hedging of foreign currency risk of highly probable business acquisitions and other transactions
From time to time, the Group hedges cash flow variability caused by foreign currency risk inherent in highly probable business acquisitions and other future transactions that result in the recognition of non-financial assets. When those non-financial assets are recognized in the consolidated statement of financial position, the gains and losses previously deferred in fair value and other reserves are transferred to the initial acquisition cost of the asset. The deferred amounts are ultimately recognized in the consolidated income statement as a result of goodwill assessments for business acquisitions and through depreciation or amortization for other assets. The application of hedge accounting is conditional on the forecast transaction being highly probable and the hedge being highly effective, prospectively and retrospectively.

Cash flow hedges: hedging of cash flow variability on variable rate liabilities
From time to time, the Group applies cash flow hedge accounting for hedging cash flow variability on certain variable rate liabilities. The effective portion of the gain or loss relating to interest rate swaps hedging variable rate borrowings is deferred in fair value and other reserves. The gain or loss related to the ineffective portion is recognized immediately in the consolidated income statement. If hedging instruments are settled before the maturity date of the related liability, hedge accounting is discontinued and all cumulative gains and losses recycled gradually to the consolidated income statement when the hedged variable interest cash flows affect the consolidated income statement.

Fair value hedges: hedging of foreign exchange exposure
The Group applies fair value hedge accounting for foreign exchange risk with the objective to reduce the exposure to fluctuations in the fair value of firm commitments due to changes in foreign exchange rates. Changes in the fair value of derivatives designated and qualifying as fair value hedges, together with any changes in the fair value of the hedged firm commitments attributable to the hedged risk, are recorded in financial income and expenses in the consolidated income statement.

Fair value hedges: hedging of interest rate exposure
The Group applies fair value hedge accounting to reduce exposure to fair value fluctuations of interest-bearing liabilities due to changes in interest rates and foreign exchange rates. Changes in the fair value of derivatives designated and qualifying as fair value hedges, together with any changes in the fair value of hedged liabilities attributable to the hedged risk, are recognized in financial income and expenses. If the hedged item no longer meets the criteria for hedge accounting, hedge accounting ceases and any fair value adjustments made to the carrying amount of the hedged item while the hedge was effective are recognized in financial income and expenses based on the effective interest method.

Hedges of net investments in foreign operations
The Group applies hedge accounting for its foreign currency hedging on net investments. Qualifying hedges are those properly documented hedges of foreign exchange rate risk of foreign currency denominated net investments that are effective both prospectively and retrospectively.

The change in fair value that reflects the change in spot exchange rates for qualifying foreign exchange forwards, and the change in intrinsic value for qualifying foreign exchange options, are deferred in translation differences in the consolidated statement of shareholder's equity. The change in fair value that reflects the change in forward exchange rates less the change in spot exchange rates for forwards, and changes in time value for options are recognized in financial income and expenses. If a foreign currency denominated loan is used as a hedge, all foreign exchange gains and losses arising from the transaction are recognized in translation differences. The ineffective portion is recognized immediately in the consolidated income statement.

Accumulated changes in fair value from qualifying hedges are released from translation differences on the disposal of all or part of a foreign Group company by sale, liquidation, repayment of share capital or abandonment. The cumulative amount or proportionate share of changes in the fair value of qualifying hedges deferred in translation differences is recognized as income or expense when the gain or loss on disposal is recognized.

Provisions
Provisions are recognized when the Group has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required to settle the obligation and a reliable estimate of the amount can be made. When the Group expects a provision to be reimbursed, the reimbursement is recognized as an asset only when the reimbursement is virtually certain. The Group assesses the adequacy of its existing provisions and adjusts the amounts as necessary based on actual experience and changes in facts and circumstances as of each reporting date.

Restructuring provisions
The Group provides for the estimated cost to restructure when a detailed formal plan of restructuring has been completed, approved by management, and announced. Restructuring costs consist primarily of personnel restructuring charges. The other main components are costs associated with exiting real estate locations, and costs of terminating certain other contracts directly linked to the restructuring.

Warranty provisions
The Group provides for the estimated liability to repair or replace products under standard warranty at the time revenue is recognized. The provision is an estimate based on historical experience of the level of repairs and replacements.

Litigation provisions
The Group provides for the estimated future settlements related to litigation based on the probable outcome of potential claims.

Environmental provisions
The Group provides for estimated costs of environmental remediation relating to soil, groundwater, surface water and sediment contamination when the Group becomes obliged, legally or constructively, to rectify the environmental damage, or to perform restorative work.

Project loss provisions
The Group provides for onerous contracts based on the lower of the expected cost of fulfilling the contract and the expected cost of terminating the contract. An onerous contract is a contract in which the unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received under it.

Divestment-related provisions
The Group provides for indemnifications it is required to make to the buyers of its disposed businesses.

Material liability provisions
The Group recognizes the estimated liability for non-cancellable purchase commitments for inventory in excess of forecasted requirements at each reporting date.

Other provisions
The Group provides for other legal and constructive obligations based on the expected cost of executing any such commitments.

Treasury shares
The Group recognizes its own equity instruments that are acquired ("treasury shares") as a reduction of equity at cost of acquisition. When cancelled, the acquisition cost of treasury shares is recognized in retained earnings.

Dividends
Dividends proposed by the Board of Directors are recognized in the consolidated financial statements when they have been approved by the shareholders at the Annual General Meeting.

New and amended standards and interpretations adopted
On January 1, 2016, the Group adopted amendments to multiple IFRS standards, which resulted from the amendments to IAS 1 and the IASB's annual improvement project for the 2012-2014 cycles. They comprise amendments that result in accounting changes for presentation, recognition or measurement purposes, most visibly through additional guidance on use of judgment in applying materiality in aggregation and disaggregation of line items and more generally in the presentation in the financial statements. The amendments did not have a material impact on the Group's consolidated financial statements.

Standards issued but not yet effective
The Group will adopt the following new and revised standards, amendments and interpretations to existing standards issued by the IASB that are expected to be relevant to its operations and financial position when they become effective and are endorsed by the EU. Other revisions, amendments and interpretations to existing standards issued by the IASB that are not yet effective, except what has been described below, are not expected to have a material impact on the consolidated financial statements of the Group when adopted.

The Group has not early adopted any standard, interpretation or amendment that has been issued but is not yet effective.

IFRS 9 Financial Instruments
IFRS 9, Financial Instruments, was issued in July 2014 and replaces IAS 39, Financial Instruments: Recognition and Measurement. It addresses the classification and measurement of financial assets and liabilities, introduces a new impairment model and a new hedge accounting model. The Group will adopt the standard on the effective date of January 1, 2018.

The adoption of the new standard will impact the classification and measurement of the Group's financial assets. The Group has assessed the investments currently classified as current available-for-sale, liquid assets, and will classify certain bank deposits to be measured at amortized cost and certain investment funds to be measured at fair value through profit or loss at the adoption of the new standard. The rest of these investments satisfy the conditions for classification at fair value through other comprehensive income. Also certain trade receivables currently carried at the invoiced amount less allowances for doubtful accounts that are managed with a business model of hold to collect and occasionally sell would be classified at fair value through other comprehensive income. The Group's investments in venture funds that are currently classified as non-current available-for-sale investments would by default be classified at fair value through profit or loss with the election to classify certain investments at fair value through other comprehensive income being available at the adoption of the new standard.

The Group has assessed the impact of the new impairment model. As the credit quality of the Group's fixed income and money market investments is high, no significant impact from the new model is expected. While the Group has not yet assessed in detail the impact of the new model to its current valuation allowances, there can be a limited impact to valuation allowances for trade receivables and loans extended to the Group's customers as the new model may result in an earlier recognition of credit losses.

The new hedge accounting rules will align the accounting for hedging instruments more closely with the Group's risk management practices. The Group's foreign exchange risk management policy and hedge accounting model have already been aligned with the requirements from IFRS 9. Accordingly, the Group does not expect a significant impact on the accounting for its hedging relationships. The new standard also introduces expanded disclosure requirements and changes in presentation that are expected to change the nature and extent of the group's disclosures about its financial instruments, particularly in the year of the adoption of the new standard. The Group continues to assess the detailed impact of IFRS 9.

IFRS 15 Revenue from Contracts with Customers
IFRS 15 Revenue from Contracts with Customers was issued in May 2014 and establishes a new five-step model that will apply to revenue arising from contracts with customers. Under IFRS 15, revenue is recognized to reflect the transfer of promised goods and services to customers for amounts that reflect the consideration to which an entity expects to be entitled in exchange for those goods and services to a customer. The Group will adopt the standard on the effective date of January 1, 2018. The new standard replaces IAS 18, Revenue, and IAS 11, Construction contracts. The Group is currently evaluating whether the application will be the full retrospective or modified retrospective method, both permissible under the new standard.

The Group currently believes that the adoption of the new standard will have a material impact on revenue. Specifically, under some license transfer contracts, revenue is expected to be recorded earlier at a point in time instead of over time. Due to the complexity of some of the Group's license subscription contracts, the actual revenue recognition treatment required under the new standard will be dependent on contract-specific terms. Also, revenue related to certain software contracts is likely to change from over time under the current standard to point in time. The Group continues to assess all potential impacts of IFRS 15.

IFRS 16 Leases
IFRS 16, Leases, issued in January 2016, sets out the requirements for the recognition, measurement, presentation and disclosure of leases. The Group expects to adopt the standard on the effective date of January 1, 2019. The standard provides a single lessee accounting model, requiring lessees to recognize right-of-use assets and lease liabilities for substantially all leases on the consolidated statement of financial position. The Group has started to analyze contracts containing identified assets and estimates that the standard will mainly affect the recognition and disclosure of the Group's operating leases. The full impact of IFRS 16 is currently being assessed. As of December 31, 2016 the Group has non-cancellable operating lease commitments of EUR 1 141 million. Refer to Note 30, Commitments and contingencies.

3. Use of estimates and critical accounting judgments

The preparation of consolidated financial statements requires use of management judgment in electing and applying accounting policies as well as in making estimates that involve assumptions about the future. These judgments, estimates and assumptions may have a significant effect on the consolidated financial statements.

The estimates used in determining the carrying amounts of assets and liabilities subject to estimation uncertainty are based on historical experience, expected outcomes and various other assumptions that were available when these consolidated financial statements were prepared, and they are believed to be reasonable under the circumstances. The estimates are revised if changes in circumstances occur, or as a result of new information or more experience. As estimates inherently contain a varying degree of uncertainty, actual outcomes may differ, resulting in additional charges or credits to the consolidated income statement.

Management considers that the estimates, assumptions and judgments about the following accounting policies represent the most significant areas of estimation uncertainty and critical judgment that may have an impact on the consolidated financial statements.

Business combinations
The Group applies the acquisition method to account for acquisitions of separate entities or businesses. The determination of the fair value and allocation thereof to each separately identifiable asset acquired and liability assumed as well as the determination of the acquisition date, when the valuation and allocation is to be conducted require estimation and judgment.

Estimation and judgment are required in determining the fair value of the acquisition, including the discount rate, the terminal growth rate, the number of years on which to base the cash flow projections, and the assumptions and estimates used to determine the cash inflows and outflows. The discount rate reflects current assessments of the time value of money, relevant market risk premiums, and industry comparisons. Risk premiums reflect risks and uncertainties for which the future cash flow estimates have not been adjusted. Terminal values are based on the expected life of products and forecasted life cycle, and forecasted cash flows over that period. The assumptions are based on information available at the date of acquisition; actual results may differ materially from the forecast as more information becomes available. Refer to Note 5, Acquisitions.

Judgment was required in determining the date on which the Group obtained control of Alcatel Lucent. Nokia and Alcatel Lucent combined through a public exchange offer in which the Group offered to exchange all Alcatel Lucent shares, American Depositary Shares and OCEANE convertible bonds for Nokia shares. The initial offer period was opened on November 18, 2015 and it was closed on December 23, 2015. On January 4, 2016 the French stock market authority Autorité des Marchés Financiers ("AMF") published the interim results of the successful offer which indicated that the Group held 70.52% of the Alcatel Lucent share capital on a fully diluted basis. On January 7, 2016 the Group announced that it had settled the offer and registered the new shares in the Finnish Trade Register, which created legal standing for the acquisition.

The management concluded that it had obtained control over Alcatel Lucent on January 4, 2016 when it was announced that the offer had been successful and the Group had acquired the majority of voting rights in Alcatel Lucent.

In addition, management judgment was used to determine that the initial and reopened offers would be accounted for as a linked transaction. Pursuant to the Article 232-4 of the AMF General Regulation, any public exchange offer made shall be reopened with the same terms and conditions within ten trading days of publication of the final outcome of the offer provided that the offer has been successful. In conformity to this rule, the offer was reopened on January 14, 2016 and closed on February 3, 2016. The AMF published the results of the reopened offer on February 10, 2016 according to which the Group held 91.25% of the share capital of Alcatel Lucent.

Based on the facts that the reopened offer was compulsory according to the AMF General Regulation, the same terms and conditions applied to both the initial and reopened offers, and the reopened offer followed shortly after the initial offer and was open only for a short period, the management concluded that the initial and reopened offers are essentially parts of the same transaction. Therefore, the ownership interests acquired in the initial and reopened offers were accounted for as if they were all acquired at the acquisition date as part of the transaction to gain control. Acquisitions of ownership interests subsequent to the closing of the reopened offer were accounted for as equity transactions with the non-controlling interests in Alcatel Lucent.

Revenue recognition
The Group enters into transactions involving multiple components consisting of any combination of hardware, services, software and intellectual property rights where the Group identifies the separate components and estimates their relative fair values, considering the economic substance of the entire arrangement. The fair value of each component is determined by taking into consideration factors such as the price of the component when sold separately and the component cost plus a reasonable margin when price references are not available. The determination of the fair value and allocation thereof to each separately identifiable component requires the use of estimates and judgment which may have a significant impact on the timing and amount of revenue recognized. In some multiple element licensing transactions, the Group applies the residual method in the absence of reference information.

Net sales includes revenue from all licensing negotiations, litigations and arbitrations to the extent that the criteria for revenue recognition have been met. The final outcome may differ from the current estimate. Refer to Note 7, Revenue recognition.

Pension and other post-employment benefit obligations and expenses
The determination of pension and other post-employment benefit obligations and expenses for defined benefit plans is dependent on a number of estimates and assumptions, including the discount rate, future mortality rate, annual rate of increase in future compensation levels, and healthcare costs trend rates and usage of services in the United States where the majority of our post-employment healthcare plans are maintained. A portion of plan assets is invested in debt and equity securities, which are subject to market volatility. Changes in assumptions and actuarial estimates may materially affect the benefit obligation, future expense and future cash flow. Based on these estimates and assumptions, defined benefit obligations amount to EUR 28 663 million (EUR 1 840 million in 2015) and the fair value of plan assets amounts to EUR 27 770 million (EUR 1 451 million in 2015). The increase in both defined benefit obligations and fair value of plan assets in 2016 compared to 2015 is due to the Acquisition of Alcatel Lucent. Refer to Note 27, Pensions and other post-employment benefits.

Income taxes
The Group is subject to income taxes in the jurisdictions in which it operates. Judgment is required in determining current tax expense, uncertain tax positions, deferred tax assets and deferred tax liabilities; and the extent to which deferred tax assets can be recognized.

Estimates related to the recoverability of deferred tax assets are based on forecasted future taxable income and tax planning strategies. Based on these estimates and assumptions, the Group has EUR 20 952 million (EUR 1 843 million in 2015) of temporary differences, tax losses carry forward and tax credits for which no deferred tax assets are recognized due to uncertainty of utilization. Majority of the unrecognized deferred tax assets relate to France. Refer to Note 12, Income taxes.

The utilization of deferred tax assets is dependent on future taxable profit in excess of the profit arising from the reversal of existing taxable temporary differences. The recognition of deferred tax assets is based on the assessment of whether it is more likely than not that sufficient taxable profit will be available in the future to utilize the reversal of deductible temporary differences, unused tax losses and unused tax credits before the unused tax losses and unused tax credits expire. Recognition of deferred tax assets involves judgment regarding the future financial performance of the particular legal entity or tax group that has recognized the deferred tax asset.

Liabilities for uncertain tax positions are recorded based on estimates and assumptions of the amount and likelihood of outflow of economic resources when it is more likely than not that certain positions may not be fully sustained upon review by local tax authorities. Currently, the Group has ongoing tax investigations in multiple jurisdictions, including India and Germany. Due to the inherently uncertain nature of tax investigations, the ultimate outcome or actual cost of settlement may vary materially from estimates. Refer to Note 12, Income taxes.

Carrying value of cash-generating units ("CGUs")
The recoverable amounts of the groups of CGUs and the CGU were based on fair value less costs of disposal that was determined using market participant assumptions based on a discounted cash flow calculation. The cash flow projections used in calculating the recoverable amounts were based on financial plans approved by management covering an explicit forecast period of five years. Five additional years of cash flow projections subsequent to the explicit forecast period reflect a gradual progression towards the steady state cash flow projections modeled in the terminal year. Estimation and judgment are required in determining the components of the recoverable amount calculation, including the discount rate, the terminal growth rate, estimated revenue growth rates, gross margin and operating margin. The discount rates reflect current assessments of the time value of money and relevant market risk premiums reflecting risks and uncertainties for which the future cash flow estimates have not been adjusted. The terminal growth rate assumptions reflect long-term average growth rates for the industry and economies in which the groups of CGUs and the CGU operate.

The Group allocated a significant proportion of the goodwill arising from the Acquisition of Alcatel Lucent to the IP/Optical Networks group of CGUs, which is comprised mainly of businesses acquired in the acquisition. As a result, the fair value of the IP/Optical Networks group of CGUs corresponds closely to its respective carrying amount.

The results of the impairment testing indicate significant headroom for each group of CGUs and CGU, except for the IP/Optical Networks group of CGUs, where the recoverable amount exceeds its carrying amount by approximately EUR 1 200 million. Taken in isolation, the following changes would cause the recoverable amount of IP/Optical Networks group of CGUs to equal its carrying amount:

- Increase in discount rate from 8.9% to 10.7%.
- Reduction in operational profitability in the terminal year by 40% which is equal to the decrease in the operating profit of EUR 331 million.

Total goodwill amounts to EUR 5 724 million as of December 31, 2016 (EUR 237 million in 2015). Refer to Note 14, Intangible assets and Note 16, Impairment.

Allowances for doubtful accounts
Allowances for doubtful accounts are recognized for estimated losses resulting from customers' inability to meet payment obligations. Estimation and judgment are required in determining the value of allowances for doubtful accounts at each reporting date. Management specifically analyzes accounts receivable and historical bad debt; customer concentrations; customer creditworthiness; past due balances; current economic trends; and changes in customer payment terms when determining allowances for doubtful accounts. Additional allowances may be required in future periods if financial positions of customers deteriorate, reducing their ability to meet payment obligations. Based on these estimates and assumptions, allowances for doubtful accounts are EUR 168 million (EUR 62 million in 2015), representing 2% of accounts receivable (2% in 2015). Refer to Note 18, Allowances for doubtful accounts.

Allowances for excess and obsolete inventory
Allowances for excess and obsolete inventory are recognized for excess amounts, obsolescence and declines in net realizable value below cost. Estimation and judgment are required in determining the value of the allowance for excess and obsolete inventory at each reporting date. Management specifically analyzes estimates of future demand for products when determining allowances for excess and obsolete inventory. Changes in these estimates could result in revisions to the valuation of inventory in future periods. Based on these estimates and assumptions, allowances for excess and obsolete inventory are EUR 456 million (EUR 195 million in 2015), representing 15% of inventory (16% in 2015). Refer to Note 17, Inventories.

Fair value of derivatives and other financial instruments
The fair value of derivatives and other financial instruments that are not traded in an active market such as unlisted equities is determined using valuation techniques. Estimation and judgment are required in selecting an appropriate valuation technique and in determining the underlying assumptions. Where quoted market prices are not available for unlisted shares, the fair value is based on a number of factors including, but not limited to, the current market value of similar instruments; prices established from recent arm's-length transactions; and/or analysis of market prospects and operating performance of target companies with reference to public market comparable companies in similar industry sectors. Changes in these estimates could result in impairments or losses in future periods. Based on these estimates and assumptions, the fair value of derivatives and other financial instruments that are not traded in an active market, using non-observable data (level 3 of the fair value hierarchy), is EUR 660 million (EUR 688 million in 2015), representing 24% of total net financial assets measured at fair value on a recurring basis (19% in 2015). Refer to Note 24, Fair value of financial instruments.

Provisions
Provisions are recognized when the Group has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required to settle the obligation, and a reliable estimate of the amount can be made. At times, judgment is required in determining whether the Group has a present obligation; estimation is required in determining the value of the obligation. Whilst provisions are based on the best estimate of unavoidable costs, management may be required to make a number of assumptions surrounding the amount and likelihood of outflow of economic resources, and the timing of payment. Changes in estimates of timing or amounts of costs to be incurred may become necessary as time passes and/or more accurate information becomes available. Based on these estimates and assumptions, provisions amount to EUR 1 980 million (EUR 725 million in 2015). Refer to Note 29, Provisions.

Legal contingencies
Legal proceedings covering a wide range of matters are pending or threatened in various jurisdictions. Provisions are recognized for pending litigation when it is apparent that an unfavorable outcome is probable and a best estimate of unavoidable costs can be reasonably estimated. Due to the inherently uncertain nature of litigation, the ultimate outcome or actual cost of settlement may vary materially from estimates. Refer to Note 29, Provisions.

4. Segment information

The Group has two businesses: Nokia's Networks business and Nokia Technologies, and three reportable segments for financial reporting purposes: (1) Ultra Broadband Networks and (2) IP Networks and Applications within Nokia's Networks business; and (3) Nokia Technologies. Segment-level information for Group Common and Other is also presented.

The Group has aggregated Mobile Networks and Fixed Networks operating segments to one reportable segment, Ultra Broadband Networks; and IP/Optical Networks and Applications & Analytics operating segments to one reportable segment, IP Networks and Applications. The aggregated operating segments have similar economic characteristics, such as long-term margins; have similar products, production processes, distribution methods and customers; and operate in a similar regulatory environment.

The current operational and reporting structure was adopted following the Acquisition of Alcatel Lucent on January 4, 2016. Previously the Group had three operating and reportable segments in its Continuing operations for management reporting purposes: Mobile Broadband and Global Services within Nokia Networks, and Nokia Technologies. Prior period segment information has been regrouped and recasted for comparability purposes according to the new operating and reporting structure.

The chief operating decision maker receives monthly financial information for the operating and reportable segments. Key financial performance measures of the reportable segments include primarily net sales and operating profit. The chief operating decision maker evaluates the performance of the segments and allocates resources to them based on segment operating profit[(1)].

Accounting policies of the segments are the same as those described in Note 2, Significant accounting policies. Inter-segment revenues and transfers are accounted for as if the revenues were to third parties, that is, at current market prices. Certain costs and revenue adjustments[(1)] are not allocated to the segments.

No single customer represents 10% or more of revenues.

Segment descriptions

Ultra Broadband Networks

Ultra Broadband Networks comprises Mobile Networks and Fixed Networks operating segments.

The Mobile Networks operating segment offers an industry-leading portfolio of end-to-end mobile networking solutions comprising hardware, software and services for telecommunications operators, enterprises and related markets/verticals, such as public safety and Internet of Things ("IoT").

The Fixed Networks operating segment provides copper and fiber access products, solutions and services. The portfolio allows for a customized combination of technologies that brings fiber to the most economical point for the customer.

IP Networks and Applications

IP Networks and Applications comprises IP/Optical Networks and Applications & Analytics operating segments.

The IP/Optical Networks operating segment provides the key IP routing and optical transport systems, software and services to build high capacity network infrastructure for the internet and global connectivity.

The Applications & Analytics operating segment offers software solutions spanning customer experience management, network operations and management, communications and collaboration, policy and charging, as well as Cloud, IoT, security, and analytics platforms that enable digital services providers and enterprises to accelerate innovation, monetize services, and optimize their customer experience.

Nokia Technologies

The Nokia Technologies operating segment has two main objectives: to drive growth and renewal in its existing patent licensing business; and to build new businesses based on breakthrough innovation in key technologies and products, in the areas of Digital Media and Digital Health.

From January 2016, the majority of net sales and related costs and expenses attributable to licensing and patenting the separate patent portfolios of Nokia Technologies, Nokia's Networks business, and Nokia Bell Labs are recorded in Nokia Technologies. Each reportable segment continues to separately record its own research and development expenses.

Group Common and Other

Segment-level information for Group Common and Other is also presented. From January 2016, Group Common and Other includes the Alcatel-Lucent Submarine Networks and Radio Frequency Systems businesses, both of which are being managed as separate entities. In addition, Group Common and Other includes Nokia Bell Labs' operating expenses, as well as certain corporate-level and centrally managed operating expenses.

(1) Segment results exclude costs related to the Acquisition of Alcatel Lucent and related integration, goodwill impairment charges, intangible asset amortization and other purchase price fair value adjustments, restructuring and associated charges and certain other items.

Segment information

EURm	Ultra Broadband Networks[1]	IP Networks and Applications[2]	Nokia's Networks business total[3]	Nokia Technologies	Group Common and Other	Eliminations	Segment total	Unallocated items[4]	Total
Continuing operations									
2016									
Net sales to external customers	15 770	6 029	21 799	1 038	1 108	–	**23 945**	(331)	**23 614**
Net sales to other segments	1	–	1	15	37	(53)	**–**	–	**–**
Depreciation and amortization	348	151	499	8	45	–	**552**	1 042	**1 594**
Impairment charges	9	–	9	–	8	–	**17**	–	**17**
Operating profit/(loss)	1 362	573	1 935	579	(342)	–	**2 172**	(3 272)	**(1 100)**
Share of results of associated companies and joint ventures	18	–	18	–	–	–	**18**	–	**18**
2015									
Net sales to external customers	10 159	1 328	11 487	1 012	–	–	**12 499**	–	**12 499**
Net sales to other segments	–	–	–	15	–	(15)	**–**	–	**–**
Depreciation and amortization	158	35	193	6	8	–	**207**	79	**286**
Impairment charges	–	–	–	–	11	–	**11**	–	**11**
Operating profit/(loss)	1 211	138	1 349	698	(89)	–	**1 958**	(261)	**1 697**
Share of results of associated companies and joint ventures	29	–	29	–	–	–	**29**	–	**29**
2014									
Net sales to external customers	9 817	1 326	11 143	618	1	–	**11 762**	–	**11 762**
Net sales to other segments	1	–	1	14	–	(15)	**–**	–	**–**
Depreciation and amortization	131	33	164	2	7	–	**173**	67	**240**
Impairment charges	–	–	–	–	13	–	**13**	–	**13**
Operating profit/(loss)	1 251	188	1 439	389	(226)	–	**1 602**	(188)	**1 414**
Share of results of associated companies and joint ventures	(12)	–	(12)	–	–	–	**(12)**	–	**(12)**

(1) Includes Mobile Networks net sales of EUR 13 406 million (EUR 10 023 million in 2015 and EUR 9 639 million in 2014) and Fixed Networks net sales of EUR 2 365 million (EUR 136 million in 2015 and EUR 179 million in 2014).
(2) Includes IP Routing net sales of EUR 2 940 million (EUR 515 million in 2015 and EUR 523 million in 2014), Optical Networks net sales of EUR 1 562 million and Applications & Analytics net sales of EUR 1 527 million (EUR 813 million in 2015 and EUR 803 million in 2014).
(3) Includes services net sales of EUR 8 531 million (EUR 5 424 million in 2015 and EUR 5 078 million in 2014).
(4) Excludes costs related to the Acquisition of Alcatel Lucent and related integration, goodwill impairment charges, intangible asset amortization and other purchase price fair value adjustments, restructuring and associated charges and certain other items.

Reconciliation of total segment operating profit to total operating profit

EURm	2016	2015	2014
Total segment operating profit	2 172	1 958	1 602
Amortization and depreciation of acquired intangible assets and property, plant and equipment	(1 026)	(79)	(67)
Release of acquisition-related fair value adjustments to deferred revenue and inventory	(840)	–	–
Restructuring and associated charges	(774)	(123)	(57)
Product portfolio strategy costs	(348)	–	–
Transaction and related costs, including integration costs relating to the Acquisition of Alcatel Lucent	(295)	(99)	(39)
Other	11	40	(25)
Total operating (loss)/profit	**(1 100)**	**1 697**	**1 414**

Net sales to external customers by geographic location of customer

EURm	2016	2015	2014
Finland[1]	1 138	1 100	680
United States	6 635	1 489	1 445
China	2 249	1 323	994
India	1 281	1 098	768
France	1 055	207	220
United Kingdom	717	394	296
Australia	646	133	189
Japan	627	877	1 194
Germany	567	312	400
Saudi Arabia	565	364	291
Other	8 134	5 202	5 285
Total	**23 614**	**12 499**	**11 762**

(1) All Nokia Technologies IPR and licensing net sales are allocated to Finland.

Non-current assets by geographic location[1]

EURm	2016	2015
Finland	726	724
United States	7 946	159
France	2 369	2
China	458	129
India	130	70
Other	1 312	171
Total	**12 941**	1 255

(1) Consists of goodwill and other intangible assets and property, plant and equipment.

5. Acquisitions

Alcatel Lucent business combination

On April 15, 2015, the Group and Alcatel Lucent announced their intention to combine through a public exchange offer ("exchange offer") in France and the United States. Alcatel Lucent is a global leader in IP networking, ultra-broadband access and Cloud applications. The combined company leverages the combined scale of operations, complementary technologies, portfolios and geographical presence; and unparalleled innovation capabilities to lead in the next generation network technology and services, and to create access to an expanded addressable market with improved long-term growth opportunities.

Acquisition of Alcatel Lucent Securities

The Group obtained control of Alcatel Lucent on January 4, 2016 when the interim results of the successful initial exchange offer were announced by the French stock market authority, Autorité des Marchés Financiers ("AMF"). On January 14, 2016, as required by the AMF General Regulation, the Group reopened its exchange offer in France and the United States for the outstanding Alcatel Lucent ordinary shares, Alcatel Lucent American Depositary Shares ("ALU ADS") and OCEANE convertible bonds (the "OCEANEs", collectively "Alcatel Lucent Securities") not tendered during the initial exchange offer period. The reopened exchange offer closed on February 3, 2016. The Group has determined that the initial and the reopened exchange offers are linked transactions that are considered together as a single arrangement, given that the reopened exchange offer is required by the AMF General Regulation and is based on the same terms and conditions as the initial exchange offer.

As part of the exchange offers, holders of Alcatel Lucent Securities could exchange Alcatel Lucent Securities for Nokia shares and Nokia American Depositary Shares ("Nokia ADS") on the basis of 0.55 Nokia share or Nokia ADS for every Alcatel Lucent share or ALU ADS.

Following the initial and reopened exchange offers, the Group held 90.34% of the share capital, and at least 90.25% of the voting rights of Alcatel Lucent. The Group issued a total of 1 776 379 756 new Nokia shares as consideration for the Alcatel Lucent Securities tendered in the exchange offers.

Alcatel Lucent ordinary shares and ALU ADSs acquired subsequent to the closing of the reopened exchange offer, including through the Public Buy-Out Offer and the Squeeze-Out, were accounted for as equity transactions with the remaining non-controlling interests in Alcatel Lucent. As such, any new Nokia shares or cash consideration paid for these instruments were recorded directly in equity against the carrying amount of non-controlling interests. The acquisition of OCEANEs subsequent to the transactions linked to the exchange offer was treated both as extinguishment of debt and equity transaction with remaining non-controlling interests in Alcatel Lucent, with the redemption consideration allocated to the liability and equity components.

Subsequent to the exchange offers, the following transactions were carried out relating to the acquisition of the remaining outstanding equity interests in Alcatel Lucent:

- On February 12, 2016, the OCEANEs acquired as part of the initial and reopened exchange offers were converted to Alcatel Lucent shares.
- On February 19, 2016, the Group announced the issue of 6 501 503 new Nokia shares in exchange for Alcatel Lucent shares in a private transaction at the 0.55 exchange offer provided in the initial and reopened exchange offers. This transaction was based on a Board of Directors resolution on February 18, 2016.
- On May 9, 2016, the acquisition of 107 775 949 Alcatel Lucent shares was closed in exchange for 59 276 772 new Nokia shares from JPMorgan Chase Bank N.A., as depositary, pursuant to the share purchase agreement announced on March 17, 2016. These shares represented Alcatel Lucent shares that remained in the ALU ADS receipts program after the cancellation period and following the program's termination on April 25, 2016.
- On May 12, 2016, the Group agreed to acquire 72 994 133 of 2019 OCEANEs and 19 943 533 of 2020 OCEANEs through a privately negotiated transaction in consideration for an aggregate cash payment of EUR 419 million.
- On June 17, 2016, 24 392 270 Alcatel Lucent shares, 9 614 661 of 2019 OCEANEs and 2 290 001 of 2020 OCEANEs were acquired through privately negotiated transactions in consideration for an aggregate cash payment of EUR 85 million for the Alcatel Lucent shares (corresponding to a unit price of EUR 3.50 per share) and EUR 54 million for the OCEANEs (corresponding to a unit price of EUR 4.51 per 2019 OCEANE and EUR 4.50 per 2020 OCEANE).

Following these transactions, the Group held 95.32% of the share capital and 95.25% of the voting rights in Alcatel Lucent, corresponding to 95.15% of the Alcatel Lucent shares on a fully diluted basis.

On September 6, 2016, a joint offer document was filed with Alcatel Lucent with the AMF relating to the proposed Public Buy-Out Offer, in cash, for the remaining Alcatel Lucent shares and OCEANEs (the "Public Buy-Out Offer"). The Public Buy-Out Offer was followed by a Squeeze-Out in accordance with the AMF General Regulation, in cash, for the Shares and OCEANEs not tendered into the Public Buy-Out Offer (the "Squeeze-Out", and together with the Public Buy-Out Offer, the "Offer").

Following the AMF Offer clearance decision on September 20, 2016, the Group commenced the Public Buy-Out Offer on September 22, 2016 pursuant to which it proposed to all holders of the Alcatel Lucent shares and OCEANEs to acquire Nokia securities. The financial terms of the Public Buy-Out Offer were:

- EUR 3.50 per Alcatel Lucent share;
- EUR 4.51 per 2019 OCEANE; and
- EUR 4.50 per 2020 OCEANE.

On October 4, 2016, the AMF announced that a legal action was filed before the Paris Court of Appeal on September 30, 2016 for the annulment of the AMF's Offer clearance decision. Pursuant to the AMF General Regulation, the Group provided a pledge in relation to the Offer to cover the purchase of the remaining Alcatel Lucent Securities.

On October 25, 2016, the AMF announced the continuation of the Offer timetable. Accordingly, the Public Buy-Out Offer period ended on October 31, 2016, and the Squeeze-Out was implemented on November 2, 2016, in accordance with the AMF General Regulation. In the Squeeze-Out, the Alcatel Lucent shares and OCEANEs not tendered into the Public Buy-Out Offer were transferred to the Group for the same consideration as the above-mentioned consideration of the Public Buy-Out Offer, net of all costs. The remaining outstanding Alcatel Lucent stock options and performance shares were modified to settle in cash or Nokia shares.

On November 2, 2016, following the Public Buy-Out Offer and the Squeeze-Out, the Group held 100% of the share capital and voting rights of Alcatel Lucent. Alcatel Lucent shares and OCEANEs were delisted from the Euronext Paris regulated market on the same date.

On December 15, 2016, the plaintiffs withdrew their complaint for the annulment of the AMF's Offer clearance decision from the Paris Court of Appeal. Consequently, the commitments, put in place as a precautionary measure, are no longer in force and the funds and Alcatel Lucent Securities deposited into escrow accounts were released and the Group no longer has an obligation to maintain the integrity of the entity Alcatel Lucent SA.

Purchase consideration

The purchase consideration comprises the fair value of the consideration paid for the Alcatel Lucent Securities obtained through the exchange offers, and the fair value of the portion of Alcatel Lucent stock options and performance shares attributable to pre-combination services that were settled with Nokia shares. The fair value of the purchase consideration is based on the closing price of Nokia share of EUR 6.58 on Nasdaq Helsinki on January 4, 2016, and the exchange offer ratio of 0.55 Nokia share for every Alcatel Lucent share.

Fair value of the purchase consideration:

	EURm
Alcatel Lucent shares or ADSs	10 046
OCEANE convertible bonds	1 570
Consideration attributable to the vested portion of replacement share-based payment awards	6
Total	**11 622**

Fair value of the purchase consideration is based on the results of the initial and the reopened exchange offers.

Purchase accounting
The Group has finalized Alcatel Lucent acquisition-related purchase accounting, including purchase price allocation. The fair values of the identifiable assets and liabilities, as of the date of acquisition:

	EURm
Non-current assets	
Intangible assets	5 711
Property, plant and equipment	1 412
Deferred tax assets	2 328
Defined benefit pension assets	3 201
Other non-current assets	687
Total non-current assets	**13 339**
Current assets	
Inventories	1 992
Accounts receivable	2 813
Other current assets	1 360
Cash and cash equivalents	6 198
Total current assets	**12 363**
Total assets acquired	**25 702**
Non-current liabilities	
Long-term interest-bearing liabilities	4 037
Deferred tax liabilities	425
Defined benefit pension and post-retirement liabilities	4 464
Other non-current liabilities	601
Total non-current liabilities	**9 527**
Current liabilities	
Current borrowings and other financial liabilities	671
Other current liabilities	7 252
Total current liabilities	**7 923**
Total liabilities assumed	**17 450**
Net identifiable assets acquired	**8 252**
Attributable to:	
Equity holders of the parent	6 538
Non-controlling interests	1 714
Goodwill	5 084
Purchase consideration	**11 622**

Goodwill arising from the Acquisition of Alcatel Lucent amounts to EUR 5 084 million and is primarily attributable to synergies arising from the significant economies of scale and scope that the Group is expecting to benefit from as part of the new combined entity. Goodwill was allocated to the four operating segments within Nokia's Networks business. Refer to Note 16, Impairment.

The components of non-controlling interests in Alcatel Lucent that are present ownership interests and entitle their holders to a proportionate share of the entity's net assets in the event of liquidation, were measured based on the non-controlling interests' proportionate share of the fair value of the acquired identifiable net assets. As such, goodwill excludes the goodwill related to the non-controlling interests. The equity component of the remaining outstanding OCEANEs, as well as the outstanding stock options and performance shares that will be settled in Alcatel Lucent ordinary shares were measured at fair value within non-controlling interests.

Fair values of other intangible assets acquired:

	Fair value EURm	Amortization period years
Customer relationships	2 902	10
Technologies	2 170	4
Other	639	8
Total	**5 711**	

Acquisition-related costs not directly attributable to the issue of shares, recorded in selling, general and administrative expenses and other expenses in the consolidated income statement, and in operating cash flows in the consolidated statement of cash flows, amount to EUR 125 million, of which EUR 93 million is recognized in 2016.

From January 4 to December 31, 2016 the acquired business contributed revenues of EUR 12 151 million and a net loss of EUR 508 million to the consolidated income statement. These amounts have been calculated using the subsidiary's results, adjusting them for accounting policy alignments.

Other acquisitions

In 2016 the Group acquired four businesses (two businesses in 2015), which are individually immaterial to the consolidated financial statements. Goodwill arising on acquisitions is attributable to future derivations of the acquired technology, future customers and assembled workforce, and has been allocated to cash-generating units or groups of cash-generating units expected to benefit from the synergies of the combination. Refer to Note 16, Impairment. The majority of goodwill acquired in 2016 is not expected to be deductible for tax purposes. The acquired intangible assets are primarily technology-based intangible assets.

Acquisitions in 2016 and 2015:

Company/business	Description
2016	
Nakina Systems Inc.	Nakina Systems Inc. is a Canadian security and operational systems software company. The Group acquired the business through an asset transaction on March 31, 2016.
Withings S.A.	Withings S.A. is a provider of digital health products and services. The Group acquired 100% ownership interest on May 31, 2016.
Gainspeed	Gainspeed is a United States-based start-up specializing in Distributed Access Architecture ("DDA") solutions for the cable industry through its Virtual Converged Cable Access Platform ("CCAP") product line. The Group acquired 100% ownership interest on July 29, 2016.
ETA Devices	ETA Devices is a United States-based start-up specializing in power amplifier efficiency solutions for base stations, access points and devices. The Group acquired 100% ownership interest on October 4, 2016.
2015	
Wireless network business of Panasonic	The business transfer included Panasonic's LTE/3G wireless base station system business, related wireless equipment system business, fixed assets and business contracts with Panasonic's customers as well as more than 300 Panasonic employees. The Group acquired the business through an asset transaction on January 1, 2015.
Eden Rock Communications, LLC	Eden Rock Communications is a pioneer in SON and creator of Eden-NET, an industry leading multivendor centralized in SON solution. The Group acquired 100% ownership interest on July 10, 2015.

Total consideration paid, aggregate fair values of intangible assets, other net assets acquired and resulting goodwill as of each acquisition date:

EURm	2016	2015
Other intangible assets	70	56
Other net assets	16	33
Total identifiable net assets	**86**	**89**
Goodwill	274	7
Total purchase consideration(1)	**360**	**96**

(1) The total purchase consideration does not equal to the acquisition of businesses, net of acquired cash in the consolidated statement of cash flows due to foreign exchange rate differences and the timing of the consideration payment.

6. Disposals treated as Discontinued operations

Results of Discontinued operations

EURm	2016	2015	2014
Net sales	–	1 075	3 428
Cost of sales	–	(244)	(2 325)
Gross profit	–	**831**	**1 103**
Research and development expenses	–	(498)	(899)
Selling, general and administrative expenses	(11)	(213)	(628)
Other income and expenses	(4)	(23)	(1 354)
Operating (loss)/profit	**(15)**	**97**	**(1 778)**
Financial income and expenses	14	(9)	10
(Loss)/profit before tax	**(1)**	**88**	**(1 768)**
Income tax (expense)/benefit	(28)	8	(277)
(Loss)/profit for the year, ordinary activities	**(29)**	**96**	**(2 045)**
Gain on the sale of HERE and D&S Businesses, net of tax[1]	14	1 178	2 803
(Loss)/profit for the year	**(15)**	**1 274**	**758**

(1) In 2016, an additional gain on the sale of EUR 7 million was recognized related to the HERE business as a result of the final settlement of the purchase price, and EUR 7 million related to the D&S business due to a tax indemnification.

Sale of the HERE Business

On August 3, 2015 the Group announced the Sale of the HERE Business to a consortium of leading automotive companies, comprising AUDI AG, BMW Group and Daimler AG. Subsequent to the announcement, the Group has presented the HERE business as Discontinued operations. The HERE business was previously an operating and reportable segment and its business focused on the development of location intelligence, location-based services and local commerce. The Sale of the HERE Business was completed on December 4, 2015.

Gain on the Sale of the HERE Business

	EURm
Fair value of sales proceeds less costs to sell[1]	2 551
Net assets disposed of	(2 667)
Total	**(116)**
Foreign exchange differences reclassified from other comprehensive income[2]	1 174
Gain before tax	**1 058**
Income tax benefit[3]	120
Total gain	**1 178**

(1) Comprises purchase price of EUR 2 800 million, offset by adjustments for certain defined liabilities of EUR 249 million.
(2) Includes cumulative translation differences for the duration of ownership from translation of mainly U.S. dollar denominated balances into euro.
(3) The disposal was largely tax exempt, the tax benefit is due to hedging-related tax deductible losses.

Assets and liabilities, HERE business

Assets and liabilities disposed of at December 4, 2015:

EURm	December 4, 2015
Goodwill and other intangible assets	2 722
Property, plant and equipment	115
Deferred tax assets and non-current assets	151
Inventories	14
Trade and other receivables	174
Prepaid expenses and other current assets	87
Cash and cash equivalents and current available-for-sale investments, liquid assets	56
Total assets	**3 319**
Deferred tax liabilities and other liabilities	286
Trade and other payables	55
Deferred income and accrued expenses	306
Provisions	5
Total liabilities	**652**
Net assets disposed of	**2 667**

Results of Discontinued operations, HERE business

EURm	2016	2015	2014
Net sales	–	1 075	970
Cost of sales	–	(243)	(239)
Gross profit	**–**	**832**	**731**
Research and development expenses	–	(498)	(545)
Selling, general and administrative expenses	(1)	(198)	(181)
Other income and expenses[1]	–	(18)	(1 247)
Operating (loss)/profit	**(1)**	**118**	**(1 242)**
Financial income and expenses	–	2	5
(Loss)/profit before tax	**(1)**	**120**	**(1 237)**
Income tax expense[2]	(3)	–	(310)
(Loss)/profit for the year, ordinary activities	**(4)**	**120**	**(1 547)**
Gain on the Sale of the HERE Business, net of tax[3]	7	1 178	–
Profit/(loss) for the year	**3**	**1 298**	**(1 547)**
Costs and expenses include:			
Depreciation and amortization	–	(33)	(57)
Impairment charges	–	–	(1 209)

(1) In 2014, includes impairment of goodwill of EUR 1 209 million.
(2) Excludes the tax impact of the disposal.
(3) Represents net gain on disposal. In 2016, includes EUR 7 million recognized as a result of the final settlement of the purchase price.

Cash flows from Discontinued operations, HERE business

EURm	2016	2015	2014
Net cash (used in)/from operating activities	(2)	12	106
Net cash (used in)/from investing activities	(25)	2 503	(104)
Net cash flow for the year	**(27)**	**2 515**	**2**

Sale of the D&S Business
In September 2013, the Group announced the Sale of the D&S Business to Microsoft. Subsequent to the approval of the sale in the Extraordinary General Meeting in November 2013, the Group has presented the Devices & Services business as Discontinued operations including items outside the final transaction scope; specifically, discontinued manufacturing facilities located in Chennai, India and Masan, Republic of Korea. The Devices & Services business consisted of two previously reportable segments, Smart Devices and Mobile Phones as well as Devices & Services Other. Smart Devices focused on more advanced products, including smartphones powered by the Windows Phone operating system. Mobile Phones focused on the area of mass market entry, feature phones and affordable smartphones. Devices & Services Other included spare parts, the divested Vertu business and major restructuring programs related to the Devices & Services business.

The Sale of the D&S Business was completed on April 25, 2014. The total purchase price was EUR 5 440 million comprising the Sale of the D&S Business and a ten-year non-exclusive license to patents and patent applications with an option to extend the mutual patent agreement in perpetuity. The value allocated to the Sale of the D&S Business was EUR 3 790 million and the fair value of the mutual patent agreement and the future option was EUR 1 650 million. The gain on disposal was EUR 3 175 million. The gain may change in subsequent periods depending on the development of certain liabilities for which the Group has indemnified Microsoft.

Gain on the Sale of the D&S Business

	EURm
Fair value of sales proceeds less costs to sell[1]	5 167
Net assets disposed of	(2 347)
Settlement of Windows Phone royalty[2]	383
Other	(28)
Total	**3 175**
Foreign exchange differences reclassified from other comprehensive income	(212)
Gain before tax	**2 963**
Income tax expense[3]	(160)
Total gain	**2 803**

(1) Comprises purchase price of EUR 3 790 million, net cash adjustment of EUR 1 114 and other adjustments of EUR 263 million.
(2) Recognized when the partnership with Microsoft to license the Windows Phone smartphone platform was terminated in conjunction with the Sale of the D&S Business.
(3) Primarily includes non-resident capital gains taxes in certain jurisdictions, as well as tax impacts of legal entity restructuring carried out in connection with the Sale of the D&S Business.

Notes to consolidated financial statements continued

Assets and liabilities, Devices & Services business
Assets and liabilities disposed of at April 25, 2014:

EURm	April 25, 2014
Goodwill and other intangible assets	1 427
Property, plant and equipment	534
Deferred tax assets and non-current assets	371
Inventories	374
Trade and other receivables	541
Prepaid expenses and other current assets	1 638
Cash and cash equivalents and current available-for-sale investments, liquid assets	1 114
Total assets	**5 999**
Deferred tax liabilities and other liabilities	203
Trade and other payables	1 340
Deferred income and accrued expenses	1 205
Provisions	795
Total liabilities	**3 543**
Non-controlling interests	109
Net assets disposed of	**2 347**

Results of Discontinued operations, Devices & Services business

EURm	2016	2015	2014
Net sales	–	–	2 458
Cost of sales	–	(1)	(2 086)
Gross (loss)/profit	**–**	**(1)**	**372**
Research and development expenses	–	–	(354)
Selling, general and administrative expenses	(10)	(15)	(447)
Other income and expenses	(4)	(5)	(107)
Operating loss	**(14)**	**(21)**	**(536)**
Financial income and expenses	14	(11)	5
Loss before tax	**–**	**(32)**	**(531)**
Income tax (expense)/benefit(1)	(25)	8	33
Loss for the year, ordinary activities	**(25)**	**(24)**	**(498)**
Gain on the Sale of the D&S Business, net of tax(2)	7	–	2 803
(Loss)/profit for the year	**(18)**	**(24)**	**2 305**
Costs and expenses include:			
Impairment charges	–	–	(111)

(1) Excludes the tax impact of the disposal.
(2) Represents net gain on disposal. In 2016, includes EUR 7 million recognized due to a tax indemnification.

Cash flows from Discontinued operations, Devices & Services business

EURm	2016	2015	2014
Net cash used in operating activities	(8)	(6)	(1 054)
Net cash from investing activities	28	50	2 480
Net cash used in financing activities	–	–	(9)
Net cash flow for the year	**20**	**44**	**1 417**

On April 25, 2014, upon completion of the Sale of the D&S Business, EUR 500 million 1.125% convertible bonds due September 2018, EUR 500 million 2.5% convertible bonds due September 2019 and EUR 500 million 3.625% convertible bonds due September 2020, all issued by the Group to Microsoft, were repaid and netted against the deal proceeds by the amount of principal and accrued interest.

7. Revenue recognition

EURm	2016	2015	2014
Continuing operations			
Revenue from sale of products and licensing	14 526	7 045	6 448
Revenue from services(1)	8 156	5 395	4 961
Contract revenue recognized under percentage of completion accounting(2)	931	59	353
Total	**23 614**	**12 499**	**11 762**

(1) Excludes services performed as part of contracts under percentage of completion accounting.
(2) In 2016, contract revenue includes submarine projects, which account for the majority of the revenue.

Revenue recognition-related positions for construction contracts in progress as of December 31:

	2016		2015	
EURm	Assets	Liabilities	Assets	Liabilities
Contract revenues recorded prior to billings	11		16	
Billings in excess of costs incurred		164		29
Work in progress on construction contracts	57		–	
Advances received		113		–
Retentions	1		2	

Work in progress is included in inventories, other assets are included in accounts receivable, and liabilities are included in accrued expenses in the consolidated statement of financial position.

The aggregate amount of costs incurred and profits recognized, net of recognized losses, for construction contracts in progress since inception are EUR 970 million as of December 31, 2016 (EUR 670 million in 2015). For construction contracts acquired in 2016, the amount includes costs incurred and profits recognized from the acquisition date.

8. Expenses by nature

EURm	2016	2015	2014
Continuing operations			
Personnel expenses (Note 9)	7 814	3 738	3 381
Cost of material	7 260	2 907	2 957
Depreciation and amortization (Notes 14, 15)	1 594	286	240
Rental expenses	344	164	154
Other	7 818	3 943	3 734
Total operating expenses	**24 830**	**11 038**	**10 466**

Operating expenses include government grant income and R&D tax credits of EUR 126 million (EUR 20 million in 2015 and EUR 17 million in 2014) that have been recognized in the consolidated income statement as a deduction against research and development expenses.

Notes to consolidated financial statements continued

9. Personnel expenses

EURm	2016	2015	2014
Continuing operations			
Salaries and wages	6 275	3 075	2 797
Share-based payment expense(1)	130	67	53
Pension and other post-employment benefit expense, net(2)	458	223	189
Other social expenses	951	373	342
Total	**7 814**	**3 738**	**3 381**

(1) Includes EUR 119 million for equity-settled awards (EUR 43 million in 2015 and EUR 14 million in 2014).
(2) Includes costs related to defined contribution plans of EUR 236 million (EUR 172 million in 2015 and EUR 144 million in 2014) and costs related to defined benefit plans of EUR 222 million (EUR 51 million in 2015 and EUR 45 million in 2014). Refer to Note 27, Pensions and other post-employment benefits.

The average number of employees is 102 687 (56 690 in 2015 and 51 499 in 2014).

10. Other income and expenses

EURm	2016	2015	2014
Continuing operations			
Other income			
Interest income from customer receivables and overdue payments	29	6	23
VAT and other indirect tax refunds and social security credits	19	17	7
Realized gains from unlisted venture funds	13	144	18
Subsidies and government grants	11	4	15
Profit on sale of property, plant and equipment	–	8	15
Other	44	57	40
Total	**116**	**236**	**118**
Other expenses			
Restructuring, cost reduction and associated charges	(759)	(120)	(61)
Valuation allowances for doubtful accounts and accounts receivable write-offs	(116)	24	5
Expenses related to sale of receivables transactions	(42)	(21)	(39)
Foreign exchange loss on hedging forecasted sales and purchases	(26)	(22)	(15)
Impairment charges	(17)	(11)	(13)
Losses and expenses related to unlisted venture funds	(4)	(47)	–
Loss on sale of property, plant and equipment	(3)	(5)	(12)
VAT and other indirect tax write-offs and provisions	1	(3)	(15)
Contractual remediation costs	–	5	(31)
Other	17	(23)	(48)
Total	**(949)**	**(223)**	**(229)**

11. Financial income and expenses

EURm	2016	2015	2014
Continuing operations			
Interest income on investments and loans receivable	84	31	50
Net interest expense on derivatives not under hedge accounting	(18)	(4)	(4)
Interest expense on financial liabilities carried at amortized cost(1)	(234)	(135)	(387)
Net interest expense on defined benefit pensions (Note 27)	(65)	(9)	(2)
Net realized gains on disposal of fixed income available-for-sale financial investments	15	2	1
Net fair value (losses)/gains on investments at fair value through profit and loss	(18)	(2)	20
Net gains/(losses) on other derivatives designated at fair value through profit and loss	21	(5)	(20)
Net fair value gains/(losses) on hedged items under fair value hedge accounting	11	7	(18)
Net fair value (losses)/gains on hedging instruments under fair value hedge accounting	(15)	(12)	17
Net foreign exchange losses	(9)	(76)	(61)
Other financial income(2)	85	31	15
Other financial expenses(3)	(144)	(14)	(14)
Total	**(287)**	**(186)**	**(403)**

(1) In 2016, interest expense includes one-time charges of EUR 41 million, primarily related to the redemption of Alcatel-Lucent USA Inc. USD 650 million 4.625% notes due July 2017, USD 500 million 8.875% notes due January 2020 and USD 700 million 6.750% notes due November 2020. In 2014, interest expense included a one-time non-cash charge of EUR 57 million relating to the repayment of the EUR 1.5 billion convertible bonds issued to Microsoft when the Sale of the D&S Business was completed and one-time expenses of EUR 123 million relating to the redemption of materially all, then Nokia Networks' borrowings.
(2) Includes distributions of EUR 66 million (EUR 25 million in 2015 and EUR 14 million in 2014) from private venture funds held as non-current available-for-sale investments.
(3) Includes impairments of EUR 108 million (EUR 2 million in 2014) related to private venture funds held as non-current available-for-sale investments. Refer to Note 16, Impairment.

12. Income taxes

Components of the income tax benefit/(expense)

EURm	2016	2015	2014
Continuing operations			
Current tax	(534)	(258)	(300)
Deferred tax	991	(88)	2 019
Total	**457**	**(346)**	**1 719**

Income tax reconciliation

Reconciliation of the difference between income tax computed at the statutory rate in Finland of 20% and income tax recognized in the consolidated income statement:

EURm	2016	2015	2014
Income tax benefit/(expense) at statutory rate	274	(308)	(200)
Permanent differences	31	16	(41)
Tax impact on operating model changes(1)	439	–	–
Non-creditable withholding taxes	(42)	(17)	(31)
Income taxes for prior years	3	6	(14)
Effect of different tax rates of subsidiaries operating in other jurisdictions	88	(50)	(47)
Effect of deferred tax assets not recognized(2)	(318)	(35)	(26)
Benefit arising from previously unrecognized deferred tax assets(3)	19	38	2 081
Net (increase)/decrease in uncertain tax positions	(20)	4	–
Change in income tax rates	3	–	(1)
Income taxes on undistributed earnings	(23)	(7)	–
Other	3	7	(2)
Total	**457**	**(346)**	**1 719**

(1) In 2016, following the completion of the Squeeze-Out of the remaining Alcatel Lucent Securities, the Group launched actions to integrate the former Alcatel Lucent and Nokia operating models. In connection with these integration activities, the Group transferred certain intellectual property to its operations in the United States, recording a tax benefit and additional deferred tax assets of EUR 348 million. In addition, the Group elected to treat the Acquisition of Alcatel Lucent's operations in the United States as an asset purchase for United States tax purposes. The impact of this election was to utilize or forfeit existing deferred tax assets and record new deferred tax assets with a longer amortization period than the life of those forfeited assets. As a result of this, EUR 91 million additional deferred tax assets were recorded in 2016.
(2) In 2016, relates primarily to tax losses and temporary differences in France.
(3) In 2014, relates primarily to tax losses, unused tax credits and temporary differences in Finland for which a deferred tax asset was re-recognized.

Income tax liabilities and assets include a net EUR 495 million liability (EUR 394 million in 2015) relating to uncertain tax positions with inherently uncertain timing of cash outflows.

Prior period income tax returns for certain Group companies are under examination by local tax authorities. The Group has on-going tax audits in various jurisdictions, including India, Germany, Finland and Canada. The Group's business and investments, especially in emerging market countries, may be subject to uncertainties, including unfavorable or unpredictable tax treatment. Management judgment and a degree of estimation are required in determining the tax expense or benefit. Even though management does not expect that any significant additional taxes in excess of those already provided for will arise as a result of these examinations, the outcome or actual cost of settlement may vary materially from estimates.

In 2013, the tax authorities in India commenced an investigation into withholding tax in respect of payments by Nokia India Private Limited to Nokia Corporation for the supply of operating software. Subsequently, the authorities extended the investigation to other related tax consequences and issued orders and made certain assessments. The Group has denied all such allegations and continues defending itself in various Indian litigation proceedings, under both Indian and international law, while extending its full cooperation to the authorities.

Through the Acquisition of Alcatel Lucent, the Group has an on-going tax audit in Germany relating to the disposal of former Alcatel Lucent railway signaling business in 2006 to Thales. In the tax audit report issued in 2012, the tax authorities have claimed EUR 140 million before interest and penalties (being EUR 202 million including interest and penalties as of December 31, 2016). The case is pending with the tax court of Baden-Wuerttemberg in Stuttgart, Germany. The Group has not recognized a liability for this on-going tax audit as it is considered more likely than not that the Group will not have to pay these taxes.

Deferred tax assets and liabilities

	2016			2015		
EURm	Deferred tax assets	Deferred tax liabilities	Net balance	Deferred tax assets	Deferred tax liabilities	Net balance
Tax losses carried forward and unused tax credits	1 428	–		916	–	
Undistributed earnings	–	(67)		–	(15)	
Intangible assets and property, plant and equipment	3 713	(501)		1 321	(154)	
Defined benefit pension assets	3	(1 334)		1	(9)	
Other non-current assets	19	(52)		4	(12)	
Inventories	154	(3)		85	(6)	
Other current assets	81	(66)		43	(41)	
Defined benefit pension and other post-retirement liabilities	1 478	(29)		154	(3)	
Other non-current liabilities	12	(2)		1	(2)	
Provisions	249	(6)		106	(3)	
Other current liabilities	307	(56)		191	(33)	
Other temporary differences	16	(46)		29	–	
Total before netting	**7 460**	**(2 162)**	**5 298**	**2 851**	**(278)**	**2 573**
Netting of deferred tax assets and liabilities	(1 759)	1 759	–	(217)	217	–
Total after netting(1)	**5 701**	**(403)**	**5 298**	**2 634**	**(61)**	**2 573**

(1) The increase, especially in deferred tax assets and liabilities relating to intangible assets and property, plant and equipment; and defined benefit pension assets and defined benefit pension and other post-retirement liabilities, is primarily due to the Acquisition of Alcatel Lucent.

Movements in the net deferred tax balance during the year:

EURm	2016	2015
As of January 1	2 573	2 688
Recognized in income statement, Continuing operations	991	(88)
Recognized in income statement, Discontinued operations	(2)	147
Recognized in other comprehensive income	(255)	(114)
Recognized in equity	(5)	5
Acquisitions through business combinations and disposals	1 914	(74)
Translation differences	82	9
As of December 31	**5 298**	**2 573**

Amount of temporary differences, tax losses carried forward and tax credits for which no deferred tax asset was recognized due to uncertainty of utilization:

EURm	2016	2015
Temporary differences	2 214	334
Tax losses carried forward	18 706	1 488
Tax credits	32	21
Total(1)	**20 952**	**1 843**

(1) In 2016, the increase is primarily due to the Acquisition of Alcatel Lucent.

The majority of the unrecognized temporary differences and tax losses relate to France. Based on the pattern of losses in the past years and in the absence of convincing other evidence of sufficient taxable profit in the future years, it is uncertain whether these deferred tax assets can be utilized in the foreseeable future. A significant portion of the French unrecognized deferred tax assets are indefinite in nature and available against future French tax liabilities, subject to a limitation of 50% of annual taxable profits.

The recognition of the remaining deferred tax assets is supported by offsetting deferred tax liabilities, earnings history and profit projections in the relevant jurisdictions. As of December 31, 2016 the majority of recognized net deferred tax assets relate to unused tax losses, tax credits and deductible temporary differences in the United States of EUR 2.5 billion (EUR 0.1 billion in 2015) and Finland of EUR 2.2 billion (EUR 2.0 billion in 2015). Based on the recent years' profitability in the United States and Finland, as well as the latest forecasts of future financial performance, the Group has been able to establish a pattern of sufficient tax profitability in the United States and Finland to conclude that it is probable that it will be able to utilize the tax losses, tax credits and deductible temporary differences in the foreseeable future. In 2016, the Group incurred an accounting loss in Finland due to significant integration and restructuring costs following the Acquisition of Alcatel Lucent, which may delay the utilization of these tax attributes in Finland.

Expiry of tax losses carried forward and unused tax credits:

	2016			2015		
EURm	Recognized	Unrecognized	Total	Recognized	Unrecognized	Total
Tax losses carried forward						
Within 10 years	1 853	1 681	3 534	1 742	1 171	2 913
Thereafter	79	17	96	174	–	174
No expiry	1 878	17 008	18 886	280	317	597
Total	**3 810**	**18 706**	**22 516**	**2 196**	**1 488**	**3 684**
Tax credits						
Within 10 years	395	23	418	434	14	448
Thereafter	94	–	94	42	–	42
No expiry	66	9	75	–	7	7
Total	**555**	**32**	**587**	**476**	**21**	**497**

The Group has undistributed earnings of EUR 1 074 million (EUR 769 million in 2015) for which a deferred tax liability has not been recognized as these earnings will not be distributed in the foreseeable future.

13. Earnings per share

	2016 EURm	2015 EURm	2014 EURm
Basic			
(Loss)/profit for the year attributable to equity holders of the parent			
Continuing operations	(751)	1 192	2 710
Discontinued operations	(15)	1 274	752
Total	(766)	2 466	3 462
Diluted			
Effect of profit adjustments			
Profit adjustment relating to Alcatel Lucent American Depositary Shares	(8)	–	–
Elimination of interest expense, net of tax, on convertible bonds, where dilutive	–	36	60
Total effect of profit adjustments	(8)	36	60
(Loss)/profit attributable to equity holders of the parent adjusted for the effect of dilution			
Continuing operations	(759)	1 228	2 770
Discontinued operations	(15)	1 274	752
Total	(774)	2 502	3 522

	000s shares	000s shares	000s shares
Basic			
Weighted average number of shares in issue	5 732 371	3 670 934	3 698 723
Diluted			
Effect of dilutive shares			
Effect of dilutive equity-based share incentive programs			
Restricted shares and other	–	4 253	14 419
Performance shares	–	3 179	1 327
Stock options	–	1 971	3 351
Total effect of dilutive equity-based share incentive programs	–	9 403	19 097
Effect of other dilutive shares			
Alcatel Lucent American Depositary Shares	8 746	–	–
Assumed conversion of convertible bonds	–	268 975	413 782
Total effect of other dilutive shares	8 746	268 975	413 782
Total effect of dilutive shares	8 746	278 378	432 879
Adjusted weighted average number of shares	5 741 117	3 949 312	4 131 602

Earnings per share attributable to equity holders of the parent	EUR	EUR	EUR
Basic earnings per share			
Continuing operations	(0.13)	0.32	0.73
Discontinued operations	0.00	0.35	0.20
(Loss)/profit for the year	(0.13)	0.67	0.94
Diluted earnings per share			
Continuing operations	(0.13)	0.31	0.67
Discontinued operations	0.00	0.32	0.18
(Loss)/profit for the year	(0.13)	0.63	0.85

Basic earnings per share is calculated by dividing the profit/loss attributable to equity holders of the parent by the weighted average number of shares outstanding during the year, excluding treasury shares. Diluted earnings per share is calculated by adjusting the profit/loss attributable to equity holders of the parent to eliminate the interest expense of dilutive convertible bonds and other equity instruments; and by adjusting the weighted average number of shares outstanding with the dilutive effect of stock options, restricted shares and performance shares outstanding during the period as well as the assumed conversion of convertible bonds and other equity instruments.

5 million restricted shares are outstanding (none in 2015 and 2014) that could potentially have a dilutive impact in the future but are excluded from the calculation as they are determined to be anti-dilutive.

10 million performance shares are outstanding (none in 2015 and 2014) that could potentially have a dilutive impact in the future but are excluded from the calculation as they are determined to be anti-dilutive. In addition, 4 million performance shares (4 million in 2015 and fewer than 1 million in 2014) have been excluded from the calculation of diluted shares as contingency conditions have not been met.

Stock options equivalent to fewer than 1 million shares (fewer than 1 million shares in 2015 and 2 million in 2014) have been excluded from the calculation of diluted shares as they are determined to be anti-dilutive.

In 2014, convertible bonds issued to Microsoft in September 2013 were fully redeemed as a result of the closing of the Sale of the D&S Business. 116 million potential shares were included in the calculation of diluted shares to reflect the part-year effect of these convertible bonds.

In 2015, the Group exercised its option to redeem the EUR 750 million convertible bonds at their original amount plus accrued interest. Virtually all bondholders elected to convert their convertible bonds into Nokia shares before redemption. 269 million potential shares have been included in the calculation of diluted shares to reflect the part-year effect of these convertible bonds. In 2014, the conversion price was increased and 298 million potential shares were included in the calculation of diluted shares as they were determined to be dilutive. Voluntary conversion of the entire bond would have resulted in the issue of 307 million shares in 2014.

On May 9, 2016, the Group acquired 107 775 949 Alcatel Lucent shares from JPMorgan Chase Bank N.A., as depositary, pursuant to the share purchase agreement announced on March 17, 2016. These shares represent Alcatel Lucent shares that remained in the Alcatel Lucent American Depositary Receipts program after the cancellation period and following the program's termination on April 25, 2016. On May 10, 2016 the Group registered with the Finnish Trade Register 59 276 772 new Nokia shares issued to the Alcatel depositary in settlement of the transaction. 9 million potential shares have been included in the calculation of diluted shares from March 16, 2016 to reflect the part-year effect of these shares, and were included in the calculation as dilutive shares until the registration date.

14. Intangible assets

EURm	Goodwill	Other	Total
Acquisition cost as of January 1, 2015	5 770	5 646	11 416
Translation differences	350	382	732
Additions	–	26	26
Acquisitions through business combinations	7	56	63
Disposals and retirements(1)	(4 982)	(2 973)	(7 955)
Acquisition cost as of December 31, 2015	**1 145**	**3 137**	**4 282**
Accumulated amortization and impairment charges as of January 1, 2015	(3 207)	(5 296)	(8 503)
Translation differences	–	(350)	(350)
Disposals and retirements(1)	2 299	2 934	5 233
Amortization	–	(102)	(102)
Accumulated amortization and impairment charges as of December 31, 2015	**(908)**	**(2 814)**	**(3 722)**
Net book value as of January 1, 2015	2 563	350	2 913
Net book value as of December 31, 2015	**237**	**323**	**560**
Acquisition cost as of January 1, 2016	1 145	3 137	4 282
Translation differences	129	424	553
Additions	–	62	62
Acquisitions through business combinations	5 358	5 781	11 139
Disposals and retirements(2)	–	(22)	(22)
Acquisition cost as of December 31, 2016	**6 632**	**9 382**	**16 014**
Accumulated amortization and impairment charges as of January 1, 2016	(908)	(2 814)	(3 722)
Translation differences	–	(325)	(325)
Disposals and retirements(2)	–	9	9
Amortization	–	(1 016)	(1 016)
Accumulated amortization and impairment charges as of December 31, 2016	**(908)**	**(4 146)**	**(5 054)**
Net book value as of January 1, 2016	237	323	560
Net book value as of December 31, 2016	**5 724**	**5 236**	**10 960**

(1) Included goodwill with acquisition cost of EUR 4 982 million and accumulated impairment of EUR 2 299 million and other intangible assets with acquisition cost of EUR 2 892 million and accumulated amortization of EUR 2 853 million disposed as part of the Sale of the HERE Business.
(2) Includes impairment charges of EUR 9 million. Refer to Note 16, Impairment.

Net book value of other intangible assets by type of asset:

EURm	2016	2015
Customer relationships	2 765	132
Technologies	1 786	126
Tradenames and trademarks	308	9
Other	377	56
Total	**5 236**	**323**

The remaining amortization periods are approximately one to nine years for customer relationships, one to seven years for developed technology and five to seven years for tradenames and trademarks.

15. Property, plant and equipment

EURm	Buildings and constructions	Machinery and equipment	Other	Assets under construction	Total
Acquisition cost as of January 1, 2015	438	1 854	41	19	2 352
Translation differences	32	134	1	–	167
Additions	62	186	15	16	279
Acquisitions through business combinations	2	5	–	–	7
Reclassifications	12	4	–	(16)	–
Disposals and retirements[(1)]	(119)	(437)	(16)	(4)	(576)
Acquisition cost as of December 31, 2015	**427**	**1 746**	**41**	**15**	**2 229**
Accumulated depreciation as of January 1, 2015	(180)	(1 434)	(22)	–	(1 636)
Translation differences	(18)	(114)	(1)	–	(133)
Disposals and retirements[(1)]	71	365	16	–	452
Depreciation	(47)	(168)	(2)	–	(217)
Accumulated depreciation as of December 31, 2015	**(174)**	**(1 351)**	**(9)**	**–**	**(1 534)**
Net book value as of January 1, 2015	258	420	19	19	716
Net book value as of December 31, 2015	**253**	**395**	**32**	**15**	**695**
Acquisition cost as of January 1, 2016	427	1 746	41	15	2 229
Transfers to assets held for sale	(47)	–	–	–	(47)
Translation differences	1	(15)	2	–	(12)
Additions	65	361	3	87	516
Acquisitions through business combinations	587	674	68	84	1 413
Reclassifications	20	75	2	(97)	–
Disposals and retirements	(54)	(148)	(2)	–	(204)
Acquisition cost as of December 31, 2016	**999**	**2 693**	**114**	**89**	**3 895**
Accumulated depreciation as of January 1, 2016	(174)	(1 351)	(9)	–	(1 534)
Transfers to assets held for sale	5	–	–	–	5
Translation differences	1	13	–	–	14
Disposals and retirements	46	133	–	–	179
Depreciation	(94)	(480)	(4)	–	(578)
Accumulated depreciation as of December 31, 2016	**(216)**	**(1 685)**	**(13)**	**–**	**(1 914)**
Net book value as of January 1, 2016	253	395	32	15	695
Net book value as of December 31, 2016	**783**	**1 008**	**101**	**89**	**1 981**

(1) Included buildings and constructions with acquisition cost of EUR 81 million and accumulated depreciation of EUR 35 million, machinery and equipment with acquisition cost of EUR 305 million and accumulated depreciation of EUR 239 million and assets under construction with acquisition cost of EUR 3 million disposed as part of the Sale of the HERE Business.

In 2014, the tax authorities in India placed a lien which prohibited the Group from transferring the mobile devices-related facility in Chennai to Microsoft as part of the Sale of the D&S Business.

16. Impairment

Goodwill

Following the Acquisition of Alcatel Lucent on January 4, 2016, the Group adopted an operational and reporting structure consisting of two businesses: Nokia's Networks business and Nokia Technologies, and three reportable segments for financial reporting purposes: Ultra Broadband Networks and IP Networks and Applications within Nokia's Networks business, and Nokia Technologies. Based on the current operational and reporting structure, the Group allocated goodwill to the operating segments within Nokia's Networks business and to the Withings cash generating unit within Nokia Technologies corresponding to groups of cash generating units ("group of CGUs") and cash generating unit ("CGU"), respectively. The goodwill allocation reflects the lowest level at which goodwill is monitored for internal management purposes; and is allocated to the group of CGUs or the CGU that is expected to benefit from the synergies of the combination.

Allocation of goodwill

The following table presents the allocation of goodwill to groups of CGUs and the CGU as of the annual impairment testing date October 1, 2016:

EURm	2016	2015
Mobile Networks	2 298	
Fixed Networks	896	
IP/Optical Networks	1 970	
Applications & Analytics	240	
Withings (Nokia Technologies)	141	
Global Services		124
Radio Access Networks (Mobile Broadband)		115

Recoverable amounts

The recoverable amounts of the groups of CGUs and the CGU were based on fair value less costs of disposal that was determined using a level 3 fair value measurement based on a discounted cash flow calculation. The cash flow projections used in calculating the recoverable amounts were based on financial plans approved by management covering an explicit forecast period of five years.

Five additional years of cash flow projections subsequent to the explicit forecast period reflect a gradual progression towards the steady state cash flow projections modeled in the terminal year. The terminal growth rate assumptions reflect long-term average growth rates for the industry and economies in which the groups of CGUs and the CGU operate. The discount rates reflect current assessments of the time value of money and relevant market risk premiums reflecting risks and uncertainties for which the future cash flow estimates have not been adjusted. Other key variables in future cash flow projections include assumptions on estimated sales growth, gross margin and operating margin. All cash flow projections are consistent with external sources of information, wherever possible.

The key assumptions applied in the impairment testing analysis for the groups of CGUs and the CGU:

	2016	2015	2016	2015
Key assumption %	Terminal growth rate		Post-tax discount rate	
Mobile Networks	0.9		9.2	
Fixed Networks	0.9		8.6	
IP/Optical Networks	1.4		8.9	
Applications & Analytics	1.8		9.0	
Withings (Nokia Technologies)	2.1		12.7	
Global Services		1.0		8.7
Radio Access Networks (Mobile Broadband)		1.0		9.2

Sensitivity analysis
The Group allocated a significant proportion of the goodwill arising from the Acquisition of Alcatel Lucent to the IP/Optical Networks group of CGUs, which is comprised mainly of businesses acquired in the acquisition. As a result, the fair value of the IP/Optical Networks group of CGUs corresponds closely to its respective carrying amount.

The results of the impairment testing indicate significant headroom for each group of CGUs and CGU, except for the IP/Optical Networks group of CGUs, where the recoverable amount exceeds its carrying amount by approximately EUR 1 200 million. Taken in isolation, the following changes would cause the recoverable amount of IP/Optical Networks group of CGUs to equal its carrying amount:

- Increase in discount rate from 8.9% to 10.7%.
- Reduction in operational profitability in the terminal year by 40%, which is equal to the decrease in the operating profit of EUR 331 million.

Other non-current assets
Impairment charges by asset category:

EURm	2016	2015	2014
Other intangible assets	9	–	–
Available-for-sale investments	116	11	15
Total	**125**	**11**	**15**

Other intangible assets
The Group recognized an impairment charge of EUR 9 million following the discontinuation of certain technology-related assets acquired with Mesaplexx Pty Ltd. The impairment charge is recorded in other operating expenses.

Available-for-sale investments
The Group recognized an impairment charge of EUR 116 million (EUR 11 million in 2015 and EUR 15 million in 2014) primarily related to the performance of certain private funds investing in IPR that are included in non-current available-for-sale equity investments at cost less impairment. These charges are recorded in other expenses and financial income and expenses.

17. Inventories

EURm	2016	2015
Raw materials, supplies and other	268	102
Work in progress	1 159	404
Finished goods	1 079	508
Total	**2 506**	**1 014**

The cost of inventories recognized as an expense during the year and included in the cost of sales is EUR 7 636 million (EUR 3 132 million in 2015 and EUR 3 156 million in 2014).

Movements in allowances for excess and obsolete inventory for the years ended December 31:

EURm	2016	2015	2014
As of January 1	195	204	178
Charged to income statement	354	71	107
Deductions[1]	(93)	(80)	(81)
As of December 31	**456**	**195**	**204**

(1) Deductions include utilization and releases of allowances.

18. Allowances for doubtful accounts

Movements in allowances for doubtful accounts for the years ended December 31:

EURm	2016	2015	2014
As of January 1	62	103	124
Transfer to Discontinued operations	–	(7)	–
Charged to income statement	126	13	24
Deductions[1]	(20)	(47)	(45)
As of December 31	**168**	**62**	**103**

(1) Deductions include utilization and releases of allowances.

19. Prepaid expenses and accrued income

Non-current assets

EURm	2016	2015
R&D tax credits and other indirect tax receivables	254	–
Other	74	51
Total	**328**	**51**

Current assets

EURm	2016	2015
Social security, R&D tax credits, VAT and other indirect taxes	560	258
Deposits	118	83
Accrued revenue	101	21
Divestment-related receivables	90	160
Other	427	227
Total	**1 296**	**749**

20. Shares of the Parent Company

Shares and share capital

Nokia Corporation ("Parent Company") has one class of shares. Each share entitles the holder to one vote at General Meetings. As of December 31, 2016, the share capital of Nokia Corporation is EUR 245 896 461.96 and the total number of shares issued is 5 836 055 012. As of December 31, 2016, the total number of shares includes 115 551 878 shares owned by Group companies representing 2.0% of share capital and total voting rights. Under the Nokia Articles of Association, Nokia Corporation does not have minimum or maximum share capital or share par value.

Authorizations

Authorization to issue shares and special rights entitling to shares

At the Annual General Meeting held on May 5, 2015, the shareholders authorized the Board of Directors to issue a maximum of 730 million shares through one or more issues of shares or special rights entitling to shares. The Board of Directors was authorized to issue either new shares or shares held by the Parent Company. The authorization included the right for the Board of Directors to resolve on all the terms and conditions of such share and special rights issuances, including issuance in deviation from the shareholders' pre-emptive rights. The authorization may be used to develop the Parent Company's capital structure, diversify the shareholder base, finance or carry out acquisitions or other arrangements, settle the Parent Company's equity-based incentive plans, or for other purposes resolved by the Board of Directors. The authorization that would have been effective until November 5, 2016 was terminated by a resolution of Annual General Meeting on June 16, 2016.

At the Extraordinary General Meeting held on December 2, 2015, the shareholders authorized the Board of Directors to issue, in deviation from the shareholders' pre-emptive right, a maximum of 2 100 million shares through one or more share issues. The authorization includes the right for the Board of Directors to resolve on all the terms and conditions of such share issuances. The authorization may be used to issue Parent Company shares to the holders of Alcatel Lucent shares, American Depositary Shares and convertible bonds as well as to beneficiaries of Alcatel Lucent employee equity compensation arrangements for the purpose of implementing the transaction with Alcatel Lucent, including the consummation of the public exchange offers made to Alcatel Lucent shareholders as well as other transactions contemplated by the memorandum of understanding between the Group and Alcatel Lucent, and/or otherwise to effect the combination. The authorization is effective until December 2, 2020.

In 2016, under the authorization held by the Board of Directors, the Parent Company issued in deviation from the shareholders' pre-emptive right to subscription 1 842 158 031 shares in exchange for the Alcatel Lucent ordinary shares, American Depository Shares and OCEANE convertible bonds to effect the business combination with Alcatel Lucent. The number of shares issued consisted of 1 831 136 063 new shares and 11 021 968 shares held by Group companies. On November 2, 2016 the Group reached 100% ownership of Alcatel Lucent. Refer to Note 5, Acquisitions.

At the Annual General Meeting held on June 16, 2016, the shareholders authorized the Board of Directors to issue a maximum of 1 150 million shares through one or more issues of shares or special rights entitling to shares. The Board of Directors is authorized to issue either new shares or shares held by the Parent Company. The authorization included the right for the Board of Directors to resolve on all the terms and conditions of such share and special rights issuances, including issuance in deviation from the shareholders' pre-emptive rights. The authorization may be used to develop the Parent Company's capital structure, diversify the shareholder base, finance or carry out acquisitions or other arrangements, settle the Parent Company's equity-based incentive plans, or for other purposes resolved by the Board of Directors. The authorization is effective until December 16, 2017.

In 2016, under the authorization held by the Board of Directors, the Parent Company issued 3 408 437 treasury shares to employees, including certain members of the Group Leadership Team, as settlement under equity-based incentive plans. The shares were issued without consideration and in accordance with the Plan rules.

In 2016, the Parent Company issued 1 033 265 new shares following the holders of stock options issued in 2011 and 2012 exercising their option rights.

As of December 31, 2016, the Board of Directors had no other authorizations to issue shares, convertible bonds, warrants or stock options.

Other authorizations

At the Annual General Meeting held on May 5, 2015, the shareholders authorized the Board of Directors to repurchase a maximum of 365 million shares. The amount corresponded to less than 10% of the total number of Parent Company's shares. The shares may be repurchased in order to optimize the capital structure of the Parent Company, in order to finance or carry out acquisitions or other arrangements, to settle the Parent Company's equity-based incentive plans or to be transferred for other purposes. The authorization that would have been effective until November 5, 2016 was terminated by a resolution of the Annual General Meeting on June 16, 2016.

At the Annual General Meeting held on June 16, 2016, the shareholders authorized the Board of Directors to repurchase a maximum of 575 million shares. The amount corresponds to less than 10% of the total number of Parent Company's shares. The shares may be repurchased in order to optimize the capital structure of the Parent Company and are expected to be cancelled. In addition, the shares may be repurchased in order to finance or carry out acquisitions or other arrangements, to settle the Parent Company's equity-based incentive plans or to be transferred for other purposes. The authorization is effective until December 16, 2017.

In 2016, under the authorization held by the Board of Directors and in line with the capital structure optimization program, the Parent Company repurchased 54 296 182 shares representing approximately 0.9% of share capital and total voting rights. The price paid for the shares was based on the current market price of the Nokia share on the securities market at the time of the repurchase.

21. Fair value and other reserves

EURm	Translation differences	Pension remeasurements	Hedging reserve	Available-for-sale investments
As of January 1, 2014	**434**	**(131)**	**30**	**181**
Foreign exchange translation differences	628	–	–	–
Net investment hedging losses	(153)	–	–	–
Remeasurements of defined benefit plans	–	(179)	–	–
Net fair value (losses)/gains	–	–	(10)	117
Transfer to income statement	197	–	(20)	(14)
Disposal of businesses	–	46	2	–
Movement attributable to non-controlling interests	(7)	–	–	–
As of December 31, 2014	**1 099**	**(264)**	**2**	**284**
Foreign exchange translation differences	672	–	–	–
Net investment hedging losses	(207)	–	–	–
Remeasurements of defined benefit plans	–	84	–	–
Net fair value (losses)/gains	–	–	(53)	225
Transfer to income statement	(1 268)	–	49	(131)
Disposal of businesses	–	8	–	–
Movement attributable to non-controlling interests	(4)	–	–	–
As of December 31, 2015	**292**	**(172)**	**(2)**	**378**
Foreign exchange translation differences	265	–	–	–
Net investment hedging losses	(83)	–	–	–
Remeasurements of defined benefit plans	–	343	–	–
Net fair value losses	–	–	(13)	(10)
Transfer to income statement	(14)	–	25	(63)
Acquisition of non-controlling interests	(15)	(2)	–	–
Movement attributable to non-controlling interests	38	4	–	–
As of December 31, 2016	**483**	**173**	**10**	**305**

Translation differences consist of translation differences arising from translation of foreign Group companies' assets and liabilities into euro, the presentation currency of the consolidated financial statements, as well as gains and losses related to hedging of net investments in foreign operations. On disposal of all or a part of a foreign Group company, the cumulative amount of translation differences and related accumulated changes in fair value of qualifying net investment hedges are recognized as income or expense on the consolidated income statement when the gain or loss on disposal is recognized. Refer to Note 2, Significant accounting policies.

The Group has defined benefit plans. Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions for these defined benefit plans are charged or credited to the pension remeasurements reserve. Refer to Note 2, Significant accounting policies and Note 27, Pensions and other post-employment benefits.

The Group applies hedge accounting on certain forward foreign exchange contracts that are designated as cash flow hedges. The change in fair value that reflects the change in spot exchange rates is deferred to the hedging reserve to the extent that the hedge is effective. Refer to Note 2, Significant accounting policies.

The Group invests a portion of cash needed to cover the projected cash needs of its ongoing business operations in highly liquid, interest-bearing investments and certain equity instruments. Changes in the fair value of these available-for-sale investments are recognized in the fair value and other reserves as part of other comprehensive income, with the exception of interest calculated using the effective interest method and foreign exchange gains and losses on current available-for-sale investments recognized directly in the consolidated income statement. Refer to Note 2, Significant accounting policies.

22. Other comprehensive income

	2016			2015			2014		
EURm	Gross	Tax	Net	Gross	Tax	Net	Gross	Tax	Net
Pension remeasurements									
Remeasurements of defined benefit plans	613	(269)	344	112	(28)	84	(275)	96	(179)
Net change during the year	**613**	**(269)**	**344**	**112**	**(28)**	**84**	**(275)**	**96**	**(179)**
Translation differences									
Exchange differences on translating foreign operations	265	–	265	673	–	673	628	–	628
Transfer to income statement	(14)	–	(14)	(1 727)	–	(1 727)	192	–	192
Net change during the year	**251**	**–**	**251**	**(1 054)**	**–**	**(1 054)**	**820**	**–**	**820**
Net investment hedging									
Net investment hedging losses	(103)	20	(83)	(260)	53	(207)	(187)	34	(153)
Transfer to income statement	–	–	–	582	(123)	459	20	(15)	5
Net change during the year	**(103)**	**20**	**(83)**	**322**	**(70)**	**252**	**(167)**	**19**	**(148)**
Cash flow hedges									
Net fair value losses	(16)	3	(13)	(66)	13	(53)	(5)	(5)	(10)
Transfer to income statement	30	(5)	25	61	(12)	49	(25)	5	(20)
Net change during the year	**14**	**(2)**	**12**	**(5)**	**1**	**(4)**	**(30)**	**–**	**(30)**
Available-for-sale investments									
Net fair value (losses)/gains	(9)	(1)	(10)	246	(21)	225	120	(3)	117
Transfer to income statement on impairment	25	(4)	21	11	–	11	15	–	15
Transfer to income statement on disposal	(91)	7	(84)	(144)	2	(142)	(29)	–	(29)
Net change during the year	**(75)**	**2**	**(73)**	**113**	**(19)**	**94**	**106**	**(3)**	**103**
Other (decrease)/increase, net	(6)	–	(6)	2	—	2	40	–	40
Total	**694**	**(249)**	**445**	**(510)**	**(116)**	**(626)**	**494**	**112**	**606**

23. Interest-bearing liabilities

Issuer/borrower	Instrument	Currency	Nominal (million)	Final maturity	Carrying amount EURm 2016	2015
Nokia Corporation	Revolving Credit Facility(1)	EUR	1 579	June 2019	–	–
Nokia Corporation	6.625% Senior Notes	USD	500	May 2039	482	467
Alcatel-Lucent USA Inc.	6.45% Senior Notes	USD	1 360	March 2029	1 306	–
Alcatel-Lucent USA Inc.	6.5% Senior Notes	USD	300	January 2028	287	–
Alcatel Lucent SA	0.125% OCEANE Convertible Bond	EUR	–	January 2020	–	–
Nokia Corporation	5.375% Senior Notes	USD	1 000	May 2019	961	940
Nokia Corporation	6.75% Senior Notes	EUR	500	February 2019	527	539
Alcatel Lucent SA	0% OCEANE Convertible Bond	EUR	–	January 2019	–	–
Nokia Corporation and various subsidiaries	Other liabilities(2)				464	128
Total					**4 027**	**2 074**

(1) In June 2016, the Group exercised its option to increase the size of the EUR 1 500 million revolving credit facility to EUR 1 579 million and to extend the maturity date from June 2018 to June 2019. The facility has a remaining one-year extension option, no financial covenants and remains undrawn.
(2) Includes liabilities related to the French R&D tax credits (Crédits d'Impôt Recherche) of EUR 132 million that have been sold to banks on a recourse basis and hence remain on the consolidated statement of financial position.

Transactions relating to borrowings acquired as part of the Acquisition of Alcatel Lucent
As part of the public exchange offer to acquire Alcatel Lucent 2018 OCEANE, 2019 OCEANE and 2020 OCEANE convertible bonds with nominal amounts of EUR 381 million, EUR 238 million and EUR 293 million respectively, were tendered for exchange into Nokia shares. As a result, less than 15% of the 2018 OCEANE convertible bonds remained outstanding, and the Group caused Alcatel Lucent SA to redeem at par value plus accrued interest, all of the outstanding 2018 OCEANE convertible bonds pursuant to the terms and conditions of the bonds. Subsequently during 2016 the remaining outstanding 2019 OCEANE and 2020 OCEANE convertible bonds with nominal amounts EUR 402 million and EUR 136 million respectively, were either put back, acquired in privately negotiated transactions, or acquired through the Public Buy-Out Offer followed by a Squeeze-Out for an aggregate cash payment of EUR 562 million. Refer to Note 5, Acquisitions.

In January 2016, Alcatel Lucent SA repaid its EUR 190 million 8.50% senior notes. In February, 2016, Alcatel-Lucent USA Inc. redeemed its USD 650 million 4.625% notes due July 2017, USD 500 million 8.875% notes due January 2020 and USD 700 million 6.750% notes due November 2020 in accordance with their respective terms and conditions. In February 2016, Alcatel Lucent SA terminated its EUR 504 million revolving credit facility. In March 2016, the Alcatel-Lucent Submarine Networks' credit facility of EUR 74 million was repaid.

All of the remaining borrowings are senior unsecured and have no financial covenants.

Notes to consolidated financial statements continued

24. Fair value of financial instruments

	Carrying amounts						Fair value(1)
EURm	Current available-for-sale financial assets	Non-current available-for-sale financial assets	Financial instruments at fair value through profit or loss	Loans and receivables measured at amortized cost	Financial liabilities measured at amortized cost	Total	Total
2016							
Available-for-sale investments, carried at fair value		838				838	838
Available-for-sale investments, carried at cost less impairment		202				202	202
Other non-current financial assets			111	143		254	228
Accounts receivable				6 972		6 972	6 972
Other current financial assets			235	61		296	296
Investments at fair value through profit and loss, liquid assets			327			327	327
Available-for-sale investments, liquid assets carried at fair value	1 502					1 502	1 502
Cash and cash equivalents carried at fair value	7 497					7 497	7 497
Total financial assets	**8 999**	**1 040**	**673**	**7 176**	**–**	**17 888**	**17 862**
Long-term interest-bearing liabilities					3 657	3 657	3 821
Short-term interest-bearing liabilities					370	370	370
Other financial liabilities			250		34	284	284
Accounts payable					3 781	3 781	3 781
Total financial liabilities	**–**	**–**	**250**	**–**	**7 842**	**8 092**	**8 256**
2015							
Available-for-sale investments, carried at fair value		703				703	703
Available-for-sale investments, carried at cost less impairment		285				285	285
Other non-current financial assets				49		49	39
Accounts receivable				3 913		3 913	3 913
Other current financial assets			96	32		128	128
Investments at fair value through profit and loss, liquid assets			687			687	687
Available-for-sale investments, publicly quoted equity shares		16				16	16
Available-for-sale investments, liquid assets carried at fair value	2 167					2 167	2 167
Cash and cash equivalents carried at fair value	6 995					6 995	6 995
Total financial assets	**9 162**	**1 004**	**783**	**3 994**	**–**	**14 943**	**14 933**
Long-term interest-bearing liabilities					2 023	2 023	2 100
Short-term interest-bearing liabilities					51	51	51
Other financial liabilities			114		8	122	122
Accounts payable					1 910	1 910	1 910
Total financial liabilities	**–**	**–**	**114**	**–**	**3 992**	**4 106**	**4 183**

(1) The following fair value measurement methods are used for items not carried at fair value: the fair value is estimated to equal the carrying amount for available-for-sale investments carried at cost less impairment for which it is not possible to estimate fair value reliably. These assets are tested for impairment using a discounted cash flow analysis if events or changes in circumstances indicate that the carrying amounts may not be recoverable. The fair values of long-term interest-bearing liabilities are primarily based on quotes from third-party pricing services (level 2). The fair values of other assets and liabilities, including loans receivable and loans payable are primarily based on discounted cash flow analysis (level 2). The fair value is estimated to equal the carrying amount for short-term financial assets and financial liabilities due to limited credit risk and short time to maturity. Refer to Note 2, Significant accounting policies.

Fair value hierarchy

Financial assets and liabilities recorded at fair value are categorized based on the amount of unobservable inputs used to measure their fair value. Three hierarchical levels are based on an increasing amount of judgment associated with the inputs used to derive fair valuation for these assets and liabilities, level 1 being market values for exchange traded products, level 2 being primarily based on quotes from third-party pricing services, and level 3 requiring most management judgment. At the end of each reporting period, the Group categorizes its financial assets and liabilities to appropriate level of fair value hierarchy.

Items measured at fair value on a recurring basis as of December 31:

EURm	Instruments with quoted prices in active markets (level 1)	Valuation technique using observable data (level 2)	Valuation technique using non-observable data (level 3)	Total
2016				
Available-for-sale investments, carried at fair value	–	164	674	838
Other current financial assets, derivatives(1)	–	235	–	235
Investments at fair value through profit and loss	–	438	–	438
Available-for-sale investments, liquid assets carried at fair value	–	1 502	–	1 502
Total assets	**–**	**2 339**	**674**	**3 013**
Other financial liabilities, derivatives(1)	–	236	14	250
Total liabilities	**–**	**236**	**14**	**250**
2015				
Available-for-sale investments, carried at fair value	–	15	688	703
Other current financial assets, derivatives(1)	–	96	–	96
Investments at fair value through profit and loss	–	687	–	687
Available-for-sale investments, publicly quoted equity shares	16	–	–	16
Available-for-sale investments, liquid assets carried at fair value	–	2 167	–	2 167
Total assets	**16**	**2 965**	**688**	**3 669**
Other financial liabilities, derivatives(1)	–	114	–	114
Total liabilities	**–**	**114**	**–**	**114**

(1) Refer to Note 25, Derivative financial instruments for the allocation between hedge accounted and non-hedge accounted derivatives.

The level 1 category includes financial assets and liabilities that are measured in whole by reference to published quotes in an active market. A financial instrument is regarded as quoted in an active market if quoted prices are readily and regularly available from an exchange, and those prices represent actual and regularly occurring market transactions on an arm's-length basis. This category includes only exchange traded products. Comparative presentation has been updated accordingly.

The level 2 category includes financial assets and liabilities measured using a valuation technique based on assumptions that are supported by prices from observable current market transactions. These include assets and liabilities with fair values based on quotes from third-party pricing services, financial assets with fair values based on broker quotes and assets that are valued using the Group's own valuation models whereby the material assumptions are market observable. The majority of listed bonds and other securities, over-the-counter derivatives and certain other products are included in this category.

The level 3 category includes a large number of investments in unlisted equities and unlisted venture funds, including investments managed by Nokia Growth Partners specializing in growth-stage investing and by BlueRun Ventures focusing on early-stage opportunities. The level 3 fair value is determined using one or more valuation techniques where the use of the market approach generally consists of using comparable market transactions, while the use of the income approach generally consists of calculating the net present value of expected future cash flows. For unlisted funds, the selection of appropriate valuation techniques by the fund managing partner may be affected by the availability and reliability of relevant inputs. In some cases one valuation technique may provide the best indication of fair value while in other circumstances multiple valuation techniques may be appropriate.

The inputs generally considered in determining the fair value include the original transaction price, recent transactions in the same or similar instruments, completed or pending third-party transactions in the underlying investment or comparable issuers, subsequent rounds of financing, recapitalizations or other transactions undertaken by the issuer, offerings in the equity or debt capital markets, and changes in financial ratios or cash flows, adjusted as appropriate for liquidity, credit, market and/or other risk factors. The level 3 investments are valued on a quarterly basis taking into consideration any changes, projections and assumptions, as well as any changes in economic and other relevant conditions. The fair value may be adjusted to reflect illiquidity and/or non-transferability, with the amount of such discount estimated by the managing partner in the absence of market information. Assumptions used by the managing partner due to the lack of observable inputs may impact the resulting fair value of individual investments, although no individual input has a significant impact on the total fair value of the level 3 investments.

Reconciliation of the opening and closing balances on level 3 financial assets and liabilities:

EURm	Level 3 financial assets and liabilities
As of January 1, 2015	**556**
Net gain in income statement	96
Net gain in other comprehensive income	83
Purchases	70
Sales	(146)
Other	29
As of December 31, 2015	**688**
Net gains in income statement	52
Net loss recorded in other comprehensive income	(48)
Acquisitions through business combination	(14)
Purchases	72
Sales	(101)
Other	11
As of December 31, 2016	**660**

The gains and losses from financial assets and liabilities categorized in level 3 are included in other operating income and expenses in cases where the investment and disposal objectives for these investments are business-driven. In other cases, the gains and losses are included in financial income and expenses.

25. Derivative financial instruments

EURm	Assets		Liabilities	
	Fair value(1)	Notional(2)	Fair value(1)	Notional(2)
2016				
Hedges on net investment in foreign subsidiaries				
Forward foreign exchange contracts	20	1 829	(1)	255
Cash flow hedges				
Forward foreign exchange contracts	12	382	(9)	185
Fair value hedges				
Interest rate swaps	42	300	–	–
Forward foreign exchange contracts	21	350	(51)	689
Firm commitments	34	633	(6)	311
Cash flow and fair value hedges(3)				
Cross-currency interest rate swaps	42	1 002	–	–
Derivatives not designated in hedge accounting relationships carried at fair value through profit and loss				
Forward foreign exchange contracts	61	3 777	(135)	7 526
Currency options bought	3	569	–	–
Interest rate swaps	–	–	(29)	329
Other derivatives	–	–	(5)	157
Total	**235**	**8 842**	**(236)**	**9 452**
2015				
Hedges on net investment in foreign subsidiaries				
Forward foreign exchange contracts	2	223	(5)	464
Currency options bought	–	106	–	–
Currency options sold	–	–	–	114
Cash flow hedges				
Forward foreign exchange contracts	4	844	(19)	880
Fair value hedges				
Interest rate swaps	52	301	–	–
Cash flow and fair value hedges(3)				
Cross-currency interest rate swaps	17	355	(5)	646
Derivatives not designated in hedge accounting relationships carried at fair value through profit and loss				
Forward foreign exchange contracts	17	2 117	(31)	2 296
Currency options bought	4	350	–	–
Currency options sold	–	–	–	48
Interest rate swaps	–	–	(50)	646
Other derivatives	–	–	(4)	37
Total	**96**	**4 296**	**(114)**	**5 131**

(1) Included in other financial assets and other financial liabilities in the consolidated statement of financial position.
(2) Includes the gross amount of all notional values for contracts that have not yet been settled or cancelled. The amount of notional value outstanding is not necessarily a measure or indication of market risk as the exposure of certain contracts may be offset by that of other contracts.
(3) Cross-currency interest rate swaps have been designated partly as fair value hedges and partly as cash flow hedges.

26. Share-based payment

The Group has several equity-based incentive programs for employees. The programs consist of performance share plans, restricted share plans and employee share purchase plans. New stock option plans are no longer granted, although the 2011 stock option plan remains in force. Both executives and other eligible employees participate in these programs. The equity-based incentive grants are generally conditional on continued employment as well as the fulfillment of the performance, service and other conditions determined in the relevant plan rules. The share-based payment expense for all equity-based incentive grants for Continuing operations amounts to EUR 130 million (EUR 67 million in 2015 and EUR 53 million in 2014).

Performance shares

In 2016, the Group administered four global performance share plans, the Performance Share Plans of 2013, 2014, 2015 and 2016. The performance shares represent a commitment by the Group to deliver Nokia shares to employees at a future point in time, subject to the fulfillment of predetermined performance criteria. In the Performance Share Plan of 2016, performance shares were granted with pre-defined performance criteria and included a minimum payout guarantee. As a result of the minimum payout defined in the terms and conditions of the 2016 Plan, the number of shares to be settled following the restriction period will start at 25% of the granted amount at target. The number of performance shares at target is the amount of performance shares granted to an individual that will be settled if the target performance with respect to performance criteria is achieved. Any additional payout beyond the minimum amount will be determined based on the financial performance against the established performance criteria during the two-year performance period. At maximum performance, the settlement amounts to two times the amount at target.

Global performance share plans as of December 31:

Plan	Performance shares outstanding at target	Confirmed payout (% of target)	Performance period	Restriction period[1]	Settlement year
2013	–	86	2013–2014	2015	2016
2014	10 247 152	126	2014–2015	2016	2017
2015	10 818 660	124	2015–2016	2017	2018
2016	22 351 738		2016–2017	2018	2019

(1) The restriction period will be no less than one year from the end of the performance period.

Performance criteria for the year ended December 31:

Performance criteria		Threshold performance EUR	Maximum performance EUR	Weight %
2016 Plan	Average annual net sales[1] 2016-2017	24 097 million	27 724 million	50
	Average annual diluted[1] EPS 2016-2017	0.23	0.34	50
2015 Plan[2]	Annual net sales[1] in 2015	11 892 million	14 144 million	25
	Annual net sales[1] in 2016	23 421 million	27 852 million	25
	Average annual diluted[1] EPS 2015-2016	0.18	0.29	50

(1) Excludes costs related to the Acquisition of Alcatel Lucent and related integration, goodwill impairment charges, intangible asset amortization and other purchase price fair value adjustments, restructuring and associated charges and certain other items.
(2) The performance criteria of the Performance Share Plan 2015 were modified in 2016 to reflect the new structure and size of the Group following the Sale of the HERE Business and the Acquisition of Alcatel Lucent. The net sales metric is weighted equally each year, instead of calculating an average over the two-year performance period due to significant difference between the metrics for Nokia in 2015 and the new combined company in 2016.

Until the Nokia shares are delivered, the participants do not have any shareholder rights, such as voting or dividend rights, associated with the performance shares. The performance share grants are generally forfeited if the employment relationship with the Group terminates prior to vesting.

Restricted shares

In 2016, the Group administered four global restricted share plans: the Restricted Share Plan 2013, 2014, 2015 and 2016. The vesting schedule for plans prior to the 2015 Plan was 36 months following the grant quarter. The vesting schedule for the 2015 and 2016 Plans introduce tranche vesting and vest in three equal tranches on the first, second and the third anniversary of the award subject to continued employment with the Group. Restricted shares are granted on a limited basis for exceptional purposes related to retention and recruitment of individuals deemed critical to the Group's future success. Until the Nokia shares are delivered, the participants do not have any shareholder rights, such as voting or dividend rights, associated with the restricted shares. The restricted share grants are generally forfeited if the employment relationship with the Group terminates prior to vesting of the applicable tranche or tranches.

Active share-based payment plans by instrument

	Performance shares outstanding at target[1]		Restricted shares outstanding[1]	
	Number of performance shares at target	Weighted average grant date fair value EUR[2]	Number of restricted shares outstanding	Weighted average grant date fair value EUR[2]
As of January 1, 2014	**21 980 408**		**30 356 850**	
Granted	13 934 730	6.07	1 013 466	5.62
Forfeited	(18 676 072)		(19 546 605)	
Vested	(5 000)		(4 228 306)	
As of December 31, 2014	**17 234 066**		**7 595 405**	
Granted	13 553 992	5.78	342 200	6.22
Forfeited	(7 859 208)		(3 880 221)	
Vested	–		(1 952 910)	
As of December 31, 2015	**22 928 850**		**2 104 474**	
Granted	23 110 479	4.70	5 406 682	4.73
Forfeited	(1 489 070)		(255 023)	
Vested	(1 132 709)		(1 286 596)	
As of December 31, 2016[3]	**43 417 550**		**5 969 537**	

(1) Includes performance and restricted shares granted under other than global equity plans.
(2) The fair values of performance and restricted shares are estimated based on the grant date market price of the Nokia share less the present value of dividends expected to be paid during the vesting period.
(3) Includes 10 247 152 performance shares for the Performance Share Plan 2014 and 521 685 Restricted Shares that vested on January 1, 2017.

Employee share purchase plan

The Group offers a voluntary Employee Share Purchase Plan to its employees. Employees make contributions from their salary to purchase Nokia shares on a monthly basis during a 12-month savings period. The Group intends to deliver one matching share for every two purchased shares the employee still holds as of the end of the Plan cycle. In 2016, 1 661 951 matching shares were issued as a settlement to the participants of the Employee Share Purchase Plan 2015 (140 436 matching shares issued in 2015). Additionally in 2016, according to the terms and conditions of the plan, the Group issued 20 free shares to the participants of the Employee Share Purchase Plan, being 601 408 shares in total.

Legacy equity compensation programs

Stock options

In 2016, the Group administered two global stock option plans, the Stock Option Plans 2007 and 2011, approved by the shareholders at the Annual General Meeting in the year when the plan was launched. Stock option plans have not been granted since 2013 as compensation to Group employees. The Stock Option Plan 2007 lapsed on January 1, 2016.

Each stock option entitles the holder to subscribe for one new Nokia share. The stock options are non-transferable and may be exercised for shares only. Shares will be eligible for dividends for the financial year in which the share subscription takes place. Other shareholder rights will commence on the date on which the subscribed shares are entered in the Trade Register. The stock option grants are generally forfeited if the employment relationship with the Group is terminated.

Reconciliation of stock options outstanding and exercisable:

Shares under option[1]	Number of shares	Weighted average exercise price EUR	Weighted average share price EUR	Number of options exercisable	Weighted average exercise price EUR
As of January 1, 2014	**28 000 192**	**4.47**		**4 339 341**	**9.66**
Exercised	(56 623)	5.75	6.69		
Forfeited	(16 839 593)	3.39			
Expired	(3 759 953)	9.94			
As of December 31, 2014	**7 344 023**	**4.81**		**1 913 537**	**10.43**
Exercised	(1 242 381)	3.79	6.44		
Forfeited	(2 215 216)	2.48			
Expired	(246 140)	8.07			
As of December 31, 2015	**3 640 286**	**4.67**		**2 318 911**	**5.97**
Exercised	(832 900)	2.52	4.87		
Forfeited	(17 875)	2.57			
Expired	(1 188 490)	7.81			
As of December 31, 2016	**1 601 021**	**3.34**		**1 197 771**	**3.56**

(1) Includes stock options granted under other than global equity plans, excluding the 2012 Nokia Networks Equity Incentive Plan.

Nokia Networks equity incentive plan

In 2012, the Board of Nokia Siemens Networks established the Nokia Networks Equity Incentive Plan ("the Plan"), a share-based incentive program under which options for Nokia Solutions and Networks B.V. shares were granted to selected key employees and senior management. In 2015, 30% of the options became exercisable and the remaining 70% became exercisable in 2016. The exercise price of the options is based on a per share value on grant as determined for the purposes of the Plan. The options are accounted for as a cash-settled share-based payment liability as of December 31, 2016. The fair value of the liability is determined based on the estimated fair value of shares less the exercise price of the options on the reporting date. The total carrying amount of the Plan is EUR 9 million (EUR 73 million in 2015) and is included in accrued expenses and other liabilities in the consolidated statement of financial position.

Alcatel Lucent equity incentive plan

Following the Acquisition of Alcatel Lucent, plans previously granted to former Alcatel Lucent employees that remained outstanding and exercisable were transferred to the Group with original vesting terms and conditions. Multiple liquidity agreements were offered in limited circumstances as part of the transaction to support the delivery of specific awards at the point of vesting with settlement in Nokia shares. For the primary liquidity arrangement (applied to the 2015 performance share grant), the performance conditions are market-driven and the terms were modified to acknowledge the change from Alcatel Lucent share-related measure to Nokia share measure. All shares granted that are covered under the liquidity agreements are accounted for as replacement plans.

At the time of the Squeeze-Out, the remaining plans were modified to allow for the completion of the Squeeze-Out. Modifications to remaining outstanding share and option grants not already covered by liquidity agreements, included mandatory acceleration of unvested performance shares, and modification of plan terms for outstanding stock options that result in options delivered in cash rather than equity, keeping all other terms of the plan constant. The options are accounted for as a cash-settled share-based payment liability as of December 31, 2016. EUR 8 million was included in the total share-based compensation expense in the consolidated income statement in relation to these legacy Alcatel Lucent plans. The fair value of the liability is determined based on the estimated fair value of shares less the exercise price of the options on the reporting date. The total carrying amount of the liability is EUR 19 million and is included in accrued expenses and other liabilities in the consolidated statement of financial position.

27. Pensions and other post-employment benefits

The Group operates a number of post-employment plans in various countries including both defined contribution and defined benefit plans. Defined benefit plans expose the Group to actuarial risks such as investment risk, interest rate risk, and life expectancy risk. The characteristics and associated risks of the defined benefit plans vary depending on legal, fiscal, and economic requirements in each country. These characteristics and risks are further described below and relate to the plans included in Continuing operations.

The total net defined benefit liability is EUR 1 198 million (EUR 398 million in 2015) consisting of net pension and other post-employment benefit liabilities of EUR 5 000 million (EUR 423 million in 2015) and net pension and other post-employment benefit assets of EUR 3 802 million (EUR 25 million in 2015).

Defined benefit plans

The Group's most significant defined benefit pension plans are in the United States, Germany, and the United Kingdom. Together they account for 93% (80% in 2015) of the Group's total defined benefit obligation and 92% (81% in 2015) of the Group's total plan assets.

The defined benefit obligations, the fair value of plan assets, the effects of the asset ceiling and the net defined benefit balance as of December 31:

	2016				2015			
EURm	Defined benefit obligation	Fair value of plan assets	Effects of asset ceiling	Net defined benefit balance	Defined benefit obligation	Fair value of plan assets	Effects of asset ceiling	Net defined benefit balance
United States	(22 845)	22 880	(265)	(230)	(59)	57	–	(2)
Germany	(2 680)	1 160	–	(1 520)	(1 279)	980	–	(299)
United Kingdom	(1 265)	1 485	–	220	(128)	136	–	8
Other	(1 873)	2 245	(40)	332	(374)	278	(9)	(105)
Total	**(28 663)**	**27 770**	**(305)**	**(1 198)**	**(1 840)**	**1 451**	**(9)**	**(398)**

United States

The Group has significant defined benefit pension plans and a significant post-retirement welfare benefit plan ("Opeb"), providing post-retirement healthcare benefits and life insurance coverage, in the United States. The pension plans include both traditional service-based programs as well as cash-balance plans. The management plan for salaried, non-union member employees was closed to new entrants after December 31, 2007 and fully frozen as of December 31, 2009. The Group, then Alcatel Lucent, adopted a new cash-balance program for salaried, non-union member employees from January 1, 2015. The program was extended to all United States-based salaried employees, except the employees of Nokia Technologies, from January 1, 2017. For union-represented employees, the Group maintains two United States Occupational plans which are traditional service-based pension programs. The larger of the two, which represents 95% of the obligation, is a closed plan. Post-retirement welfare benefit plans are maintained for certain retired former employees. An agreement was made with the Communications Workers of America ("CWA") and the International Brotherhood of Electrical Workers ("IBEW") unions to continue to provide post-retirement healthcare benefits and life-insurance coverage for employees formerly represented by these two unions.

The defined benefit obligations, the fair value of plan assets, the effects of the asset ceiling and the net defined benefit balance as of December 31:

	2016				2015			
EURm	Defined benefit obligation	Fair value of plan assets	Effects of asset ceiling	Net defined benefit balance	Defined benefit obligation	Fair value of plan assets	Effects of asset ceiling	Net defined benefit balance
Pension benefits								
Management	(15 855)	16 861	(2)	1 004	(59)	57	–	(2)
Occupational	(3 528)	5 440	(263)	1 649	–	–	–	–
Supplemental	(401)	–	–	(401)	–	–	–	–
Total	**(19 784)**	**22 301**	**(265)**	**2 252**	**(59)**	**57**	**–**	**(2)**
Post-retirement benefits								
Health (non-union represented)	(126)	–	–	(126)				
Health (formerly union represented)	(1 343)	270	–	(1 073)				
Group life (non-union represented)	(1 040)	220	–	(820)				
Group life (formerly union represented)	(551)	89	–	(462)				
Other	(1)	–	–	(1)				
Total	**(3 061)**	**579**	**–**	**(2 482)**				

Germany
The Group maintains two primary plans in Germany which cover the majority of active employees: the cash balance plan Beitragsorientierter Alterversorgungs Plan ("BAP") and a similar cash balance program for the Group's former Alcatel Lucent employees. Individual benefits are generally dependent on eligible compensation levels, ranking within the Group and years of service. These plans are partially funded defined benefit pension plans, the benefits being subject to a minimum return guaranteed by the Group. The funding vehicle for the BAP plan is the NSN Pension Trust e.V. The funding vehicle for the former Alcatel Lucent cash balance plan is the Alcatel SEL Unterstützungs-GmbH. The trusts are legally separate from the Group and manage the plan assets in accordance with the respective trust agreements.

All other plans have been previously frozen and replaced by the cash balance plans. Benefits are paid in annual installments, as monthly retirement pension, or as a lump sum on retirement in an amount equal to accrued pensions and guaranteed interest. The risks specific to the German defined benefit plans are related to changes in mortality of covered members and return on investment on plan assets.

United Kingdom
The Group has three plans in the United Kingdom. The defined benefit for the legacy Nokia employees is divided into two sections: the money purchase section and the final salary section, both being closed to future contributions and accruals as of April 30, 2012. Individual benefits are generally dependent on eligible compensation levels and years of service for the defined benefit section of the plan and on individual investment choices for the defined contribution section of the plan. The funding vehicle for the pension plan is the NSN Pension Plan that is run on a trust basis. The other two defined benefit pension plans are the Alcatel Pension Plan and the Lucent Technologies Retirement Benefits Plan. Both plans were closed to new entrants in 2002 and 2001, respectively, although active employees still accrue benefits. These plans are both final salary-based programs.

Impact on the consolidated financial statements
Movements in the defined benefit obligation, fair value of plan assets and the impact of the asset ceiling
The movements in the present value of the defined benefit obligation for the years ended December 31:

	2016				2015		
EURm	United States pension	United States Opeb	Other pension	Total	United States pension	Other pension	Total
As of January 1	**(58)**	**–**	**(1 782)**	**(1 840)**	**(71)**	**(1 813)**	**(1 884)**
Transfer to Discontinued operations	–	–	–	**–**	16	–	16
Current service cost	(63)	–	(92)	(155)	–	(46)	(46)
Interest expense	(711)	(111)	(150)	(972)	(3)	(46)	(49)
Past service cost and gains on curtailments	(13)	–	11	(2)	–	5	5
Settlements	5	–	6	11	–	–	–
Total	(782)	(111)	(225)	(1 118)	(3)	(87)	(90)
Remeasurements:							
Gain/(loss) from change in demographic assumptions	79	15	(13)	81	1	(1)	–
(Loss)/gain from change in financial assumptions	(301)	(60)	(593)	(954)	2	112	114
Experience gain/(loss)	227	205	(74)	358	1	(1)	–
Total	5	160	(680)	(515)	4	110	114
Exchange differences	(615)	(91)	166	(540)	(6)	(29)	(35)
Contributions from plan participants	–	(124)	(20)	(144)	–	(16)	(16)
Benefit payments from plans	1 595	366	243	2 204	2	58	60
Acquisitions through business combinations	(19 919)	(3 243)	(3 431)	(26 593)	–	(4)	(4)
Other	(10)	(18)	(89)	(117)	–	(1)	(1)
Total	(18 949)	(3 110)	(3 131)	(25 190)	(4)	8	4
As of December 31	**(19 784)**	**(3 061)**	**(5 818)**	**(28 663)**	**(58)**	**(1 782)**	**(1 840)**

The movements in the fair value of plan assets for the years ended December 31:

EURm	2016 United States pension	2016 United States Opeb	2016 Other pension	2016 Total	2015 United States pension	2015 Other pension	2015 Total
As of January 1	**57**	**–**	**1 394**	**1 451**	**59**	**1 328**	**1 387**
Transfer to Discontinued operations	–	–	–	–	(5)	–	(5)
Interest income	774	18	135	927	2	38	40
Administrative expenses and interest on asset ceiling	(19)	–	(1)	(20)	–	(1)	(1)
Settlements	(5)	–	(6)	(11)	–	–	–
Total	750	18	128	896	2	37	39
Remeasurements:							
Return on plan assets, excluding amounts included in interest income	947	6	387	1 340	(3)	5	2
Total	947	6	387	1 340	(3)	5	2
Exchange differences	709	16	(207)	518	6	22	28
Contributions:							
Employers	32	10	74	116	–	26	26
Plan participants	–	124	20	144	–	16	16
Benefit payments from plans	(1 595)	(366)	(164)	(2 125)	(2)	(45)	(47)
Acquisitions through business combinations	21 571	599	3 182	25 352	–	4	4
Other(1)	(170)	172	76	78	–	1	1
Total	20 547	555	2 981	24 083	4	24	28
As of December 31	**22 301**	**579**	**4 890**	**27 770**	**57**	**1 394**	**1 451**

(1) Includes Section 420 asset transfer between United States pension and United States Opeb.

The movements in the funded status for the years ended December 31:

EURm	2016 United States pension	2016 United States Opeb	2016 Other pension	2016 Total	2015 United States pension	2015 Other pension	2015 Total
As of January 1	**(1)**	**–**	**(388)**	**(389)**	**(12)**	**(485)**	**(497)**
Transfer to Discontinued operations	–	–	–	–	11	–	11
Current service cost	(63)	–	(92)	(155)	–	(46)	(46)
Interest income/(expense)	44	(93)	(16)	(65)	(1)	(8)	(9)
Past service cost and gains on curtailments	(13)	–	11	(2)	–	5	5
Settlements	–	–	–	–	–	(1)	(1)
Total	(32)	(93)	(97)	(222)	(1)	(50)	(51)
Remeasurements:							
Return on plan assets, excluding amounts included in interest income	947	6	387	1 340	(3)	5	2
Gain/(loss) from change in demographic assumptions	79	15	(13)	81	1	(1)	–
(Loss)/gain from change in financial assumptions	(301)	(60)	(593)	(954)	2	112	114
Experience gain/(loss)	227	205	(74)	358	1	(1)	–
Total	952	166	(293)	825	1	115	116
Exchange differences	94	(75)	(41)	(22)	–	(7)	(7)
Employer contributions	32	10	74	116	–	26	26
Benefit payments from plans	–	–	79	79	–	13	13
Acquisitions through business combinations	1 652	(2 644)	(249)	(1 241)	–	–	–
Other(1)	(180)	154	(13)	(39)	–	–	–
Total	1 598	(2 555)	(150)	(1 107)	–	32	32
As of December 31	**2 517**	**(2 482)**	**(928)**	**(893)**	**(1)**	**(388)**	**(389)**

(1) Includes Section 420 asset transfer between United States pension and United States Opeb.

The movements in the impact of the asset ceiling limitation for the years ended December 31:

	2016				2015		
EURm	United States pension	United States Opeb	Other pension	Total	United States pension	Other pension	Total
As of January 1	**–**	**–**	**(9)**	**(9)**	**–**	**(3)**	**(3)**
Interest expense	(1)	–	(1)	(2)	–	–	–
Remeasurements:							
Change in asset ceiling, excluding amounts included in interest (expense)/income	(251)	–	(7)	(258)	–	(6)	(6)
Acquisitions through business combinations	–	–	(22)	(22)	–	–	–
Exchange differences	(13)	–	(1)	(14)	–	–	–
As of December 31	**(265)**	**–**	**(40)**	**(305)**	**–**	**(9)**	**(9)**

Net balances as of December 31:

	2016				2015		
EURm	United States pension	United States Opeb	Other pension	Total	United States pension	Other pension	Total
Total as of December 31	**2 252**	**(2 482)**	**(968)**	**(1 198)**	**(1)**	**(397)**	**(398)**

Present value of obligations includes EUR 21 271 million (EUR 428 million in 2015) of wholly funded obligations, EUR 6 122 million (EUR 1 337 million in 2015) of partly funded obligations and EUR 1 270 million (EUR 75 million in 2015) of unfunded obligations.

Recognized in the income statement
Recognized in personnel expenses in the consolidated income statement for the years ended December 31:

EURm	2016	2015	2014
Current service cost	155	46	39
Past service cost and gains and losses on curtailments	2	(5)	–
Net interest cost	65	9	7
Settlements	–	–	(1)
Other	–	1	–
Total	**222**	**51**	**45**
Of which relates to:			
United States pensions	32	1	–
United States Opeb	92	–	–
Other pensions	98	50	45

Recognized in comprehensive income
Recognized in other comprehensive income for the years ended December 31:

EURm	2016	2015	2014
Return on plan assets (excluding interest income), gain	1 340	2	44
Changes in demographic assumptions, gain/(loss)	81	–	(1)
Changes in financial assumptions, (loss)/gain	(954)	114	(321)
Experience adjustments, gain/(loss)	358	–	(16)
Current year change in asset ceiling	(259)	(6)	4
Total	**566**	**110**	**290**
Of which relates to:			
United States pensions	701	–	–
United States Opeb	166	–	–
Other pensions	(301)	110	290

Actuarial assumptions and sensitivity analysis

Actuarial assumptions

Assumptions regarding future mortality are set based on actuarial advice in accordance with published statistics and experience in each country. The discount rates and mortality tables used for the significant plans:

	2016	2015	2016
	Discount rate %		Mortality table
United States	3.7	4.5	RP–2014 w/MP–2016 mortality projection scale
Germany	1.6	2.5	Heubeck Richttafeln
United Kingdom[1]	2.7	3.6	2005G S2PA Light
Total weighted average for all countries	3.3	3.0	

(1) Tables are adjusted with 1.5% long-term rate of improvement.

The principal actuarial weighted average assumptions used for determining the defined benefit obligation:

%	2016	2015
Discount rate for determining present values	3.3	3.0
Annual rate of increase in future compensation levels	1.9	2.6
Pension growth rate	0.3	1.3
Inflation rate	2.0	1.4
Weighted average duration of defined benefit obligations	11yrs	15yrs

United States defined benefit plans

Actuarial assumptions used for determining the defined benefit obligation:

%	2016	2015
Benefit obligation, discount rate		
Pension	3.7	4.5
Post-retirement healthcare and other	3.4	–
Post-retirement group life	3.8	–
Annual rate of increase in future compensation levels	2.08	–
Assumed healthcare cost trend rates		
Healthcare costs trend rate assumed for next year	7.5	
Healthcare cost trend rate assumed for next year (excluding post-retirement dental benefits)	7.7	
Terminal growth rate	4.9	
Year that the rate reaches the terminal growth value	2028	

Sensitivity analysis

The sensitivity of the defined benefit obligation to changes in the principal assumptions:

	Change in assumption	Increase in assumption[1] EURm	Decrease in assumption[1] EURm
Discount rate for determining present values	1.0%	2 766	(3 361)
Annual rate of increase in future compensation levels	1.0%	(126)	112
Pension growth rate	1.0%	(580)	481
Inflation rate	1.0%	(581)	471
Healthcare cost trend rate	1.0%	(74)	67
Life expectancy	1 year	(826)	773

(1) Positive movement indicates a reduction in the defined benefit obligation; a negative movement indicates an increase in the defined benefit obligation.

The above sensitivity analyses are based on a change in an assumption while holding all other assumptions constant and may not be representative of the actual impact of changes. If more than one assumption is changed simultaneously, the combined impact of changes would not necessarily be the same as the sum of the individual changes. If the assumptions change to a different level compared with that presented above, the effect on the defined benefit obligation may not be linear. The methods and types of assumptions used in preparing the sensitivity analyses are the same as in the previous period.

When calculating the sensitivity of the defined benefit obligation to significant actuarial assumptions, the same method has been applied as when calculating the post-employment benefit obligation recognized in the consolidated statement of financial position; specifically, the present value of the defined benefit obligation is calculated with the projected unit credit method. Increases and decreases in the discount rate, rate of increase in future compensation levels, pension growth rate and inflation, which are used in determining the defined benefit obligation, do not have a symmetrical effect on the defined benefit obligation primarily due to the compound interest effect created when determining the net present value of the future benefit.

Investment strategies

The overall investment objective is to preserve or enhance the plans' funded status through the implementation of an investment strategy that maximizes return within the context of minimizing surplus risk. In formulating the asset allocation for the Plans, multiple factors are considered, including, but not limited to the long-term risk and return expectations for a variety of asset classes as well as current and multi-year projections of the Plans' demographics, benefit payments, contributions and funded status. The results of the Asset-Liability framework are implemented on a plan level.

The Group's pension governance does not allow the pension funds themselves to make direct investments and requires all investments to be placed either in funds partnerships or separate accounts managed by professional asset managers. The investment advisors may use derivative financial instruments including futures contracts, forward contracts, options and interest rate swaps to manage market risk. The performance and risk profile of investments is constantly monitored on a stand-alone basis as well as in the broader portfolio context. One major risk is a decline in the plan's funded status as a result of the adverse performance of plan assets and/or defined benefit obligations. The application of the Asset-Liability Model study focuses on minimizing such risks.

Disaggregation of plan assets

	2016				2015			
EURm	Quoted	Unquoted	Total	%	Quoted	Unquoted	Total	%
Equity securities	2 777	–	2 777	10	348	–	348	24
Debt securities	18 329	–	18 329	66	627	98	725	51
Insurance contracts	–	833	833	3	–	78	78	5
Real estate	–	1 389	1 389	5	–	77	77	5
Short-term investments	1 110	–	1 110	4	124	9	133	9
Other	–	3 332	3 332	12	–	90	90	6
Total	**22 216**	**5 554**	**27 770**	**100**	**1 099**	**352**	**1 451**	**100**

All short-term investments including cash, equities and nearly all fixed-income securities have quoted market prices in active markets. Equity securities represent investments in equity funds and direct investments, which have quoted market prices in an active market. Debt securities represent investments in government and corporate bonds, as well as investments in bond funds, which have quoted market prices in an active market. Debt securities may also comprise investments in funds and direct investments. Insurance contracts are customary pension insurance contracts structured under domestic law in the respective countries. Real estate investments are investments in commercial properties or real estate funds which invest in a diverse range of real estate properties. Short-term investments are liquid assets or cash which are being held for a short period of time, with the primary purpose of controlling the tactical asset allocation. Other includes commodities as well as alternative investments, including derivative financial instruments.

United States plan

United States plan asset target and actual allocation range of the pension and post-retirement trust by asset category as of December 31, 2016:

%	Pension target allocation range	Percentage of plan assets	Post retirement target allocation	Percentage of post employment plan assets
Equity securities	7–13	10	45	45
Fixed income securities	62–83	73	15	15
Real estate	5–9	6	–	–
Private equity and other	8–15	11	–	–
Cash	–	–	40	40
Total		**100**	**100**	**100**

The majority of the Group's United States pension plan assets are held in a master pension trust. The post-retirement plan assets are held in two separate trusts in addition to the amount set aside in the master pension trust for retiree healthcare. The Pension & Benefits Investment Committee formally approves the target allocation ranges every few years on the completion of the Asset-Liability Model study by external advisors and internal investment management. The overall United States pension plan asset portfolio reflects a balance of investments split about 27.0/73.0 between equity, including alternative investments for this purpose, and fixed income securities.

United States pension plan assets included EUR 15 million Nokia bonds as of December 31, 2016 (EUR 8 million in 2015).

Future cash flows
Contributions
Group contributions to the pension and other post-retirement benefit plans are made to facilitate future benefit payments to plan participants. The funding policy is to meet minimum funding requirements as set forth in the employee benefit and tax laws, as well as any such additional amounts as the Group may determine to be appropriate. Contributions are made to benefit plans for the sole benefit of plan participants. Employer contributions expected to be made in 2017 are EUR 123 million.

United States pension plans
Funding methods
Funding requirements for the three major United States qualified pension plans are determined by the applicable statutes, namely the Employee Retirement Income Security Act of 1974 ("ERISA"), the Internal Revenue Code of 1986, and regulations issued by the Internal Revenue Service ("IRS").

In determining funding requirements, ERISA allows assets to be either market value or an average value over a period of time; and liabilities to be based on average interest rates over a period of time. A preliminary assessment indicates that no funding is required for the active management and occupational pension plans until, at least 2018. For the inactive occupational pension plan, the Group does not foresee any future funding requirement for regulatory funding purposes, given the plan's asset allocation, and the level of assets compared to liabilities.

Section 420 transfer
Section 420 of the of the IRS ("Section 420") allows for the transfer of pension assets in excess of specified thresholds ("excess pension assets") over the plan's funding obligation to be used to fund the healthcare benefits and life insurance coverage of that plan's retired participants. Section 420 regulations require the Group to continue to provide healthcare benefits or life insurance coverage to those retirees for a certain period of time ("cost maintenance period"), at levels prescribed by the regulations. Section 420 is currently set to expire on December 31, 2025. On December 1, 2016, the Group made EUR 180 million Section 420 transfer of excess pension assets from the inactive occupational pension plan to fund healthcare benefits and life insurance coverage for retirees who, when actively employed were represented by CWA and IBEW. The Group expects to make a further Section 420 transfer during 2017 from the inactive occupational pension plan to fund healthcare benefits and group life insurance coverage.

Contributions
The following table summarizes expected contributions to the pension and post-retirement plans until 2026. These figures include the reimbursements the Group will receive from the coverage provided to plan participants eligible for the Medicare Prescription drug benefit. The Group did not make contributions to its qualified pension plans during 2016, nor does it expect to make any contributions until, at least 2018. Actual contributions may differ from expected contributions due to various factors, including performance of plan assets, interest rates and legislative changes.

	Pension	Post-retirement		
EURm	Non-qualified plans	Non-represented	Other benefit plans	Medicare subsidy[1] for formerly union represented
2017	28	12	4	(21)
2018	28	12	4	(21)
2019	28	12	4	(20)
2020	28	12	4	(19)
2021	27	12	4	(18)
2022-2026	128	60	255	(79)

(1) Medicare Subsidy is recorded within other movements in the reconciliation of the present value of the defined benefit obligation.

Certain actuarial assumptions used to determine whether pension plan funding is required differ from those used for accounting purposes, which may cause significant differences in volatile markets. While the basis for developing discount rates in both cases is by corporate bond yields, for accounting purposes, a yield curve developed by CitiGroup is used as of the close of the last business day of the financial year; whereas the ERISA funding rules allow the use of either a daily average yield curve for the last month of the financial year, or a two-year average yield curve. When measuring assets, fair values of plan assets as of the last business day of the financial year are used for accounting purposes; whereas ERISA funding rules allow for "asset smoothing" that averages fair values over periods as long as two years with limited expected returns included in the averaging. The approach applied by ERISA for the regulatory funding valuation minimizes the impact of sharp changes in asset values and corporate bond yields in volatile markets.

Healthcare benefits for both management and formerly union represented retirees' benefits are capped for those who retired after February 28, 1990. The benefit obligation associated with this group of retirees is approximately 49% of the total United States retiree healthcare obligation as of December 31, 2016. Medicare is the primary payer for those aged 65 and older, comprising almost all of uncapped retirees.

Benefit payments

The following table summarizes expected benefit payments from the pension and post-retirement plans and other post-employment benefit plans until 2026. Actual benefit payments may differ from expected benefit payments. The amounts for the United States plans are net of expected plan participant contributions, as well as the annual Medicare Part D subsidy of approximately EUR 21 million.

	United States direct benefit payments						Other countries	Total
	Pension			Post-retirement				
EURm	Qualified management	Qualified occupational	Non-qualified plans	Formerly union represented	Non-union represented	Other		
2017	1 302	324	29	127	12	85	299	2 178
2018	1 232	311	28	114	12	86	256	2 039
2019	1 196	299	28	109	12	88	259	1 991
2020	1 160	286	27	139	12	89	262	1 975
2021	1 124	274	27	131	12	90	285	1 943
2022-2026	5 069	1 182	128	514	59	462	1 450	8 864

Benefit payments are paid from plan assets where plans are fully funded. Funding mechanisms, such as the Section 420 transfer, are further utilized to minimize direct benefit payments for underfunded United States Opeb liabilities. Direct benefit payments expected to be paid in 2017 total EUR 119 million.

28. Accrued expenses, deferred revenue and other liabilities

Non-current liabilities

EURm	2016	2015
Advance payments and deferred revenue(1)	1 171	1 235
Salaries, wages and social charges	138	–
Other	144	19
Total	**1 453**	**1 254**

(1) Includes a prepayment of EUR 1 080 million (EUR 1 235 million in 2015) relating to a ten-year mutual patent license agreement with Microsoft. Refer to Note 6, Disposals treated as Discontinued operations.

Current liabilities

EURm	2016	2015
Advance payments and deferred revenue	3 178	1 857
Salaries, wages and social charges	1 576	891
VAT and other indirect taxes	362	164
Other	1 296	483
Total	**6 412**	**3 395**

Other accruals include accrued royalties, research and development expenses, marketing expenses and interest expenses, as well as various amounts which are individually insignificant.

29. Provisions

EURm	Restructuring	Warranty	Litigation	Environmental	Project losses	Divestment-related	Material liability	Other	Total
As of January 1, 2015	**247**	**117**	**68**	**16**	**107**	**137**	**24**	**157**	**873**
Disposal of businesses	–	–	(3)	–	–	–	–	(2)	(5)
Translation differences	(4)	2	(11)	–	–	(12)	–	7	(18)
Reclassification	(15)	–	15	–	–	(6)	–	–	(6)
Charged to income statement:									
Additional provisions	105	31	24	–	5	49	46	42	302
Changes in estimates	(14)	(21)	(11)	–	(25)	(22)	(20)	(18)	(131)
Total charged to income statement	91	10	13	–	(20)	27	26	24	171
Utilized during year(1)	(125)	(35)	(13)	–	(25)	(17)	(21)	(54)	(290)
As of December 31, 2015	**194**	**94**	**69**	**16**	**62**	**129**	**29**	**132**	**725**
Acquisitions through business combinations	291	135	100	114	180	26	31	366	1 243
Translation differences	2	1	22	4	–	9	2	1	41
Reclassification	–	–	8	–	–	(2)	1	(7)	–
Charged to income statement:									
Additional provisions	874	121	75	28	44	16	57	325	1 540
Changes in estimates	(123)	(38)	(31)	(2)	(31)	(24)	(21)	(104)	(374)
Total charged to income statement	751	83	44	26	13	(8)	36	221	1 166
Utilized during year(2)	(525)	(106)	(60)	(26)	(124)	(44)	(22)	(288)	(1 195)
As of December 31, 2016	**713**	**207**	**183**	**134**	**131**	**110**	**77**	**425**	**1 980**

(1) The utilization of restructuring provision includes items transferred to accrued expenses, of which EUR 7 million remained in accrued expenses as of December 31, 2015.
(2) The utilization of restructuring provision includes items transferred to accrued expenses, of which EUR 62 million remained in accrued expenses as of December 31, 2016. The utilization of project losses includes EUR 7 million transferred to inventory write-downs. The utilization of other provisions includes items transferred to accrued expenses, of which EUR 7 million remained in accrued expenses as of December 31, 2016.

The restructuring provision includes personnel and other restructuring-related costs, such as real estate exit costs. On April 6, 2016, the Group expanded its restructuring activities and launched a new cost savings program, recognizing a EUR 677 million restructuring provision. The utilization during the year was EUR 210 million, of which EUR 58 million remained in accrued expenses as of December 31, 2016. In addition, the restructuring provision includes EUR 257 million relating to previously announced restructuring programs. The majority of the restructuring related cash outflows are expected to occur over the next two years.

The warranty provision relates to sold products. Cash outflows related to the warranty provision are generally expected to occur within the next 18 months.

The litigation provision includes estimated potential future settlements for litigation. Cash outflows related to the litigation provision are inherently uncertain and generally occur over several periods.

The environmental provision includes estimated costs to sufficiently clean and refurbish contaminated sites, to the extent necessary, and where necessary, continuing surveillance at sites where the environmental remediation exposure is less significant. Cash outflows related to the environmental liability are inherently uncertain and generally occur over several periods.

The project loss provision is based on IAS 11, Construction Contracts, and relates to onerous customer contracts. Cash outflows related to the project loss provision are generally expected to occur over the next 12 months.

The divestment-related provision relates to the sale of businesses, and includes certain liabilities where the Group is required to indemnify the buyer. Cash outflows related to the divestment-related provision are inherently uncertain.

The material liability provision relates to non-cancellable purchase commitments with suppliers. Cash outflows related to the material liability provision are expected to occur over the next 12 months.

Other provisions include provisions for various contractual obligations and other obligations. Cash outflows related to other provisions are generally expected to occur over the next two years.

Legal matters

A number of Group companies are and will likely continue to be subject to various legal proceedings and investigations that arise from time to time, including proceedings regarding intellectual property, product liability, sales and marketing practices, commercial disputes, employment, and wrongful discharge, antitrust, securities, health and safety, environmental, tax, international trade, and privacy matters. As a result, the Group may incur substantial costs that may not be covered by insurance and could affect business and reputation. While management does not expect any of these legal proceedings to have a material adverse effect on the Group's financial position, litigation is inherently unpredictable and the Group may in the future incur judgments or enter into settlements that could have a material adverse effect on the results of operations and cash flows.

Litigation and proceedings

Irish Broadband

In 2010, the Imagine group (IBB Internet Services & Irish Broadband Internet Services trading as Imagine Networks) ("IBB") served a claim in the commercial court of Ireland for breach of contract and tort against Motorola Limited. The claim was later amended to add Imagine Communications Group as an additional plaintiff. In 2011, Nokia Siemens Networks acquired certain assets and liabilities including this matter from Motorola Solutions Inc. ("Motorola"). Among other things, IBB claims that WiMax network equipment purchased from Motorola failed to perform as promised. The Group disputes these allegations. In 2015, the same claim was made against the Group directly for any amount of the claim that is deemed irrecoverable against Motorola by virtue of the assignment. The case was settled in 2016.

Vertu

The Group divested the United Kingdom-based luxury handset business, Vertu, to Crown Bidco Ltd in 2013. In 2014, Crown Bidco Ltd served a claim in the Commercial Court in London alleging breach of contract in relation to the transfer of IT assets and breach of warranties under the sale agreement. The Group disputes these allegations. In January 2016, the Group discovered material which allowed it to serve a counterclaim naming Crown Bidco and other third parties from EQT (the financier behind Crown Bidco) as defendants. The trial is expected in 2017.

Mass labor litigation Brazil

The Group is defending against a substantial number of labor claims in various Brazilian labor courts. Plaintiffs are former employees whose contracts were terminated after the Group exited from certain managed services contracts. The claims mainly relate to payments made under, or in connection with, the terminated labor contracts. The Group has closed the majority of the court cases through settlement or judgement. Closure of the remaining open cases is expected to occur within the next several years.

Asbestos litigation in the United States

The Group is defending approximately 400 asbestos-related matters, at various stages of litigation, originating from Alcatel Lucent entities. The claims are based on premises liability, products liability, and contractor liability. The claims also involve plaintiffs allegedly diagnosed with various diseases, including but not limited to asbestosis, lung cancer, and mesothelioma.

Intellectual property rights litigation

Apple

On December 21, 2016 , the Group commenced patent infringement proceedings against Apple in Asia, Europe and the United States. Across actions in 11 countries, more than 50 Nokia patents are now in suit, covering a range of technologies, such as display, user interface, software, antenna, chipsets and video coding as well as 3G and 4G cellular standards. Schedules for the various actions are yet to be set.

LG Electronics

In 2015, LG Electronics agreed to take a royalty-bearing smartphone patent license from Nokia Technologies. The detailed royalty payment obligations are subject to arbitration, which is expected to conclude by the end of 2018. Terms of the agreement are confidential.

30. Commitments and contingencies

Contractual obligations

Payments due for contractual obligations as of December 31, 2016 by due date:

EURm	Within 1 year	1 to 3 years	4 to 5 years	More than 5 years	Total
Purchase obligations(1)	2 075	616	122	3	2 816
Operating leases(2)	259	386	236	260	1 141
Total	**2 334**	**1 002**	**358**	**263**	**3 957**

(1) Includes inventory purchase obligations, service agreements and outsourcing arrangements.
(2) Includes leasing costs for office, manufacturing and warehouse space under various non-cancellable operating leases. Certain contracts contain renewal options for various periods of time.

Guarantees and other contingent commitments

EURm	2016	2015
Collateral for own commitments		
Assets pledged	5	7
Contingent liabilities on behalf of Group companies(1)		
Guarantees issued by financial institutions	1 805	398
Other guarantees	794	129
Contingent liabilities on behalf of associated companies and joint ventures		
Financial guarantees	11	15
Contingent liabilities on behalf of other companies		
Financial guarantees	–	6
Other guarantees	135	137
Financing commitments		
Customer finance commitments(2)	223	180
Venture fund commitments(3)	525	230

(1) Includes guarantees to third parties in the normal course of business. These are mainly guarantees given by financial institutions to the Group's customers for the performance of the Group's obligations under supply agreements, including tender bonds, performance bonds, and warranty bonds issued by financial institutions on behalf of the Group. Depending on the nature of the guarantee, compensation is either payable on demand, or subject to verification of non-performance. Additionally, the Group has issued corporate guarantees with primary obligation given directly to customers. These guarantees have been issued by Nokia Corporation for EUR 88 million (EUR 74 million at December 31, 2015), as well as by certain Alcatel Lucent entities for EUR 1 520 million. In Other guarantees, the Group reports guarantees related to non-commercial contracts that support business activities. As a result of internal policies and active management of outstanding guarantee exposure, the Group has not been subject to any material guarantee claims during recent years.
(2) Customer finance commitments are available under loan facilities negotiated with customers. Availability of the facility is dependent upon the borrower's continuing compliance with the agreed financial and operational covenants, and compliance with other administrative terms of the facility. The loan facilities are primarily available to fund capital expenditure relating to purchases of network infrastructure equipment and services. Refer to Note 36, Risk management.
(3) On February 21, 2016, Nokia Growth Partners announced the closing of a new USD 350 million fund for investments in Internet of Things companies. The Group sponsors the fund and will serve to identify new opportunities to grow the ecosystem in these solutions. As a limited partner in Nokia Growth Partners and certain other funds making technology-related investments, the Group is committed to capital contributions and entitled to cash distributions according to the respective partnership agreements and underlying fund activities.

The amounts represent the maximum principal amount for commitments and contingencies.

31. Notes to the consolidated statement of cash flows

EURm	2016	2015	2014
Adjustments for[1]			
Depreciation and amortization	1 594	320	297
Share-based payment	113	49	37
Impairment charges	125	11	1 335
Restructuring charges[3]	751	48	115
Profit on sale of property, plant and equipment and available-for-sale investments	(82)	(132)	(56)
Transfer from hedging reserve to sales and cost of sales	27	61	(10)
Share of results of associated companies and joint ventures (Note 34)	(18)	(29)	12
Financial income and expenses	308	211	600
Income tax (benefit)/expense	(429)	338	(1 281)
Gain on the sale of businesses[2]	(14)	(1 178)	(3 386)
Other income and expenses	32	40	75
Total	**2 407**	**(261)**	**(2 262)**
Change in net working capital			
Decrease/(increase) in short-term receivables	18	(728)	52
Decrease/(increase) in inventories	533	341	(462)
(Decrease)/increase in interest-free short-term liabilities	(2 758)	(990)	1 398
Total	**(2 207)**	**(1 377)**	**988**

(1) Includes Continuing and Discontinued operations. Refer to Note 6, Disposals treated as Discontinued operations.
(2) In 2014, impairment charges, foreign exchange differences, taxes and other adjustments relating to the Sale of the D&S Business were presented separately from the gain.
(3) Adjustments represent the non-cash portion of the restructuring charges recognized in the consolidated income statement.

In 2016, the purchase consideration in relation to the Acquisition of Alcatel Lucent comprises the issuance of new Nokia shares in addition to cash payments. Refer to Note 5, Acquisitions. In 2015, the Group exercised its option to redeem EUR 750 million convertible bonds at their principal amount outstanding plus accrued interest. Virtually all bondholders elected to convert their convertible bonds into Nokia shares before redemption. The conversion did not have a cash impact. In 2014, the convertible bonds issued to Microsoft in 2013 have been netted against the proceeds from the Sale of the D&S Business.

32. Principal Group companies

The Group's significant subsidiaries as of December 31, 2016:

Company name	Country of incorporation and place of business	Primary nature of business	Parent holding %	Group ownership interest %
Nokia Solutions and Networks B.V.	The Hague, Netherlands	Holding company	–	100.0
Nokia Solutions and Networks Oy	Helsinki, Finland	Sales and manufacturing company	–	100.0
Nokia Solutions and Networks US LLC	Delaware, USA	Sales company	–	100.0
Nokia Solutions and Networks Japan Corp.	Tokyo, Japan	Sales company	–	100.0
Nokia Solutions and Networks India Private Limited	New Delhi, India	Sales and manufacturing company	–	100.0
Nokia Solutions and Networks System Technology (Beijing) Co., Ltd.	Beijing, China	Sales company	–	100.0
Nokia Solutions and Networks Branch Operations Oy	Helsinki, Finland	Sales company	–	100.0
PT Nokia Solutions and Networks Indonesia	Jakarta, Indonesia	Sales company	–	100.0
Nokia Solutions and Networks Taiwan Co., Ltd.	Taipei, Taiwan	Sales company	–	100.0
Nokia Solutions and Networks Spain S.L.	Madrid, Spain	Sales company		99.9
Alcatel Lucent SA	Boulogne-Billancourt, France	Holding company	100.0	100.0
Alcatel-Lucent Participations SA	Boulogne-Billancourt, France	Holding company	–	100.0
Alcatel-Lucent USA Inc.	Delaware, USA	Sales company	–	100.0
Alcatel-Lucent Shanghai Bell Co., Ltd[1]	Shanghai, China	Sales and manufacturing company	–	50.0
Alcatel-Lucent International SAS	Boulogne-Billancourt, France	Sales company	–	100.0
Alcatel-Lucent Submarine Networks SAS	Boulogne-Billancourt, France	Sales and manufacturing company	–	100.0
Alcatel-Lucent Bell NV	Antwerp, Belgium	Sales company	–	100.0
Alcatel-Lucent Telecom Limited	Bristol, UK	Sales company	–	100.0
Alcatel-Lucent Canada Inc.	Ottawa, Canada	Sales company	–	100.0
Alcatel-Lucent España S.A.	Madrid, Spain	Sales company	–	100.0
Alcatel-Lucent Italia SPA	Milan, Italy	Sales company	–	100.0
Nokia Finance International B.V.	Haarlem, Netherlands	Holding company	100.0	100.0
Nokia Technologies Oy	Helsinki, Finland	Sales and development company	100.0	100.0

(1) The Group owns 50% plus one share in Alcatel-Lucent Shanghai Bell Co., Ltd, the other shareholder being China Huaxin, an entity controlled by the Chinese government. Refer to Note 33, Significant partly-owned subsidiaries.

33. Significant partly-owned subsidiaries

In 2016, the Group acquired a partly owned consolidated subsidiary, Alcatel-Lucent Shanghai Bell Co., Ltd, which has a non-controlling interest (50% less one share) that is material to the Group. Alcatel-Lucent Shanghai Bell Co., Ltd, a company incorporated in China, which, with its subsidiaries in China and in the rest of the world, including the RFS Group, make up the Alcatel-Lucent Shanghai Bell Group.

Financial information for the Alcatel-Lucent Shanghai Bell Group[1]:

EURm	2016
Summarized income statement	
Net sales[2]	1 806
Operating loss	(136)
Loss for the year	(89)
Loss for the year attributable to:	
Equity holders of the parent	(45)
Non-controlling interests	(45)
Summarized statement of financial position	
Non-current assets	424
Non-current liabilities	(128)
Non-current net assets	**296**
Current assets[3]	2 841
Current liabilities	(1 657)
Current net assets	**1 184**
Net assets[4]	**1 480**
Non-controlling interests	775
Summarized statement of cash flows	
Net cash used in operating activities	(182)
Net cash from investing activities	89
Net cash used in financing activities	(24)
Net decrease in cash and cash equivalents	**(117)**

(1) Financial information for the Alcatel-Lucent Shanghai Bell Group is presented before eliminations of intercompany transactions with the rest of the Group but after eliminations of intercompany transactions between entities within the Alcatel-Lucent Shanghai Bell Group.
(2) Includes EUR 483 million net sales to other Group entities.
(3) Includes a total of EUR 1 284 million of cash and cash equivalents and available-for-sale investments, liquid assets.
(4) The distribution of the profits of Alcatel-Lucent Shanghai Bell Co., Ltd requires the passing of a special resolution by more than two-thirds of its shareholders, subject to a requirement that at least 50% of the after-tax distributable profits are distributed as dividends each year.

34. Investments in associated companies and joint ventures

EURm	2016	2015
Net carrying amount as of January 1	84	51
Translation differences	(1)	6
Acquisitions through business combinations	20	–
Disposals	(4)	–
Share of results	18	29
Dividends	(1)	(2)
Net carrying amount as of December 31	**116**	**84**

Shareholdings in associated companies and joint ventures comprise investments in unlisted companies.

35. Related party transactions

The Group has related party transactions with a pension fund, associated companies, joint ventures and other entities where the Group has significant influence, as well as the management and the Board of Directors. Transactions and balances with companies over which the Group exercises control are eliminated on consolidation. Refer to Note 2, Significant accounting policies, and Note 32, Principal Group companies.

Transactions with pension fund

The Group has borrowings of EUR 69 million (EUR 69 million in 2015) from Nokia Unterstützungsgesellschaft GmbH, the Group's German pension fund, a separate legal entity. The loan bears interest at the rate of 6% per annum and its duration is pending until further notice by the loan counterparties even though they have the right to terminate the loan with a 90-day notice. The loan is included in short-term interest-bearing liabilities in the consolidated statement of financial position.

Transactions with associated companies, joint ventures and other entities where the Group has significant influence

EURm	2016	2015	2014
Share of results	18	29	(12)
Dividend income	1	2	–
Share of shareholders' equity	116	84	51
Sales	62	(1)	1
Purchases	(322)	(233)	(305)
Receivables	13	–	–
Payables	(38)	(37)	(35)

The Group has guaranteed a loan of EUR 11 million (EUR 15 million in 2015) for an associated company.

Management compensation

Compensation information for the President and CEO:

EUR	Base salary/ fee(1)	Cash incentive payments	Share-based payment expenses(2)	Pension expenses
2016				
Rajeev Suri, President and CEO	1 049 044	780 357	5 296 960	469 737
2015				
Rajeev Suri, President and CEO	1 000 000	1 922 195	4 604 622	491 641
2014				
Rajeev Suri, President and CEO from May 1, 2014	666 667	1 778 105	3 896 308	366 989
Risto Siilasmaa, Interim CEO from September 3, 2013 to May 1, 2014(3)	1 126 323	–	–	191 475
Timo Ihamuotila, Interim President from September 3, 2013 to May 1, 2014(4)	100 000	–	72 643	17 000

(1) Base salaries are pro-rated for the time in role. Incentive payments represent full-year incentive payment earned under the Group's short-term incentive programs. For interim roles, the base salary/fee is for role-related responsibilities only.
(2) Represents the expense for all outstanding equity grants recorded during 2016.
(3) Represents the value of 200 000 shares awarded as compensation for additional responsibilities, the balance of which was given in shares after deducting associated taxes and social security contributions.
(4) Includes EUR 100 000 as compensation for additional responsibilities. Also includes an equity grant with an approximate aggregate grant date value of EUR 250 000 in the form of Nokia stock options and Nokia restricted shares. These grants are subject to the standard terms and conditions and vesting schedules of the Group's equity plans. Refer to Note 26, Share-based payment.

Total remuneration awarded to the Group Leadership Team for their time as members of the Group Leadership Team:

EURm	2016	2015	2014
Short-term benefits	26	9	8
Post-employment benefits(1)	1	1	1
Share-based payment(2)	15	9	(3)
Termination benefits(3)	1	3	36
Total	**43**	**22**	**42**

(1) The members of the Group Leadership Team participate in the local retirement programs applicable to employees in the country where they reside.
(2) Due to the significant changes in the Group Leadership Team during 2014, following the Sale of the D&S Business, share-based payment for 2014 reflects cumulative expense reversal for lapsed equity awards.
(3) Includes both termination payments and payments made under exceptional contractual arrangements for lapsed equity awards. Includes payments to former leadership members that left the Group in 2015.

Board of Directors' compensation

The annual remuneration paid to the members of the Board of Directors, as decided by the Annual General Meetings in the respective years:

	2016		2015		2014	
	Gross annual fee[1] EUR	Shares received number	Gross annual fee[1] EUR	Shares received number	Gross annual fee[1] EUR	Shares received number
Risto Siilasmaa, Chair[2]	440 000	35 001	440 000	29 339	440 000	31 186
Olivier Piou, Vice Chair[3]	255 082	19 892	–	–	–	–
Vivek Badrinath[4]	175 000	13 921	140 000	9 333	140 000	9 922
Bruce Brown[5]	190 000	15 114	155 000	10 333	155 000	10 986
Elisabeth Doherty[6]	–	–	140 000	9 333	140 000	9 922
Louis R. Hughes[7]	240 410	18 752	–	–	–	–
Simon Jiang[8]	–	–	130 000	8 666	–	–
Jouko Karvinen[9]	–	–	175 000	11 667	175 000	12 403
Mårten Mickos[10]	–	–	–	–	130 000	9 214
Jean C. Monty[11]	225 410	17 558	–	–	–	–
Elizabeth Nelson[12]	190 000	15 114	140 000	9 333	140 000	9 922
Carla Smits-Nusteling[13]	175 000	13 921	–	–	–	–
Kari Stadigh[14]	160 000	12 727	130 000	8 666	130 000	9 214
Dennis Strigl[10]	–	–	–	–	130 000	9 214
Total	**2 050 902**		**1 450 000**		**1 580 000**	

(1) Approximately 40% of each Board member's annual compensation is paid in Nokia shares purchased from the market, and the remaining approximately 60% is paid in cash. The meeting fees, as resolved by the Annual General Meeting in 2016, will be paid in cash in 2017 and are not included in the table above.
(2) Represents compensation paid for services as the Chair of the Board. Excludes compensation paid for services as the Interim CEO in 2014. Refer to the management compensation section above.
(3) Consists of EUR 70 082 for services as the Vice Chair of the Board from January 8, 2016 until the Annual General Meeting in 2016 and EUR 185 000 for services as the Vice Chair of the Board from the Annual General Meeting in 2016.
(4) Consists of EUR 160 000 for services as a member of the Board and EUR 15 000 for services as a member of the Audit Committee. Mr. Badrinath resigned on July 29, 2016 and has returned the compensation paid to him.
(5) Consists of EUR 160 000 for services as a member of the Board and EUR 30 000 for services as the Chair of the Personnel Committee.
(6) Served as a member of the Audit Committee and a member of the Board until January 8, 2016.
(7) Consists of EUR 60 738 for services as a member of the Board and EUR 4 672 for services as a member of the Audit Committee from January 8, 2016 until the Annual General Meeting in 2016; and EUR 160 000 for services as a member of the Board and EUR 15 000 for services as a member of the Audit Committee from the Annual General Meeting in 2016.
(8) Served as a member of the Board until the Annual General Meeting in 2016.
(9) Served as the Vice Chair of the Board until January 8, 2016, the Chair of the Audit Committee until April 1, 2016, and as a member of the Board until the Annual General Meeting in 2016.
(10) Served as a member of the Board until the Annual General Meeting in 2015.
(11) Consists of EUR 60 738 for services as a member of the Board and EUR 4 672 for services as a member of the Audit Committee from January 8, 2016 until the Annual General Meeting in 2016; and EUR 160 000 for services as a member of the Board from the Annual General Meeting in 2016.
(12) Consists of EUR 160 000 for services as a member of the Board and EUR 30 000 for services as the Chair of the Audit Committee.
(13) Consists of EUR 160 000 for services as a member of the Board and EUR 15 000 for services as a member of the Audit Committee from the Annual General Meeting in 2016.
(14) Consists of EUR 160 000 for services as a member of the Board.

Transactions with the Group Leadership Team and the Board of Directors

No loans were granted to the members of the Group Leadership Team and the Board of Directors in 2016, 2015 or 2014.

Terms of termination of employment of the President and CEO

The President and CEO, Rajeev Suri, may terminate his service contract at any time with six months' prior notice. The Group may terminate his service contract for reasons other than cause at any time with an 18 months' notice period. If there is a change of control event as defined in Mr. Suri's service contract and the service contract is terminated either by the Group or its successor without cause, or by him for "good reason", he would be entitled to a severance payment equaling up to 18 months of compensation and cash payment of the pro-rated value of his outstanding unvested equity awards, if he is dismissed within 18 months of the change in control event.

36. Risk management

General risk management principles

The Group has a systematic and structured approach to risk management across business operations and processes. Key risks and opportunities are identified primarily against business targets either in business operations or as an integral part of financial planning. Key risks and opportunities are analyzed, managed, monitored and identified as part of business performance management with the support of risk management personnel. The Group's overall risk management concept is based on managing the key risks that would prevent the Group from meeting its objectives, rather than solely focusing on eliminating risks. The principles documented in the Nokia Enterprise Risk Management Policy, approved by the Audit Committee of the Board of Directors, require risk management and its elements to be integrated into key processes. One of the main principles is that the business or function head is also the risk owner, although all employees are responsible for identifying, analyzing and managing risks as appropriate to their roles and duties. Risk management covers strategic, operational, financial and hazard risks. Key risks and opportunities are reviewed by the Group Leadership Team and the Board of Directors in order to create visibility on business risks as well as to enable prioritization of risk management activities. In addition to the principles defined in the Nokia Enterprise Risk Management Policy, specific risk management implementation is reflected in other key policies.

Financial risks

The objective for treasury activities is to guarantee sufficient funding at all times and to identify, evaluate and manage financial risks. Treasury activities support this aim by mitigating the adverse effects on the profitability of the underlying business caused by fluctuations in the financial markets, and by managing the capital structure by balancing the levels of liquid assets and financial borrowings. Treasury activities are governed by the Nokia Treasury Policy approved by the Group President and CEO which provides principles for overall financial risk management and determines the allocation of responsibilities for financial risk management activities. Operating procedures approved by the Group CFO cover specific areas such as foreign exchange risk, interest rate risk, credit and liquidity risk as well as the use of derivative financial instruments in managing these risks. The Group is risk averse in its treasury activities.

Financial risks are divided into market risk covering foreign exchange risk, interest rate risk and equity price risk; credit risk covering business-related credit risk and financial credit risk; and liquidity risk.

Market risk

Foreign exchange risk

The Group operates globally and is exposed to transaction and translation foreign exchange risks. Transaction risk arises from foreign currency denominated assets and liabilities together with foreign currency denominated future cash flows. Transaction exposures are managed in the context of various functional currencies of Group companies. Material transactional foreign exchange exposures are hedged, unless hedging would be uneconomical due to market liquidity and/or hedging cost. Exposures are defined using transaction nominal values. Exposures are mainly hedged with derivative financial instruments, such as forward foreign exchange contracts and foreign exchange options. The majority of financial instruments hedging foreign exchange risk have a duration of less than a year. The Group does not hedge forecast foreign currency cash flows beyond two years.

As the Group has entities where the functional currency is other than the euro, the shareholders' equity is exposed to fluctuations in foreign exchange rates. Equity changes caused by movements in foreign exchange rates are shown as currency translation differences in the consolidated financial statements. The Group may use forward foreign exchange contracts, foreign exchange options and foreign currency denominated loans to hedge its foreign exchange exposure arising from foreign net investments.

Currencies that represent a significant portion of the currency mix in outstanding financial instruments as of December 31 are as follows:

EURm	USD	JPY	CNY	GBP
2016				
Foreign exchange derivatives used as cash flow hedges, net(1)	–	(158)	–	–
Foreign exchange derivatives used as fair value hedges, net(2)	(397)	–	–	103
Foreign exchange derivatives used as net investment hedges, net(3)	(1 418)	–	–	(249)
Foreign exchange exposure from statement of financial position items, net	(2 172)	434	(227)	(322)
Foreign exchange derivatives not designated in a hedge relationship, carried at fair value through profit and loss, net(4)	1 747	(174)	(587)	259
Cross-currency/interest rate hedges	1 051	(328)	–	–
2015				
Foreign exchange derivatives used as cash flow hedges, net(1)	(465)	(262)	–	–
Foreign exchange derivatives used as net investment hedges, net(3)	(296)	–	–	–
Foreign exchange exposure from statement of financial position items, net	(1 004)	910	32	(97)
Foreign exchange derivatives not designated in a hedge relationship, carried at fair value through profit and loss, net(4)	(226)	(559)	18	90
Cross-currency/interest rate hedges	1 001	(311)	–	–

(1) Used to hedge the foreign exchange risk from forecasted highly probable cash flows related to sales, purchases and business acquisition activities. In some currencies, especially the U.S. dollar, the Group has substantial foreign exchange risks in both estimated cash inflows and outflows. The underlying exposures for which these hedges are entered into are not presented in the table as they are not financial instruments.
(2) Used to hedge foreign exchange risk from contractual firm commitments. The underlying exposures for which these hedges are entered into are not presented in the table as they are not financial instruments.
(3) Used to hedge net investment exposure. The underlying exposures for which these hedges are entered into are not presented in the table as they are not financial instruments.
(4) Items on the statement of financial position and some probable forecasted cash flows denominated in foreign currencies are hedged by a portion of foreign exchange derivatives not designated in a hedge relationship and carried at fair value through profit and loss.

The methodology for assessing market risk exposures: Value-at-risk

The Group uses the Value-at-Risk ("VaR") methodology to assess exposures to foreign exchange risks. The VaR-based methodology provides estimates of potential fair value losses in market risk-sensitive instruments as a result of adverse changes in specified market factors, at a specified confidence level over a defined holding period. The Group calculates the foreign exchange VaR using the Monte Carlo method which simulates random values for exchange rates in which the Group has exposures and takes the non-linear price function of certain derivative instruments into account. The VaR is determined using volatilities and correlations of rates and prices estimated from a sample of historical market data, at a 95% confidence level, using a one-month holding period. To put more weight on recent market conditions, an exponentially weighted moving average is performed on the data with an appropriate decay factor. This model implies that within a one-month period, the potential loss will not exceed the VaR estimate in 95% of possible outcomes. In the remaining 5% of possible outcomes the potential loss will be at minimum equal to the VaR figure and, on average, substantially higher. The VaR methodology relies on a number of assumptions which include the following: risks are measured under average market conditions, changes in market risk factors follow normal distributions, future movements in market risk factors are in line with estimated parameters and the assessed exposures do not change during the holding period. Thus, it is possible that, for any given month, the potential losses at a 95% confidence level are different and could be substantially higher than the estimated VaR.

The VaR figures for the Group's financial instruments which are sensitive to foreign exchange risks are presented in the table below. The VaR calculation includes foreign currency denominated monetary financial instruments, such as available-for-sale investments, loans and accounts receivable, investments at fair value through profit and loss, cash, loans and accounts payable; foreign exchange derivatives carried at fair value through profit and loss which are not in a hedge relationship and are mostly used to hedge the statement of financial position foreign exchange exposure; and foreign exchange derivatives designated as forecasted cash flow hedges and net investment hedges. Most of the VaR is caused by these derivatives as forecasted cash flow and net investment exposures are not financial instruments as defined in IFRS 7, Financial Instruments: Disclosures, and thus not included in the VaR calculation.

	2016	2015
EURm	VaR from financial instruments	
As of December 31	83	54
Average for the year	111	145
Range for the year	73–149	54–217

Interest rate risk

The Group is exposed to interest rate risk either through market value fluctuations of items on the consolidated statement of financial position ("price risk") or through changes in interest income or expenses ("refinancing" or "reinvestment risk"). Interest rate risk mainly arises through interest-bearing liabilities and assets. Estimated future changes in cash flows and the structure of the consolidated statement of financial position also expose the Group to interest rate risk. The objective of interest rate risk management is to mitigate adverse impacts arising from interest rate fluctuations on the consolidated income statement, cash flow, and financial assets and liabilities while taking into consideration the Group's target capital structure and the resulting net interest rate exposure.

Interest rate profile of interest-bearing assets and liabilities as of December 31:

	2016		2015	
EURm	Fixed rate	Floating rate(1)	Fixed rate	Floating rate(1)
Assets	2 107	7 410	3 453	6 428
Liabilities	(3 845)	(113)	(2 038)	(31)
Assets and liabilities before derivatives	**(1 738)**	**7 297**	**1 415**	**6 397**
Interest rate derivatives	1 358	(1 328)	981	(986)
Assets and liabilities after derivatives	**(380)**	**5 969**	**2 396**	**5 411**

(1) All investments and credit support-related liabilities with initial maturity of three months or less are considered floating rate for the purposes of interest rate risk management. Comparatives have been adjusted to conform to current year presentation.

Notes to consolidated financial statements continued

Interest rate exposure is monitored and managed centrally. The Group uses selective sensitivity analyses to assess and measure interest rate exposure arising from interest-bearing assets, interest-bearing liabilities and related derivatives. Sensitivity analysis determines an estimate of potential fair value changes in market risk-sensitive instruments by varying interest rates in currencies in which the Group has material amounts of financial assets and liabilities while keeping all other variables constant. The Group's sensitivity to interest rate exposure in the investment and debt portfolios is presented in the table below. Sensitivities to credit spreads are not reflected in the numbers.

	2016			2015		
EURm	Impact on fair value	Impact on profit	Impact on OCI	Impact on fair value	Impact on profit	Impact on OCI
Interest rates – increase by 100 basis points	181	(3)	(2)	6	(8)	(32)
Interest rates – decrease by 50 basis points	(99)	2	1	(5)	4	17

Equity price risk
In 2016, the Group does not have exposure to equity price risk as it does not have significant investments in publicly listed equity shares (EUR 16 million in 2015). The private funds where the Group has investments may, from time to time, have investments in public equity. Such investments have not been included in the above number.

Other market risk
In certain emerging market countries there are local exchange control regulations that provide for restrictions on making cross-border transfers of funds as well as other regulations that impact the Group's ability to control its net assets in those countries.

Credit risk
Credit risk refers to the risk that a counterparty will default on its contractual obligations resulting in financial loss to the Group. Credit risk arises from credit exposures to customers, including outstanding receivables, financial guarantees and committed transactions, as well as financial institutions, including bank and cash, fixed income and money-market investments, and derivative financial instruments. Credit risk is managed separately for business-related and financial credit exposures.

The maximum exposure to credit risk for outstanding customer finance loans is limited to the book value of financial assets as included in the consolidated statement of financial position:

EURm	2016	2015
Financial guarantees given on behalf of customers and other third parties	–	6
Loan commitments given but not used	223	180
Outstanding customer finance loans(1)	129	33
Total	**352**	**219**

(1) Includes acquired customer loans on a fair value basis which excludes EUR 33 million considered to be uncollectible.

Business-related credit risk
The Group aims to ensure the highest possible quality in accounts receivable and loans due from customers and other third parties. The Credit Policy, approved by the Group President and CEO, and the related procedures approved by the Group CFO, lay out the framework for the management of the business-related credit risks. The Credit Policy and related procedures set out that credit decisions are based on credit evaluation in each business, including credit rating for larger exposures, according to defined rating principles. Material credit exposures require Group-level approval. Credit risks are monitored in each business and, where appropriate, mitigated with the use of letters of credit, collateral, insurance, and the sale of selected receivables.

Credit exposure is measured as the total of accounts receivable and loans outstanding due from customers and committed credits. Accounts receivable do not include any major concentrations of credit risk by customer. The top three customers account for approximately 3.5%, 3.0% and 2.4% (9.6%, 5.9% and 3.5% in 2015) of accounts receivable and loans due from customers and other third parties as of December 31, 2016. The top three credit exposures by country account for approximately 19.1%, 8.6% and 7.4% (19.6%, 12.1% and 10.8% in 2015) of the Group's accounts receivable and loans due from customers and other third parties as of December 31, 2016. The 19.1% credit exposure relates to accounts receivable in China (19.6% in 2015).

The Group has provided allowances for doubtful accounts on accounts receivable and loans due from customers and other third parties not past due based on an analysis of debtors' credit ratings and credit histories. The Group establishes allowances for doubtful accounts that represent an estimate of expected losses at the end of the reporting period. All receivables and loans due from customers are considered on an individual basis to determine the allowances for doubtful accounts. The total of accounts receivable and loans due from customers is EUR 7 101 million (EUR 3 946 million in 2015). The gross carrying amount of accounts receivable, related to customer balances for which valuation allowances have been recognized, is EUR 2 439 million (EUR 1 150 million in 2015). The allowances for doubtful accounts for these accounts receivable as well as amounts expected to be uncollectible for acquired receivables are EUR 301 million (EUR 62 million in 2015).

Aging of past due receivables not considered to be impaired as of December 31:

EURm	2016	2015
Past due 1-30 days	102	25
Past due 31-180 days	141	53
More than 180 days	223	124
Total	**466**	**202**

Financial credit risk
Financial instruments contain an element of risk resulting from changes in the market price due to counterparties becoming less creditworthy or risk of loss due to counterparties being unable to meet their obligations. Financial credit risk is measured and monitored centrally by Treasury. Financial credit risk is managed actively by limiting counterparties to a sufficient number of major banks and financial institutions, and by monitoring the creditworthiness and the size of exposures continuously. Additionally, the Group enters into netting arrangements with all major counterparties, which give the right to offset in the event that the counterparty would not be able to fulfill its obligations. The Group enters into collateral agreements with certain counterparties, which require counterparties to post collateral against derivative receivables.

Investment decisions are based on strict creditworthiness and maturity criteria as defined in the Treasury-related policies and procedures. As a result of this investment policy approach and active management of outstanding investment exposures, the Group has not been subject to any material credit losses in its financial investments in the years presented.

Breakdown of outstanding fixed income and money-market investments by sector and credit rating grades ranked as per Moody's rating categories as of December 31:

EURm	Rating(1)	Due within 3 months	Due between 3 and 12 months	Due between 1 and 3 years	Due between 3 and 5 years	Due beyond 5 years	Total(2)(3)(4)
2016							
Banks	Aaa	1 054	–	–	–	–	1 054
	Aa1-Aa3	410	201	35	–	–	646
	A1-A3	1 405	211	387	116	–	2 119
	Baa1-Baa3	893	728	–	–	–	1 621
	Ba1-Ba3	15	–	–	–	–	15
	Non-rated	42	–	–	–	–	42
Governments	A1-A3	–	–	274	53	–	327
Other	Aa1-Aa3	45	30	1	–	–	76
	A1-A3	52	61	13	–	–	126
	Baa1-Baa3	6	13	5	–	–	24
Total		**3 922**	**1 244**	**715**	**169**	–	**6 050**
2015							
Banks	Aaa	3 269	–	–	–	–	3 269
	Aa1-Aa3	93	94	–	–	–	187
	A1-A3	280	320	–	100	–	700
	Baa1-Baa3	738	475	90	–	50	1 353
	Non-rated	12	–	–	–	–	12
Governments	Aaa	–	267	252	444	113	1 076
	Aa1-Aa3	–	–	10	140	–	150
	A1-A3	309	198	257	50	–	814
	Baa1-Baa3	12	–	23	–	–	35
Other	Baa1-Baa3	–	–	–	12	–	12
Total		**4 713**	**1 354**	**632**	**746**	**163**	**7 608**

(1) Bank Parent Company ratings are used here for bank groups. In some emerging markets countries, actual bank subsidiary ratings may differ from the Parent Company rating.
(2) Fixed income and money-market investments include term deposits, structured deposits, investments in liquidity funds and investments in fixed income instruments classified as available-for-sale investments and investments at fair value through profit and loss. Liquidity funds invested solely in government securities are included under Governments. Other liquidity funds are included under Banks.
(3) Instruments that include a call feature have been presented at their final maturities, if any. Instruments that are contractually due beyond 3 months include EUR 566 million (EUR 510 million in 2015) of instruments that have a call period of less than 3 months.
(4) Includes EUR 5 million of restricted investments (EUR 5 million in 2015) within fixed income and money-market investments. These are restricted financial assets under various contractual or legal obligations.

97% (98% in 2015) of the Group's cash at bank of EUR 3 276 million (EUR 2 242 million in 2015) is held with banks of investment grade credit rating.

Financial assets and liabilities subject to offsetting under enforceable master netting agreements and similar arrangements as of December 31:

EURm	Gross amounts of financial assets/ (liabilities)	Gross amounts of financial liabilities/ (assets) set off in the statement of financial position	Net amounts of financial assets/ (liabilities) presented in the statement of financial position	Related amounts not set off in the statement of financial position		Net amount
				Financial instruments assets/(liabilities)	Cash collateral received/(pledged)	
2016						
Derivative assets	235	–	235	153	73	9
Derivative liabilities	(236)	–	(236)	(128)	(96)	(12)
Total	**(1)**	**–**	**(1)**	**25**	**(23)**	**(3)**
2015						
Derivative assets	96	–	96	67	24	5
Derivative liabilities	(114)	–	(114)	(65)	(34)	(15)
Total	**(18)**	**–**	**(18)**	**2**	**(10)**	**(10)**

The financial instruments subject to enforceable master netting agreements and similar arrangements are not offset in the consolidated statement of financial position where there is no intention to settle net or realize the asset and settle the liability simultaneously.

Liquidity risk

Liquidity risk is defined as financial distress or extraordinarily high financing costs arising from a shortage of liquid funds in a situation where outstanding debt needs to be refinanced or where business conditions unexpectedly deteriorate and require financing. Transactional liquidity risk is defined as the risk of executing a financial transaction below fair market value or not being able to execute the transaction at all within a specific period of time. The objective of liquidity risk management is to maintain sufficient liquidity, and to ensure that it is available fast enough without endangering its value in order to avoid uncertainty related to financial distress at all times.

The Group aims to secure sufficient liquidity at all times through efficient cash management and by investing in short-term liquid interest-bearing securities and money-market investments. Depending on its overall liquidity position, the Group may pre-finance or refinance upcoming debt maturities before contractual maturity dates. The transactional liquidity risk is minimized by entering into transactions where proper two-way quotes can be obtained from the market.

Due to the dynamic nature of the underlying business, the Group aims to maintain flexibility in funding by maintaining committed and uncommitted credit lines. As of December 31, 2016 committed revolving credit facilities totaled EUR 1 579 million (EUR 1 500 million in 2015).

Significant current long-term funding programs as of December 31, 2016:

Issuer:	Program:	Issued
Nokia Corporation	Euro Medium-Term Note Program, totaling EUR 5 000 million	–

Significant current short-term funding programs as of December 31, 2016:

Issuer:	Program:	Issued
Nokia Corporation	Local commercial paper program in Finland, totaling EUR 750 million	–

The following table presents an undiscounted cash flow analysis for financial liabilities and financial assets that are presented on the consolidated statement of financial position, and "off-balance sheet" instruments such as loan commitments, according to their remaining contractual maturity. The line-by-line analysis does not directly reconcile with the consolidated statement of financial position.

EURm	Total	Due within 3 months	Due between 3 and 12 months	Due between 1 and 3 years	Due between 3 and 5 years	Due beyond 5 years
2016						
Non-current financial assets						
Long-term loans receivable	**150**	–	2	86	32	30
Current financial assets						
Short-term loans receivable	**62**	32	28	2	–	–
Investments at fair value through profit and loss	**326**	–	1	272	53	–
Available-for-sale investments, including cash equivalents(1)	**5 753**	3 935	1 248	453	117	–
Bank and cash	**3 276**	3 276	–	–	–	–
Cash flows related to derivative financial assets net settled:						
Derivative contracts—receipts	**42**	18	(6)	30	–	–
Cash flows related to derivative financial assets gross settled:						
Derivative contracts—receipts	**8 221**	6 473	492	1 038	13	205
Derivative contracts—payments	**(7 942)**	(6 404)	(440)	(962)	(5)	(131)
Accounts receivable(2)	**5 895**	4 430	1 354	106	5	–
Non-current financial liabilities						
Long-term interest-bearing liabilities	**(5 807)**	(85)	(140)	(1 955)	(269)	(3 358)
Current financial liabilities						
Short-term borrowings	**(372)**	(255)	(116)	(1)	–	–
Cash flows related to derivative financial liabilities gross settled:						
Derivative contracts—receipts	**8 948**	7 727	925	248	48	–
Derivative contracts—payments	**(9 187)**	(7 867)	(995)	(272)	(53)	–
Accounts payable	**(3 781)**	(3 600)	(152)	(29)	–	–
Contingent financial assets and liabilities						
Loan commitments given undrawn(3)	**(223)**	(30)	(83)	(110)	–	–
Loan commitments obtained undrawn(4)	**1 564**	(1)	(3)	1 568	–	–

(1) Instruments that include a call feature have been presented at their final maturities, if any. Instruments that are contractually due beyond 3 months include EUR 566 million of instruments that have a call period of less than 3 months.
(2) Accounts receivable maturity analysis does not include accrued receivables of EUR 1 077 million.
(3) Loan commitments given undrawn have been included in the earliest period in which they could be drawn or called.
(4) Loan commitments obtained undrawn have been included based on the period in which they expire. These amounts include related commitment fees.

EURm	Total	Due within 3 months	Due between 3 and 12 months	Due between 1 and 3 years	Due between 3 and 5 years	Due beyond 5 years
2015						
Non-current financial assets						
Long-term loans receivable	**58**	–	8	28	4	18
Current financial assets						
Short-term loans receivable	**22**	4	18	–	–	–
Investments at fair value through profit and loss	**742**	–	256	265	57	164
Available-for-sale investments, including cash equivalents[(1)]	**6 938**	4 714	1 105	403	663	53
Bank and cash	**2 242**	2 242	–	–	–	–
Cash flows related to derivative financial assets net settled:						
Derivative contracts—receipts	**51**	18	(7)	22	18	–
Cash flows related to derivative financial assets gross settled:						
Derivative contracts—receipts	**4 203**	3 441	221	42	295	204
Derivative contracts—payments	**(4 078)**	(3 431)	(209)	(23)	(277)	(138)
Accounts receivable[(2)]	**2 628**	2 014	586	25	3	–
Non-current financial liabilities						
Long-term interest-bearing liabilities	**(3 070)**	(34)	(84)	(244)	(1 549)	(1 159)
Current financial liabilities						
Short-term borrowings	**(52)**	(50)	(2)	–	–	–
Cash flows related to derivative financial liabilities net settled:						
Derivative contracts—payments	**(78)**	–	(5)	(8)	(6)	(59)
Cash flows related to derivative financial liabilities gross settled:						
Derivative contracts—receipts	**4 901**	3 114	760	318	709	–
Derivative contracts—payments	**(4 924)**	(3 162)	(753)	(302)	(707)	–
Accounts payable	**(1 910)**	(1 835)	(75)	–	–	–
Contingent financial assets and liabilities						
Loan commitments given undrawn[(3)]	**(180)**	(17)	(39)	(124)	–	–
Loan commitments obtained undrawn[(4)]	**1 487**	(1)	(4)	1 492	–	–

(1) Instruments that include a call feature have been presented at their final maturities, if any. Instruments that are contractually due beyond 3 months included EUR 510 million of instruments that have a call period of less than 3 months in 2015.
(2) Accounts receivable maturity analysis did not include accrued receivables of EUR 1 285 million in 2015.
(3) Loan commitments given undrawn have been included in the earliest period in which they could be drawn or called.
(4) Loan commitments obtained undrawn have been included based on the period in which they expire. These amounts include related commitment fees.

37. Subsequent events

Non-adjusting events after the reporting period

Acquisition of Deepfield Networks Inc.

On January 31, 2017 the Group acquired 100% ownership interest in Deepfield Networks Inc., a United States-based leader in real-time analytics for IP network performance management and security. The acquisition does not have a material impact to the consolidated statement of financial position, comprehensive income or cash flows.

Offer to acquire Comptel Corporation

On February 8, 2017 the Group and Comptel Corporation entered into a Transaction Agreement whereby the Group undertakes to make a voluntary public cash tender offer to purchase all of the issued and outstanding shares and option rights in Comptel Corporation that are not owned by Comptel Corporation, or any of its subsidiaries. The price offered for each share validly tendered in the Tender Offer will be EUR 3.04 in cash. The Tender Offer values Comptel at approximately EUR 347 million, on a fully diluted basis.

Offer to purchase outstanding notes

On February 22, 2017 the Group announced that it commenced an offer to purchase the outstanding EUR 500 million 6.75% notes due February 4, 2019 (the "2019 Euro Notes") issued by Nokia Corporation; and the outstanding USD 300 million 6.50% notes due January 15, 2028 (the "2028 Dollar Notes") and USD 1 360 million 6.45% notes due March 15, 2029 (the "2029 Dollar Notes"), issued by Lucent Technologies Inc. (the predecessor to Alcatel-Lucent Inc., the Group's wholly-owned subsidiary), up to a maximum cash consideration of USD 1 000 million (the "Tender Offer"). The purpose of the Tender Offer is to manage the overall indebtedness of the Group. Following the settlement of the Tender Offer, the Group expects to cancel any euro-denominated notes purchased pursuant to the Tender Offer and to hold any US dollar-denominated notes purchased pursuant to the Tender Offer.

On March 21, 2017, the Tender Offer expired. The Group received tenders for 53.76% (EUR 268.8 million) of the 2019 Euro Notes, 28.66% (USD 86.0 million) of the 2028 Dollar Notes and 29.48% (USD 400.9 million) of the 2029 Dollar Notes. The Group expects to settle the Tender Offer on March 23, 2017.

New euro-denominated notes

On March 15, 2017, the Group issued EUR 500 million 1.00% Senior Notes due 2021 and EUR 750 million 2.00% Senior Notes due 2024 under our 5 000 000 000 Euro Medium-Term Note Programme. The proceeds of the new notes are intended to fund the Tender Offer and for general corporate purposes.

Income taxes

In January 2017, as part of continuing changes to its operating model, the Group transferred certain intellectual property between its operations in Finland and the United States, which is expected to result in approximately EUR 250 million negative non-recurring impact on tax expenses in the first quarter of 2017 but no material cash tax outflow.

Changes in organizational structure

On March 17, 2017, the Group announced changes in the organizational structure, effective from April 1, 2017. The organizational changes include the separation of the current Mobile Networks business group into two distinct, but closely linked, organizations: (1) Mobile Networks, focused on products and solutions and (2) Global Services, focused on services. The Group will continue to report financial information for Ultra Broadband Networks, IP Networks and Applications and Nokia Technologies. Ultra Broadband Networks will be composed of the Mobile Networks, Global Services and Fixed Networks business groups. IP Networks and Applications is composed of the IP/Optical Networks and Applications & Analytics business groups.