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The Company regularly evaluates claims and legal proceedings together with their related probable losses to determine whether they need to be adjusted based on the current information available to the Company. There can be no assurance that its recorded reserves will be sufficient to cover the extent of its potential liabilities. Legal costs associated with claims are expensed as incurred. In the event of litigation which is adversely determined with respect to the Company's interests, or in the event the Company needs to change its evaluation of a potential third-party claim, based on new evidence or communications, a material adverse effect could impact its operations or financial condition at the time it were to materialize.

As of December 31, 2016, provisions for estimated probable losses with respect to claims and legal proceedings were not considered material.

24. FINANCIAL INSTRUMENTS AND RISK MANAGEMENT

24.1 Financial risk factors

The Company is exposed to changes in financial market conditions in the normal course of business due to its operations in different foreign currencies and its ongoing investing and financing activities. The Company's activities expose it to a variety of financial risks: market risk (including foreign exchange risk, fair value interest rate risk, cash flow interest rate risk and price risk), credit risk and liquidity risk. The Company's overall risk management program focuses on the unpredictability of financial markets and seeks to minimize potential adverse effects on the Company's financial performance. The Company uses derivative financial instruments to hedge certain risk exposures.

Financial risk management is carried out by a central treasury department (Corporate Treasury). Additionally, a Treasury Committee, chaired by the CFO, steers treasury activities and ensures compliance with corporate policies. Treasury activities are thus regulated by the Company's policies, which define procedures, objectives and controls. The policies focus on the management of financial risk in terms of exposure to market risk, credit risk and liquidity risk. Treasury controls are subject to internal audits. Most treasury activities are centralized, with any local treasury activities subject to oversight from Corporate Treasury. Corporate Treasury identifies, evaluates and hedges financial risks in close cooperation with the Company's operating units. It provides written principles for overall risk management, as well as written policies covering specific areas, such as foreign exchange risk, interest rate risk, price risk, credit risk, use of derivative financial instruments, and investments of excess liquidity. The majority of cash and cash equivalents is held in U.S. dollars and Euros and is placed with financial institutions rated at least a single "A" long-term rating from two of the major rating agencies, meaning at least A3 from Moody's Investor Service and A- from Standard & Poor's and Fitch Ratings, or better. These ratings are closely and continuously monitored in order to manage exposure to the counterparty's risk. Hedging transactions are performed only to hedge exposures deriving from operating, investing and financing activities conducted in the normal course of business.

Market risk

Foreign exchange risk

The Company conducts its business on a global basis in various major international currencies. As a result, the Company is exposed to adverse movements in foreign currency exchange rates, primarily with respect to the Euro. Foreign exchange risk mainly arises from recognized assets and liabilities at the Company's subsidiaries and future commercial transactions.

Management has set up a policy to require the Company's subsidiaries to hedge their entire foreign exchange risk exposure with the Company through financial instruments transacted or overseen by Corporate Treasury. To manage their foreign exchange risk arising from foreign-currency-denominated assets and liabilities, subsidiaries use forward contracts and purchased currency options. Foreign exchange risk arises when recognized assets and liabilities are denominated in a currency that is not the entity's functional currency. These instruments do not qualify as hedging instruments for accounting purposes. Forward contracts and currency options, including collars, are also used by the Company to reduce its exposure to U.S. dollar fluctuations in Euro-denominated forecasted intercompany transactions that cover a large part of its research and development, selling, general and administrative expenses as well as a portion of its front-end manufacturing costs of semi-finished goods. The Company also hedges through the use of currency forward contracts certain Singapore dollar-denominated manufacturing forecasted transactions. The derivative instruments used to hedge these forecasted transactions meet the criteria for designation as cash flow hedge. The hedged forecasted transactions have a high probability of occurring for hedge accounting purposes.

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It is the Company's policy to have the foreign exchange exposures in all the currencies hedged month by month against the monthly standard rate. At each month end, the forecasted flows for the coming month are hedged together with the fixing of the new standard rate. For this reason the hedging transactions will have an exchange rate very close to the standard rate at which the forecasted flows will be recorded on the following month. As such, the foreign exchange exposure of the Company, which consists in the balance sheet positions and other contractually agreed transactions, is always close to zero and any movement in the foreign exchange rates will not therefore influence the exchange effect on items of the consolidated statement of income. Any discrepancy from the forecasted values and the actual results is constantly monitored and prompt actions are taken, if needed.

Derivative Instruments Not Designated as a Hedge

The Company enters into foreign currency forward contracts to reduce its exposure to changes in exchange rates and the associated risk arising from the denomination of certain assets and liabilities in foreign currencies in the Company's subsidiaries. These include receivables from international sales by various subsidiaries, payables for foreign currency-denominated purchases and certain other assets and liabilities arising from intercompany transactions.

The notional amount of these financial instruments totaled \$375 million, \$372 million and \$286 million at December 31, 2016, 2015 and 2014, respectively. The principal currencies covered at the end of the year 2016 are the Euro, the Japanese yen, the Singapore dollar, the Indian rupee, the Swiss franc, the China Yuan Renminbi, the British pound and the South Korean won.

The risk of loss associated with forward contracts is equal to the exchange rate differential from the time the contract is entered into until the time it is settled. The risk of loss associated with purchased currency options is equal to the premium paid when the option is not exercised.

Foreign currency forward contracts not designated as cash flow hedge outstanding as of December 31, 2016 have remaining terms of 3 days to 254 days, maturing on average after 26 days.

Derivative Instruments Designated as a Hedge

To further reduce its exposure to U.S. dollar exchange rate fluctuations, the Company hedges through the use of currency forward contracts and currency options, including collars, certain Euro-denominated forecasted intercompany transactions that cover at year-end a large part of its research and development, selling, general and administrative expenses, as well as a portion of its front-end manufacturing costs of semi-finished goods within cost of sales. The Company also hedges through the use of currency forward contracts certain manufacturing transactions within cost of sales denominated in Singapore dollars.

The principles regulating the hedging strategy for derivatives designated as cash flow hedge are established as follows: (i) for R&D and corporate costs, up to 80% of the total forecasted transactions; (ii) for manufacturing costs, up to 70% of the total forecasted transactions. In order to follow a dynamic hedge strategy, the Company may change the percentage of the designated hedged item within the limit of 100% of the forecasted transaction. The maximum length of time over which the Company could hedge its exposure to the variability of cash flows for forecasted transactions is 24 months.

For the year ended December 31, 2016, the Company recorded an increase in cost of sales of \$7 million and an increase in operating expenses of \$2 million, related to the realized losses incurred on such hedged transactions. For the year ended December 31, 2015, the Company recorded an increase in cost of sales of \$105 million and an increase in operating expenses of \$65 million, related to the realized losses incurred on such hedged transactions. For the year ended December 31, 2014, the Company recorded an increase in cost of sales of \$1 million and an increase in operating expenses of \$1 million, related to the realized losses incurred on such hedged transactions. No significant ineffective portion of the hedge was recorded on the line "Other income and expenses, net" of the consolidated statements of income for the years ended December 31, 2016, 2015 and 2014.

The notional amount of foreign currency forward contracts and currency options, including collars, designated as cash flow hedge totaled \$1,370 million, \$1,449 million and \$1,386 million at December 31, 2016, 2015 and 2014, respectively. The forecasted transactions hedged at December 31, 2016 were determined to have a high probability of occurring.

As of December 31, 2016, \$47 million of deferred losses on derivative instruments included in "Accumulated other comprehensive income (loss)" were expected to be reclassified as earnings during the next 12 months based

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on the monthly forecasted research and development expenses, corporate costs and semi-finished manufacturing costs. No amount was reclassified as "Other income and expenses, net" into the consolidated statement of income from "Accumulated other comprehensive income (loss)" in the consolidated statement of equity. Foreign currency forward contracts, currency options and collars designated as cash flow hedge outstanding as of December 31, 2016 have remaining terms of 4 days to 19 months, maturing on average after 153 days.

As at December 31, 2016, the Company had the following outstanding derivative instruments that were entered into to hedge Euro-denominated and Singapore dollar-denominated forecasted transactions:

In millions of Euros	Notional amount for hedge on forecasted R&D and other operating expenses	Notional amount for hedge on forecasted manufacturing costs
Forward contracts	237	347
Currency collars	248	387

In millions of Singapore dollars	Notional amount for hedge on forecasted R&D and other operating expenses	Notional amount for hedge on forecasted manufacturing costs
Forward contracts	—	123

Cash flow and fair value interest rate risk

The Company's interest rate risk arises from long-term borrowings. Borrowings issued at variable rates expose the Company to cash flow interest rate risk. Borrowings issued at fixed rates expose the Company to fair value interest rate risk.

The Company analyses its interest rate exposure on a dynamic basis. Various scenarios are simulated taking into consideration refinancing, renewal of existing positions, alternative financing and hedging. The Company invests primarily on a short-term basis and as such the Company's liquidity is invested in floating interest rate instruments. As a consequence the Company is exposed to interest rate risk due to potential mismatch between the return on its short term floating interest rate investments and the portion of its long term debt issued at fixed rate.

Price risk

As part of its ongoing investing activities, the Company may be exposed to equity security price risk for investments in public entities. In order to hedge the exposure to this market risk, the Company may enter into certain derivative hedging transactions.

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Information on fair value of derivative instruments and their location in the consolidated balance sheets as at December 31, 2016 and December 31, 2015 is presented in the table below:

	As at December 31, 2016		As at December 31, 2015	
	Balance sheet location	Fair value	Balance sheet location	Fair value
Asset Derivatives				
Derivatives designated as a hedge:				
Foreign exchange forward contracts	Other current assets	1	Other current assets	3
Currency collars	Other non-current assets	–	Other non-current assets	1
Currency collars	Other current assets	–	Other current assets	1
Total derivatives designated as a hedge		1		5
Derivatives not designated as a hedge:				
Foreign exchange forward contracts	Other current assets	1	Other current assets	1
Total derivatives not designated as a hedge:		1		1
Total Derivatives		2		6
Liability Derivatives				
Derivatives designated as a hedge:				
Foreign exchange forward contracts	Other payables and accrued liabilities	(31)	Other payables and accrued liabilities	(18)
Currency collars	Other long-term liabilities	(1)	Other long-term liabilities	–
Currency collars	Other payables and accrued liabilities	(11)	Other payables and accrued liabilities	(6)
Total derivatives designated as a hedge		(43)		(24)
Derivatives not designated as a hedge:				
Foreign exchange forward contracts	Other payables and accrued liabilities	(2)	Other payables and accrued liabilities	(1)
Total derivatives not designated as a hedge:		(2)		(1)
Total Derivatives		(45)		(25)

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The effect on the consolidated statements of income for the year ended December 31, 2016 and December 31, 2015 and on the "Accumulated other comprehensive income (loss)" ("AOCI") as reported in the statements of equity as at December 31, 2016 and December 31, 2015 of derivative instruments designated as cash flow hedge is presented in the table below:

	Gain (loss) deferred in OCI on derivative		Location of gain (loss) reclassified from OCI into earnings	Gain (loss) reclassified from OCI into earnings	
	December 31, 2016	December 31, 2015		December 31, 2016	December 31, 2015
Foreign exchange forward contracts	(24)	(14)	Cost of sales	(5)	(63)
Foreign exchange forward contracts	(2)	(1)	Selling, general and administrative	—	(8)
Foreign exchange forward contracts	(8)	(4)	Research and development	(1)	(29)
Currency collars	(8)	(3)	Cost of sales	(2)	(42)
Currency collars	(1)	—	Selling, general and administrative	—	(6)
Currency collars	(4)	(1)	Research and development	(1)	(22)
Total	(47)	(23)		(9)	(170)

No significant ineffective portion of the cash flow hedge relationships was recorded in earnings for the years ended December 31, 2016 and December 31, 2015. No amount was excluded from effectiveness measurement on foreign exchange forward contracts and collars.

The effect on the consolidated statements of income for the year ended December 31, 2016 and December 31, 2015 of derivative instruments not designated as a hedge is presented in the table below:

	Location of gain recognized in earnings	Gain recognized in earnings	
		December 31, 2016	December 31, 2015
Foreign exchange forward contracts	Other income and expenses, net	(3)	11
Total		(3)	11

The Company did not enter into any derivative containing significant credit-risk-related contingent features.

The Company entered into currency collars as combinations of two options, which are reported, for accounting purposes, on a net basis. The fair value of these collars represented as at December 31, 2016 liabilities totalling \$12 million (a gross amount of \$0 million recognized assets offset with a liability of \$12 million). In addition, the Company entered into other derivative instruments, primarily forward contracts, which are governed by standard International Swaps and Derivatives Association ("ISDA") agreements, which are not offset in the statement of financial position, and representing total assets of \$2 million and liabilities of \$33 million as at December 31, 2016.

Credit risk

The Company selects banks and/or financial institutions that operate with the group based on the criteria of long-term rating from at least two major Rating Agencies and keeping a maximum outstanding amount per instrument with each bank not to exceed 20% of the total.

The Company monitors the creditworthiness of its customers to which it grants credit terms in the normal course of business. If certain customers are independently rated, these ratings are used. Otherwise, if there is no independent rating, risk control assesses the credit quality of the customer, taking into account its financial position, past experience and other factors. Individual risk limits are set based on internal and external ratings in accordance with limits set by management. The utilization of credit limits is regularly monitored. Sales to customers are primarily settled in cash. At December 31, 2016 and 2015, no customer represented more than 10% of trade accounts receivable, net. Any remaining concentrations of credit risk with respect to trade receivables are limited due to the large number of customers and their dispersion across many geographic areas.

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Liquidity risk

Prudent liquidity risk management includes maintaining sufficient cash equivalents and marketable securities, the availability of funding from committed credit facilities and the ability to close out market positions. The Company's objective is to maintain a significant cash position and a low debt-to-equity ratio, which ensure adequate financial flexibility. Liquidity management policy is to finance the Company's investments with net cash provided from operating activities.

Management monitors rolling forecasts of the Company's liquidity reserve on the basis of expected cash flows.

24.2 Capital risk management

The Company's objectives when managing capital are to safeguard the Company's ability to continue as a going concern in order to create value for shareholders and benefits and returns for other stakeholders, as to maintain an optimal capital structure. In order to maintain or adjust the capital structure, the Company may review the amount of dividends paid to shareholders, return capital to shareholders, or issue new shares.

Consistent with others in the industry, the Company monitors capital on the basis of the net debt-to-equity ratio. This ratio is calculated as the net financial position of the Company, defined as the difference between total cash position (cash and cash equivalents, marketable securities – current and non-current – and current restricted cash, if any) net of total financial debt (bank overdrafts, if any, short-term borrowings and current portion of long-term debt as well as long-term debt), divided by total parent company stockholders' equity.

24.3 Fair value measurement

The fair value of financial instruments traded in active markets is based on quoted market prices at the balance sheet date. The quoted market price used for financial assets held by the Company is the bid price. If the market for a financial asset is not active and if no observable market price is obtainable, the Company measures fair value by using significant assumptions and estimates. When measuring fair value, the Company makes maximum use of market inputs and minimizes the use of unobservable inputs.

The table below details financial assets (liabilities) measured at fair value on a recurring basis as at December 31, 2016:

	December 31, 2016	Fair Value Measurements using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Marketable securities – U.S. Treasury Bonds	335	335	–	–
Equity securities classified as available-for-sale	11	11	–	–
Equity securities classified as held-for-trading	8	8	–	–
Derivative instruments designated as cash flow hedge	1	–	1	–
Derivative instruments designated as cash flow hedge	(43)	–	(43)	–
Derivative instruments not designated as cash flow hedge	1	–	1	–
Derivative instruments not designated as cash flow hedge	(2)	–	(2)	–
Contingent consideration on business combinations	(12)	–	–	(12)
Total	299	354	(43)	(12)

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The table below details financial assets (liabilities) measured at fair value on a recurring basis as at December 31, 2015:

	December 31, 2015	Fair Value Measurements using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Marketable securities - U.S. Treasury Bonds	335	335	-	-
Equity securities classified as available-for-sale	11	11	-	-
Equity securities classified as held-for-trading	8	8	-	-
Derivative instruments designated as cash flow hedge	5	-	5	-
Derivative instruments designated as cash flow hedge	(24)	-	(24)	-
Derivative instruments not designated as cash flow hedge	1	-	1	-
Derivative instruments not designated as cash flow hedge	(1)	-	(1)	-
Total	335	354	(19)	-

For assets (liabilities) measured at fair value on a recurring basis using significant unobservable inputs (Level 3), the reconciliation between January 1, 2016 and December 31, 2016 is presented as follows:

	Fair Value Measurements using Significant Unobservable Inputs (Level 3)
January 1, 2016	-
Contingent consideration on business combination	(12)
December 31, 2016	(12)
Amount of total losses for the period included in earnings attributable to assets still held at the reporting date	-

On July 28, 2016, the Company completed a transaction to acquire ams' (SIX: AMS) assets and workforce related to Near-Field Communication (NFC) and Radio-frequency identification (RFID) Reader business, as described in Note 7. The purchase price consideration includes a cash payment of \$78 million and the acquisition-date fair value of a sales earn-out of \$12 million, which in any case will not exceed \$37 million. The contingent consideration was measured at fair value as at December 31, 2016 based on a weighted-average probability projections of sales, discounted using a 1.8% cost of debt, which is the discount rate applicable to the transaction.

No asset was measured at fair value on a recurring basis using significant unobservable inputs (Level 3) as at December 31, 2015.

The liability component of the convertible bonds issued on July 3, 2014 was measured at initial recognition at fair value based on a discount rate adjustment technique (income approach), which corresponds to a Level 3 fair value hierarchy measurement. The fair value of the liability component at initial recognition totaled \$878 million and was estimated by calculating the present value of cash flows using a discount rate of 2.40% and 3.22% (including 1% per annum nominal interest), respectively, on each tranche, as the market rates for similar instruments with no conversion rights. The liability component of the convertible bonds was subsequently reported at amortized cost. The liability component will be accreted to par value over the expected life of the instrument, five years and seven years respectively for each tranche.

The assets held for sale are reported at the lower of net book value and fair value less costs to sell. For fair value measurements using significant unobservable inputs (Level 3), fair value is estimated based on the estimated price that a market participant would pay on a sale transaction for these assets.

The business combination concluded on July 28, 2016 resulted in the recognition at fair value on a non-recurring basis upon acquisition of property, plant and equipment amounting to \$2 million, technology amounting to \$6 million, in-process R&D amounting to \$40 million and a \$42 million goodwill. The fair value of the

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recognized intangible assets was determined using the Multi-period Excess Earnings Method ("MEEM")-approach combined with a Monte Carlo simulation of the acquired business to estimate the probable outcomes using a given number of iteration of the projections, which corresponds to a Level 3 fair value hierarchy.

The Company evaluated in 2016 and 2015 for impairment the aggregate carrying amount of cost-method investments. No impairment charge was recorded on these investments in 2016 and in 2015. Following identified changes in circumstances in 2014 evidencing that there may have been a significant adverse effect on the fair value of certain cost-method investments, \$3 million of the aggregate carrying amount of these investments was evaluated for impairment in 2014, which generated an other-than-temporary impairment charge of \$3 million, reported on the line "Gain (loss) on financial instruments, net" on the consolidated statement of income for the year ended December 31, 2014.

The following table includes additional fair value information on financial assets and liabilities as at December 31, 2016 and 2015:

	2016			2015	
	Level	Carrying Amount	Estimated Fair Value	Carrying Amount	Estimated Fair Value
Cash equivalents(1)	1	960	960	1,099	1,099
Long-term debt					
- Bank loans (including current portion)	2	525	525	708	708
- Senior unsecured convertible bonds(2)	1	926	1,127	904	960

(1) Cash equivalents primarily correspond to deposits at call with banks.

(2) The carrying amount of the senior unsecured convertible bonds as reported above corresponds to the liability component only, since, at initial recognition, an amount of \$121 million was recorded directly in shareholders' equity as the value of the equity instrument embedded in the issued convertible bonds.

No securities were in an unrealized loss position as at December 31, 2016 and December 31, 2015.

The methodologies used to estimate fair value are as follows:

Debt securities classified as available-for-sale

The fair value of these debt securities is estimated based upon quoted market prices for identical instruments.

Foreign exchange forward contracts, currency options and collars

The fair value of these instruments is estimated based upon quoted market prices for similar instruments.

Marketable securities classified as available-for-sale

The fair values of these instruments are estimated based upon market prices for identical instruments.

Equity securities classified as available-for-sale

The fair values of these instruments are estimated based upon market prices for identical instruments.

Trading equity securities

The fair value of these instruments is estimated based upon quoted market prices for the same instruments.

Equity securities carried at cost

The non-recurring fair value measurement is based on the valuation of the underlying investments on a new round of third party financing or upon liquidation.

Long-term debt and current portion of long-term debt

The fair value of bank loans is determined by estimating future cash flows on a borrowing-by-borrowing basis and discounting these future cash flows using the Company's incremental borrowing rates for similar types of borrowing arrangements.

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The senior unsecured convertible bonds have been trading on the open market segment of the Frankfurt Stock Exchange since issuance on July 3, 2014. The fair value of these instruments is the observable price of the bonds on that market.

Cash and cash equivalents, accounts receivable, short-term borrowings, and accounts payable

The carrying amounts reflected in the consolidated financial statements are reasonable estimates of fair value due to the relatively short period of time between the origination of the instruments and their expected realization.

25. RELATED PARTY TRANSACTIONS

Transactions with significant shareholders, their affiliates and other related parties were as follows:

	December 31, 2016	December 31, 2015	December 31, 2014
Sales & other services	1	7	24
Other purchases	1	65	24
Accounts receivable	7	8	22
Accounts payable	51	61	56

For the years ended December 31, 2016, 2015 and 2014, the related party transactions were primarily with significant shareholders of the Company, or their subsidiaries and companies in which management of the Company perform similar policymaking functions. These include, but are not limited to: MicroOLED, Technicolor and Incard do Brazil. The related party transactions presented in the table above also include transactions between the Company and its equity-method investments as listed in Note 11.

The Company made no contribution for the year ended December 31, 2016 to the ST Foundation, a non-profit organization established to deliver and coordinate independent programs in line with its mission. For the years ended December 31, 2015 and December 31, 2014 this contribution amounted to \$0.5 million. Certain members of the Foundation's Board are senior members of the Company's management.

26. SEGMENT INFORMATION

The Company operates in two business areas: Semiconductors and Subsystems.

In the Semiconductors business area, the Company designs, develops, manufactures and markets a broad range of products, including discrete and standard commodity components, application-specific integrated circuits ("ASICs"), full custom devices and semi-custom devices and application-specific standard products ("ASSPs") for analog, digital, and mixed-signal applications. In addition, the Company further participates in the manufacturing value chain of Smartcard products, which includes the production and sale of both silicon chips and Smartcards.

During the first quarter of 2016, the internal organization changed to align with the Company's strategic focus on Smart Driving and on Internet of Things applications. Comparative numbers were restated accordingly.

The Company's reportable segments are as follows:

- Automotive and Discrete Group (ADG), comprised of all dedicated automotive ICs (both digital and analog), and discrete and power transistor products.
- Analog and MEMS Group (AMG), comprised of low-power high-end analog ICs (both custom and general purpose) for all markets, smart power products for Industrial, Computer and Consumer markets, Touch Screen Controllers, Low Power Connectivity solutions (both wireline and wireless) for IoT, power conversion products, metering solutions for Smart Grid and all MEMS products, either sensors or actuators.
- Microcontrollers and Digital ICs Group (MDG), comprised of general purpose and secure microcontrollers, EEPROM memories, and digital ASICs as well as restructured businesses such as Set-Top-box ICs or former ST-Ericsson products.

"Others" includes all the financial values related to the Imaging Product Division (including the sensors and modules from our Time of Flight technology), Subsystems and other products, as well as items not allocated to

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the segments such as impairment, restructuring charges and other related closure costs, unused capacity charges, strategic or special research and development programs and other minor unallocated expenses such as: certain corporate-level operating expenses, patent claims and litigation, and other costs that are not allocated to the segments.

In the Subsystems business area, the Company designs, develops, manufactures and markets subsystems and modules for the telecommunications, automotive and industrial markets including mobile phone accessories, battery chargers, ISDN power supplies and in-vehicle equipment for electronic toll payment. Based on its immateriality to the business as a whole, the Subsystems business area does not meet the requirements for a reportable segment as defined in the U.S. GAAP guidance.

For the computation of the segments' internal financial measurements, the Company uses certain internal rules of allocation for the costs not directly chargeable to the segments, including cost of sales, selling, general and administrative expenses and a part of research and development expenses. In compliance with the Company's internal policies, certain costs are not allocated to the segments, including impairment, restructuring charges and other related closure costs, unused capacity charges, phase-out and start-up costs of certain manufacturing facilities, certain one-time corporate items, strategic and special research and development programs or other corporate-sponsored initiatives, including certain corporate-level operating expenses and certain other miscellaneous charges. In addition, depreciation and amortization expense is part of the manufacturing costs allocated to the segments and is neither identified as part of the inventory variation nor as part of the unused capacity charges; therefore, it cannot be isolated in the costs of goods sold. Finally, R&D grants are allocated to the segments proportionally to the incurred R&D expenses on the sponsored projects.

Wafer costs are allocated to the segments based on actual cost. From time to time, with respect to specific technologies, wafer costs are allocated to segments based on market price.

The following tables present the Company's consolidated net revenues and consolidated operating income by reportable segment.

	December 31, 2016	December 31, 2015	December 31, 2014
Automotive and Discrete Group (ADG)	2,813	2,731	2,897
Analog and MEMS Group (AMG)	1,584	1,671	1,877
Microcontrollers and Digital ICs Group (MDG)	2,285	2,292	2,377
Others	291	203	253
Total consolidated net revenues	6,973	6,897	7,404

Operating income by reportable segment:

	December 31, 2016	December 31, 2015	December 31, 2014
Automotive and Discrete Group (ADG)	211	194	279
Analog and MEMS Group (AMG)	67	109	168
Microcontrollers and Digital ICs Group (MDG)	108	29	(14)
Total operating income of product segments	386	332	433
Others(1)	(172)	(223)	(265)
Total consolidated operating income	214	109	168

(1) Operating result of "Others" includes operating earnings of the Imaging Product Division (including the sensors and modules from our Time of Flight technology), Subsystems and other products, as well as items not allocated to the segments, such as impairment, restructuring charges and other related closure costs, unused capacity charges, strategic or special research and development programs and other minor unallocated expenses such as: certain corporate-level operating expenses, patent claims and litigation, and other costs that are not allocated to the segments.

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Reconciliation of operating income of segments to the total operating income:

	December 31, 2016	December 31, 2015	December 31, 2014
Total operating income of segments	386	332	433
Impairment, restructuring charges and other related closure costs	(93)	(65)	(90)
Unallocated manufacturing results	(33)	(69)	(45)
Operating results of other businesses	(21)	(82)	(100)
Strategic and other research and development programs and other non-allocated provisions(1)	(25)	(7)	(30)
Total operating loss Others	(172)	(223)	(265)
Total consolidated operating income (loss)	214	109	168

(1) Includes unallocated income and expenses such as certain corporate-level operating expenses and other costs/income that are not allocated to the product segments.

The following is a summary of operations by entities located within the indicated geographic areas for 2016, 2015 and 2014. Net revenues represent sales to third parties from the country in which each entity is located. Long-lived assets consist of property, plant and equipment, net (PP&E, net). A significant portion of property, plant and equipment expenditures is attributable to front-end and back-end facilities, located in the different countries in which the Company operates. As such, the Company mainly allocates capital spending resources according to geographic areas rather than along product segment areas.

Net revenues

	December 31, 2016	December 31, 2015	December 31, 2014
The Netherlands	1,751	1,667	1,905
France	134	169	200
Italy	58	58	61
USA	990	1,039	1,003
Singapore	3,699	3,606	3,831
Japan	323	332	368
Other countries	18	26	36
Total	6,973	6,897	7,404

Property, plant and equipment

	December 31, 2016	December 31, 2015
The Netherlands	462	383
France	520	584
Italy	445	496
Other European countries	84	108
USA	6	8
Singapore	277	276
Malaysia	166	170
Other countries	327	296
Total	2,287	2,321

STMICROELECTRONICS N.V.
VALUATION AND QUALIFYING ACCOUNTS

Valuation and qualifying accounts deducted from the related asset accounts	Balance at beginning of period	Translation adjustment	Charged to costs and expenses	Additions/ (Deductions)	Balance at end of period
(Currency – millions of U.S. dollars)					
2016					
Accounts Receivable	7	–	3	2	12
Deferred Tax Assets	1,585	(4)	13	(16)	1,578
2015					
Accounts Receivable	8	–	2	(3)	7
Deferred Tax Assets	1,607	(28)	24	(18)	1,585
2014					
Accounts Receivable	9	–	1	(2)	8
Deferred Tax Assets	1,454	(30)	201	(18)	1,607