ams

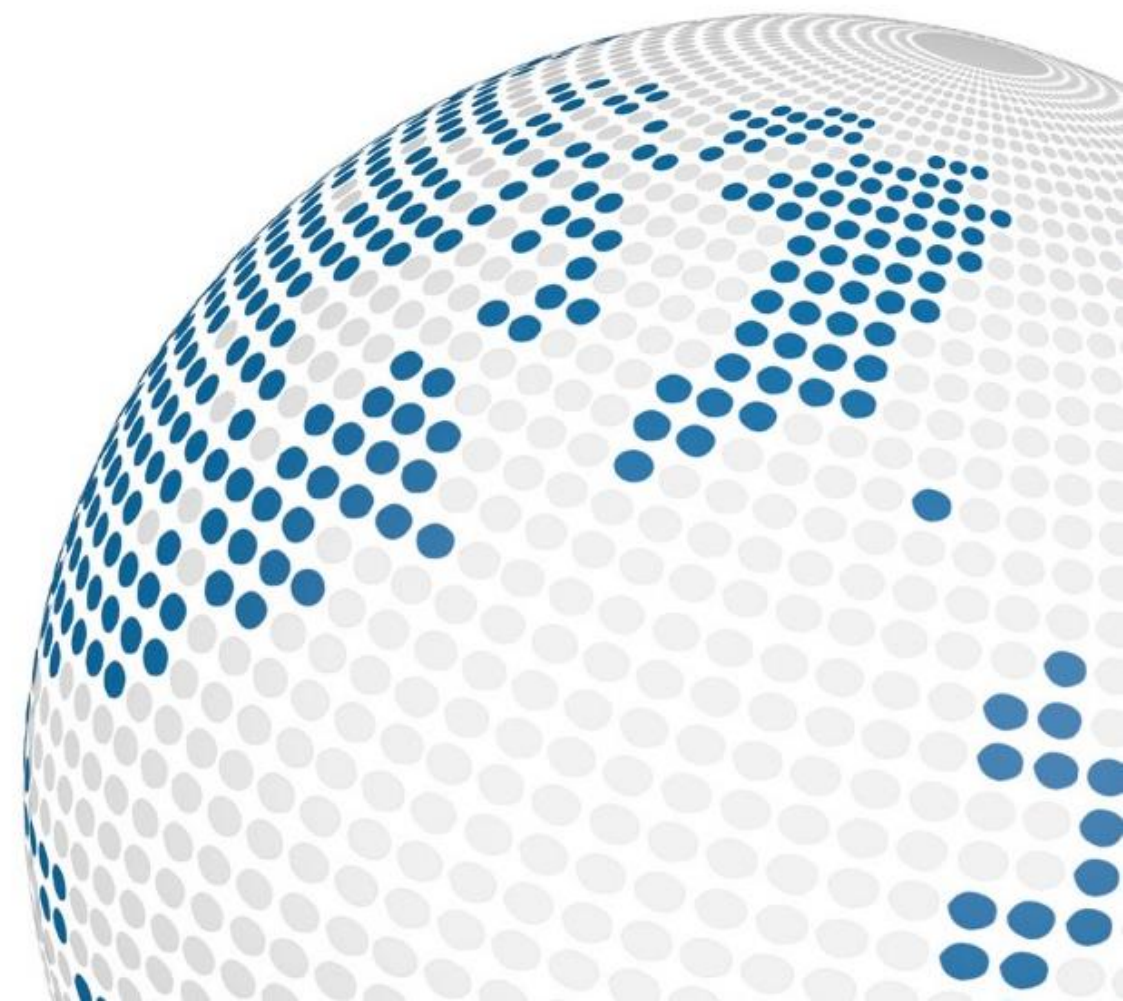## Full year + fourth quarter results 2017

Alexander Everke, CEO

Michael Wachsler-Markowitsch, CFO

Moritz M. Gmeiner, Head of IR

February 2018

ams at a glance

Sensing is life.

Our business

- Focused on high-performance sensor solutions
- Sensor solutions, sensor ICs, interfaces, related software
- Small, low-power, highest sensitivity, multi-sensor integration
- Best-in-class solutions for leading OEMs

Our end markets

- Consumer & Communications (C&C) – FY 2017 69% of revenues
- Automotive, Industrial, Medical (AIM) – FY 2017 31% of revenues

By the numbers

- 1,000+ engineers
- 21 design centers, 3 manufacturing locations
- 35+ years of design and manufacturing know-how
- 11,000+ employees worldwide
- 8,000+ customers

Sensing enables life

Sensors – an integral part of the digital transformation

Augmented reality

Industrial IoT

Personal health

Smart home & building

Autonomous driving

Human/machine interface

Infrastructure automation

ams strategy

Build the global leader in sensor solutions

True leadership in four sensor areas

- Optical
- Imaging
- Environmental
- Audio

Best-in-class performance per sensor area and in multi-sensor application solutions

- Miniaturization & integration
    - Multi-sensor modules
    - Monolithic integration
- Sensor algorithms and sensor fusion software
- Application software for differentiating end-user experiences

Diversified business with balanced application and customer portfolio

- Long-term target mix of 60/40 split C&C/AIM
- Build broader customer base in each application
- Establish strong distribution channel

Clear financial target model for profitable growth

- Revenue growth target (CAGR) 2016-2019 of now 60%
- EBIT margin target (adjusted) of 30% from 2019 onwards

Multi-sensor solutions and sensor fusion

ams focus

Optical & image sensing

- 3D sensing
- VCSEL illumination
- Light analysis/proximity
- Spectral sensing
- Visible image, NIR

Optical multi-sensing package/hub

Environmental & audio sensing

- Gas/particle
- Temperature
- Rel. humidity
- Pressure
- Microphone audio

Open cavity multi-sensing package/hub

Motion sensing

- Accelerometer
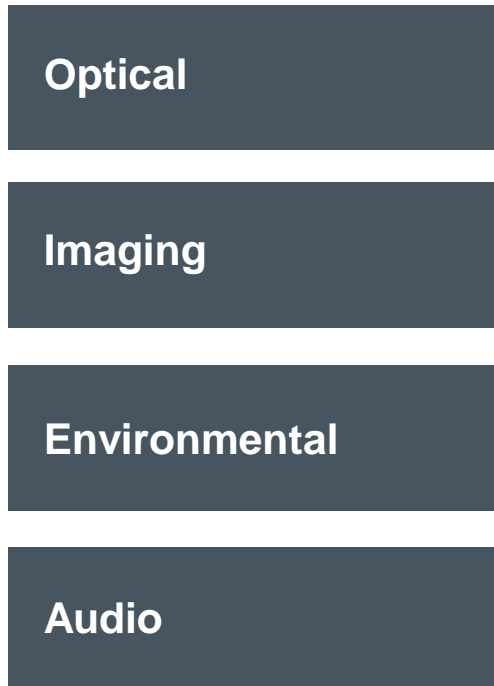- Gyroscope
- Magnetometer
- IMU (Inertial Measurement Unit)
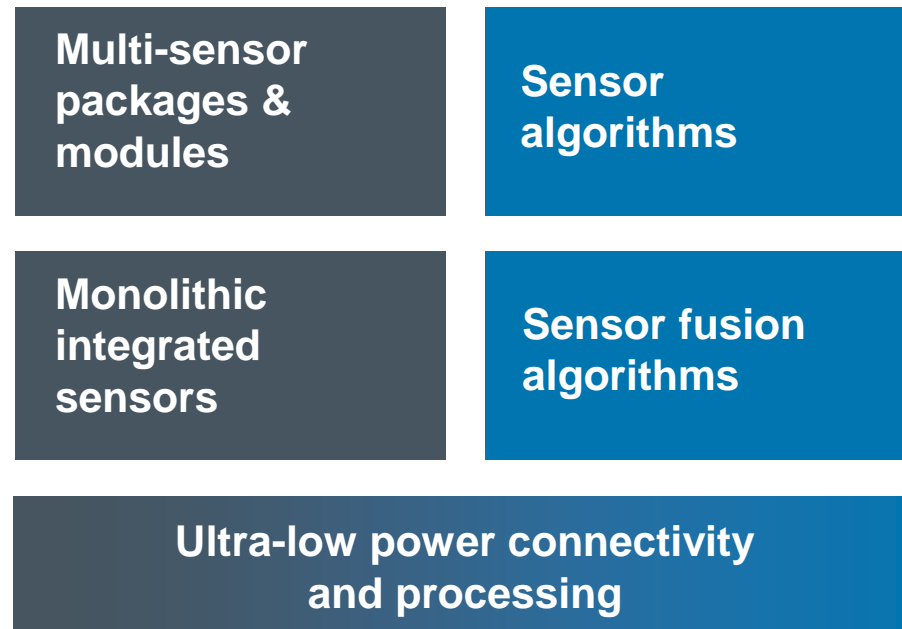
Closed package multi-sensing hub

High performance solutions leveraging hardware, algorithms, software
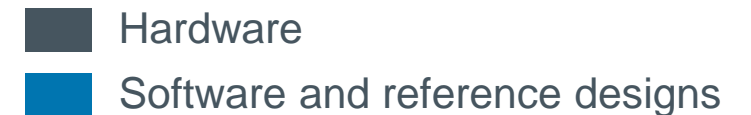
ams strategic value chain

Sensor ICs

Optical

Imaging

Environmental

Audio

Sensor solutions

Multi-sensor packages & modules

Sensor algorithms

Monolithic integrated sensors

Sensor fusion algorithms

Ultra-low power connectivity and processing

Application solutions

Application software to deliver end-user experiences

Hardware

Software and reference designs

2017 – a record year building our growth platform

Exceptional growth driven by high value smartphone ramps in second half

- Record revenues > EUR 1bn (93% growth year-on-year), record EBIT EUR 169m (74% growth year-on-year)

Focused strategy around leadership in optical, imaging, environmental, audio sensing

- Industry leader with high differentiation, clear #1 in optical sensing, leadership positions across other sensing areas

Leadership position in major growth market 3D sensing

- Unmatched system know-how + solution coverage in key technologies, leading VCSEL, WLO, DOE, software

Acquisition of VCSEL technology leader Princeton Optronics for 3D sensing

- Significant strategic expansion in 3D sensing market, internal manufacturing from 2019 drives differentiation

Unprecedented production ramp-up for new optical technologies

- Major capex investments in Singapore, added over 8,000 FTE to support rapid growth in 3D and optical sensing

Unique growth platform established, driving continued mid-term and long-term growth

- Innovation focus + acquisitions/partnerships drive growth pipeline: 60% CAGR 2016-19, long-term growth visible

Winning portfolio from focused strategy

Goal: True leadership in four sensing areas

Other lines

Position
Flow
Wireless

Optical sensors	Imaging sensors	Environment. sensors	Audio sensors	Other sensors
• 3D sensing incl. VCSEL • Light analysis/prox. • Spectral sensing	• High perf. imaging • Micro cameras • Medical imaging	• Gas / particle • Temp./rel. humidity • Pressure • Multi-sensor	• MEMS microph. ICs • ANC noise canceling • ACI	• Position sensors • Flow metering • Ultra-low power wireless sensors

M&A accelerating strategy implementation

- Heptagon
- Princeton Optronics
- KeyLemon
- MAZeT

- CMOSIS
- Heptagon

- CCMOSS
- NXP sensors

- Incus

3D sensing leadership – expertise meets growth
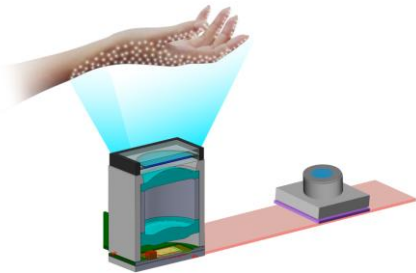
**Leading solution expertise across 3D sensing technologies**

- Unmatched portfolio of optical technologies + solution elements:
    - Highly differentiated VCSEL/VCSEL arrays
    - Leading WLO capabilities, high quality DOE, optical path
    - Algorithms and software layers
    - System and volume manufacturing expertise
- End-to-end system-level integration know-how:
  from components to algorithms and optimized applications
- Active in Structured Light (SL) and Time-of-flight (ToF) for broad 3D market play
- Optimizing user experience, BOM, geometry and software integration simultaneously
- Software focus + partnerships (Sunny Opotech) for tailored ecosystem coverage
- ams enabled high volume 3D sensing deployment in mobile platform in 2017

Megatrend offers multiple enormous market opportunities

- Mobile and consumer market adopting rapidly, very strong multi-year growth cycle:
  Facial identification/authentication, personalization, augmented reality (AR)
- Very large automotive market clearly visible, large scale Industrial opportunity emerging
    - Autonomous driving, 3D LIDAR, driver recognition – major 3D LIDAR illumination win
    - Machine vision/inspection, automation, robots, drones

First large design-win at Asian smart-phone OEM, major automotive 3D LIDAR design

3D sensing leadership – VCSEL, KeyLemon
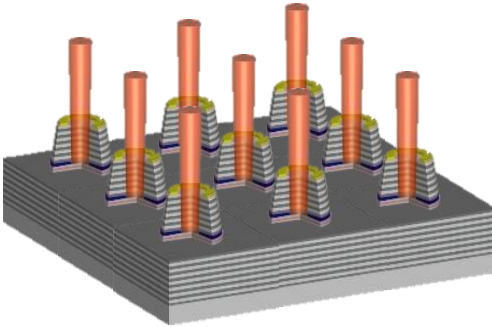
Superior VCSEL technology as key differentiator

- Leadership position in high power VCSEL / high count VCSEL arrays for 3D
  - Smallest pitch   higher resolution, lower system cost
  - Leading power efficiency   up to 63% vs. typical 45-50% quantum efficiency
  - Best beam quality   very narrow beam divergence
  - High power   from mW to W to 100+W
- Full portfolio of tailored solutions for SL + ToF 3D illumination needs, strong design activities
- Automotive LIDAR opportunity advancing rapidly given outstanding VCSEL performance
- Internal VCSEL manufacturing drives further differentiation:
  capacity investment for 6" (2,000 wspm) in volume 2019E, further increase under evaluation

Acquisition of KeyLemon, leader in facial recognition software

- Well-known in industry, best-in-class IP portfolio for 3D face recognition
- Robust + secure implementation of smartphone 3D face recognition already available
- Leveraging IP into 3D solutions for consumer + other applications, first solutions in 2018E
- Accelerating time-to-market for OEMs to add high quality 3D face recognition into devices
- Located in Switzerland, transaction consideration undisclosed

Optical sensing

**Worldwide leader in light sensing solutions**

- Clear #1 in optical sensing
- Leadership in sensors, optical path, illumination
- High performance optical solutions for Top 15 smartphone OEMs
- Industry-leading 3D sensing expertise
- Power-efficient VCSEL technology for 3D and optical sensing
- True Color spectral sensing for highest performance display management: "paper-like" viewing experience
- Color ALS, ultra-small proximity modules

New optical applications in spectral sensing

- Emerging growth market besides 3D for new device sensing applications
- Color matching for cosmetics, skin-tone measuring
- Food quality analysis, e.g. fruit ripeness/quality
- Color/spectral sensing for Industrial IoT, smart LED lighting

Leadership and innovation in 3D, optical and spectral sensing

Image sensing
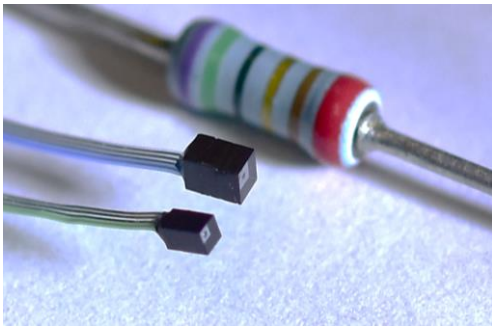
True leader in specific industrial applications + medical imaging

- High value global shutter CMOS imaging solutions for industrial market: high speed machine vision, inspection
- NanEye miniature camera technology for medical (endoscopy) and industrial markets
- New generation NanEye solution: low cost, high performance, ultra-small footprint
- Global leadership position in medical imaging sensor solutions
- High performance, cost optimized systems for computed tomography (CT) and digital X-ray
- Clearer images at lower radiation dose in 3D-CT and digital X-ray

Driving innovation in new areas

- Curved sensors for improved image quality and optical system simplification
- Highest level of opto-electrical performance for micro-camera modules
- Excellently positioned to capture the optical-imaging convergence, e.g. near IR (NIR), hyper-spectral imaging (HSI)

Leadership and innovation in new industrial applications and medical imaging

Audio sensing

ANC (active noise cancellation)

- Best-in-class high performance analog noise reduction
- Clear leader in wired/wireless accessory market
- Low power + small footprint
- Significantly higher audio quality
- Strong market momentum, new launches:
  Nuheara wireless earphones, Korean smartphone OEM accessory earphones
- Exclusive low-power ACI interface enables battery-less ANC designs,
  market interest to add sensing functions

MEMS microphone interface ICs

- Market leader in growing high volume market
- Growth in home assistants (multi-microphone devices) adding significant demand
- Leading position and broad portfolio for low noise solutions and tight integration
- Strong customer partnership focused on attractive segments
- Increased content value microphone and pressure/temperature sensing integration
  in development

Strong growth in MEMS mic ICs, growing ANC earphones business

Environmental (including gas) sensing

Technology leader in environmental / gas sensing

- Unique CMOS-based portfolio for low power, high volume, small form factor
    - MOX and infrared gas / presence detection
    - Relative humidity, pressure, temperature
- Broad range of emerging applications in mobile, home/building automation (HABA), Industrial IoT and other AIM markets

Uniquely positioned for multi-sensor modules and monolithic multi-sensor integration

- Integration roadmap for related sensor modalities driving low power + smallest size
- Broad portfolio of relevant sensor technologies, algorithms and application software
- Highly differentiated new pressure sensor opens up new application markets
- Multi-sensor technology gas and particle sensor roadmap, targeting early stage, fast-growing HABA, industrial and infrastructure markets

Growth markets in HABA and Industrial IoT, adding consumer opportunities

Scalable manufacturing model

Differentiating manufacturing in-house, outsourcing standard processes

Internal front-end wafer manufacturing, Austria

- 200mm, 190+k wafers p.a.
- CMOS / specialty analog down to 180nm
- High volume optical filter deposition

**Internal optical production and packaging
+ future VCSEL manufacturing, Singapore**

- Technology leader in high end optical systems
- WLO and optical filter production, optical packaging
- Customer revenue pipeline drives additional expansion investments in 2018
- Investment for internal VCSEL manufacturing line:
  High differentiation, on track for mass production availability 2019

Manufacturing partnerships for scalability and flexibility

- High volume wafer production (TSMC, UMC), standard and semi-custom packaging
- Partnerships with key equipment suppliers
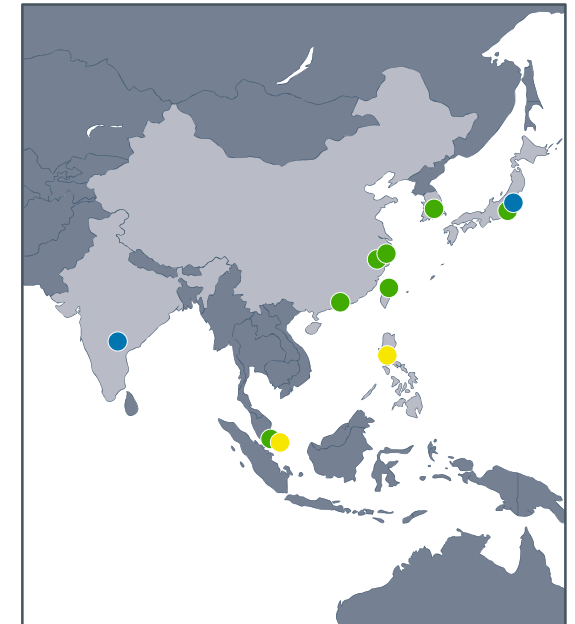
In-house test, Austria / Philippines

Further expansion in Singapore for 2018/19 needs, VCSEL investment on track

Global network

ams
Sensing is life.

- 🔴 Headquarters
- 🔵 Design centers
- 🟡 Manufacturing/Test
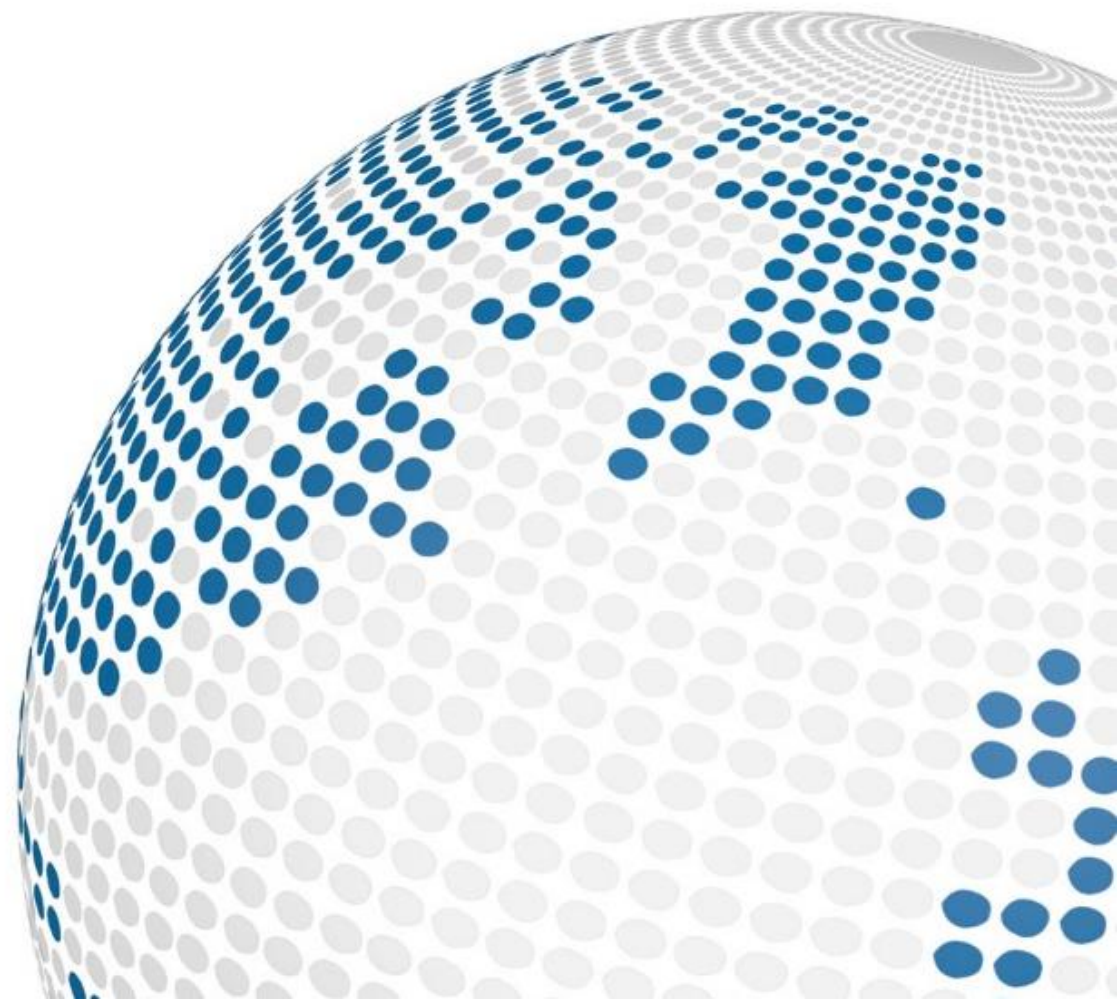- 🟢 Sales/customer support locations
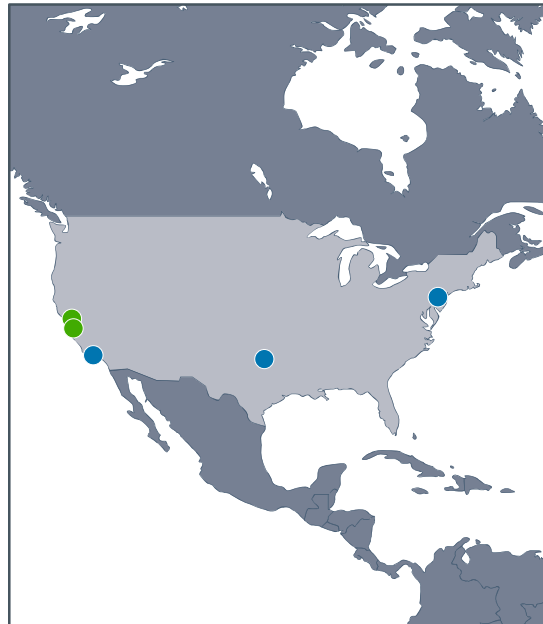
Americas
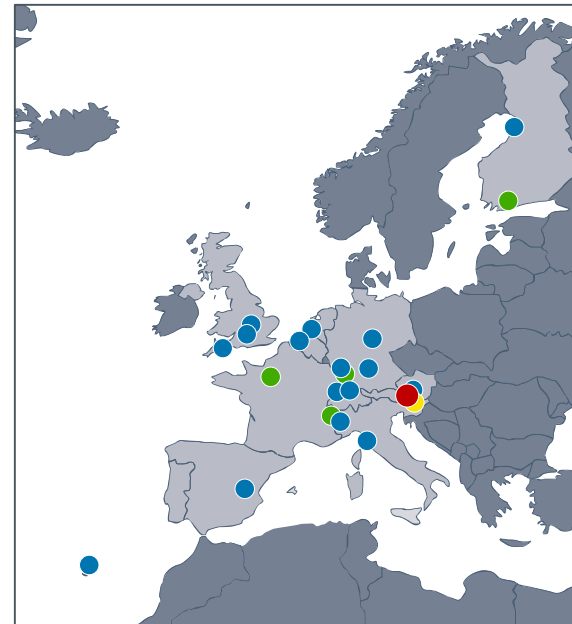
Europe

Asia

- **21 design centers**
  Austria, Switzerland (2), Italy (2), Spain, Germany (4), Belgium, UK (2), Netherlands, Portugal, Finland, USA (3), India, Japan
- **Manufacturing locations**
  Austria, Singapore
- **Test center**
  Philippines

Financial results

Key figures

EURm

		2017	2016	Q4 2017	Q4 2016
Total revenues		1,063.8 +93.4%	549.9	470.3 +252.0%	133.6
Gross margin	(adjusted) [1]	43%	55%	44%	52%
	(IFRS reported)	39%	52%	40%	49%
Result from operations (EBIT)	(adjusted) [1]	168.7	97.1	128.5	16.4
	(IFRS reported)	75.9	93.3	100.7	7.1
Net result	(adjusted) [3]	127.5 +23.9%	102.9	141.4 +930.1%	13.7
EPS (basic/diluted) [2]	(adjusted) [3] CHF	1.74 / 1.63	1.67 / 1.62	2.00 / 1.87	0.22 / 0.22
	EUR	1.56 / 1.46	1.53 / 1.48	1.72 / 1.60	0.21 / 0.20

[1] Excl. acquisition-related and share-based compensation costs
[2] Earnings per share in CHF were converted using the average currency exchange rate for the respective periods
[3] Net result and earnings per share excluding valuation effect of the option element of the issued convertible bond
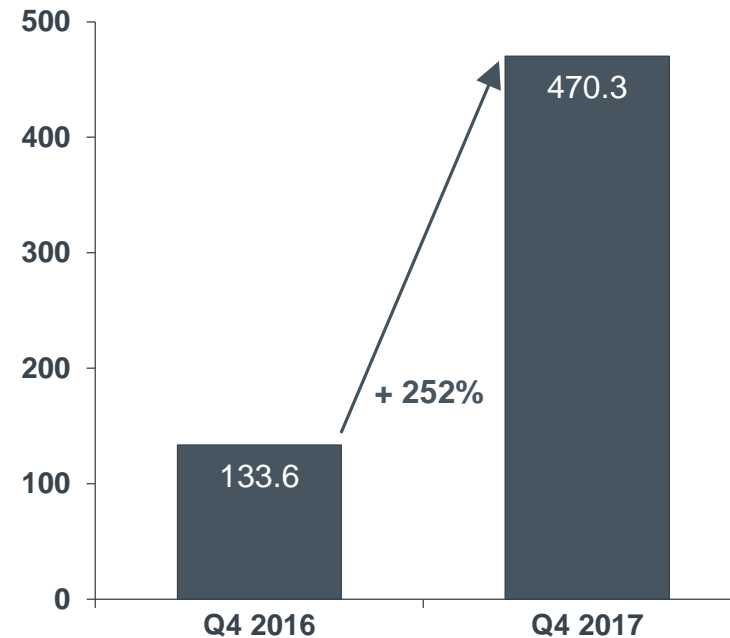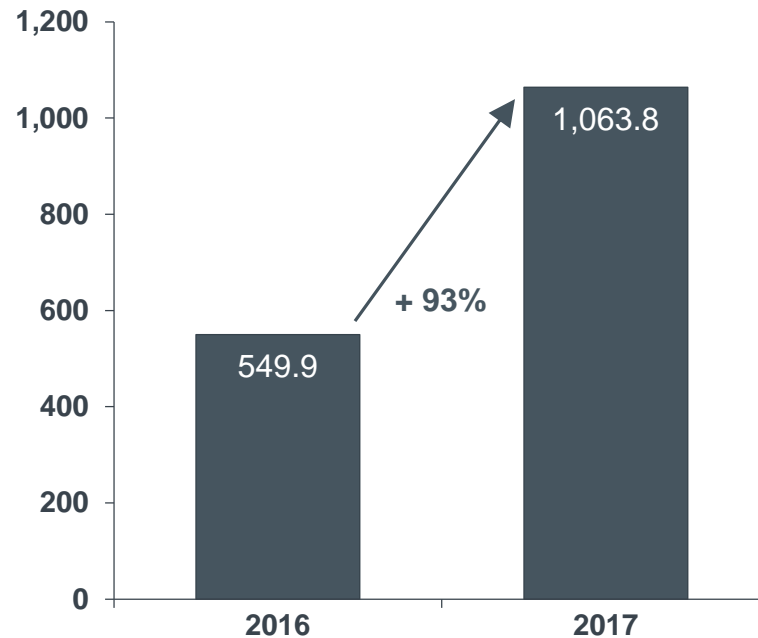
Financial results

P&L

Balance sheet

| Cash flow |
| --- |
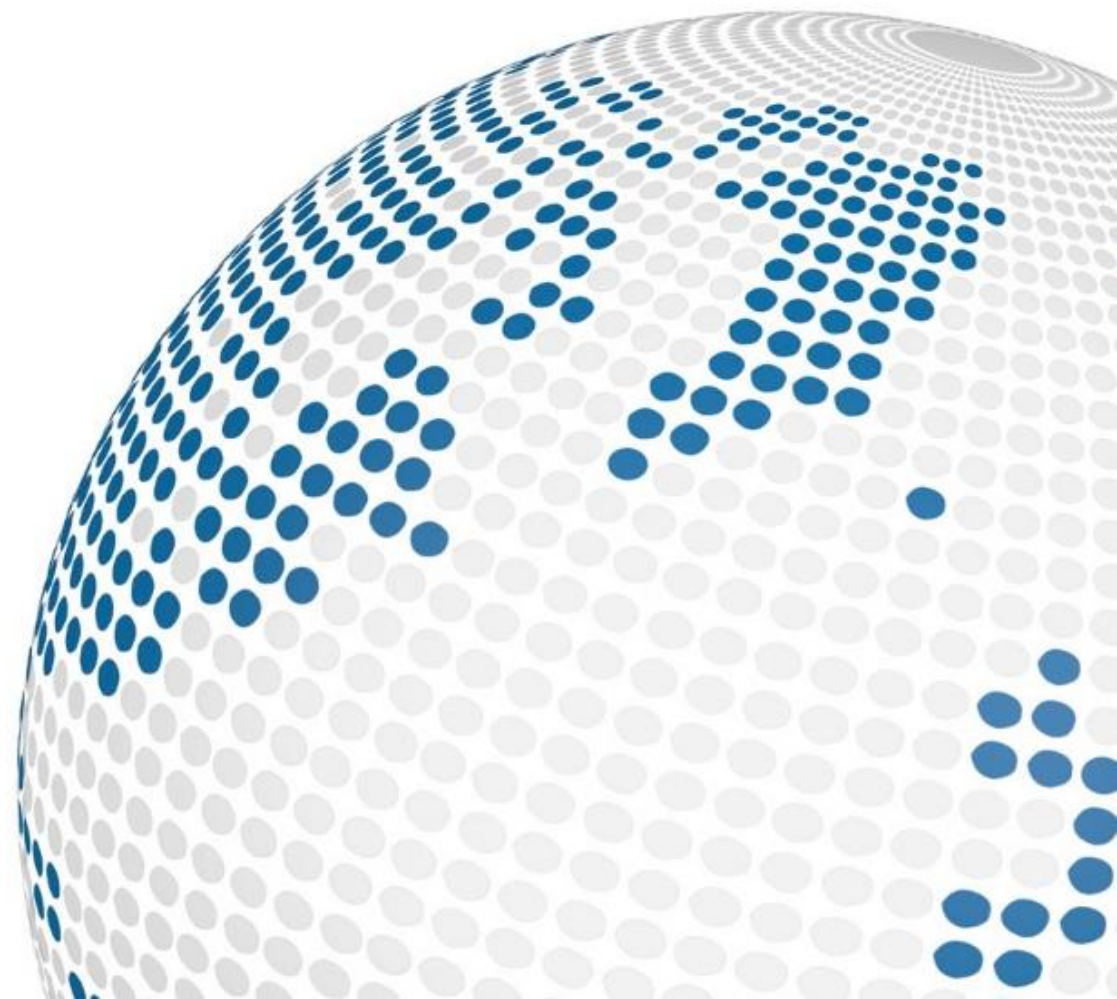
Total revenues

EURm

- Expected very strong revenue growth in second half and fourth quarter
- On constant currency basis, revenues 2017 100% higher year-on-year

To reflect ams' business structure financial information will change to USD presentation from Q1 2018
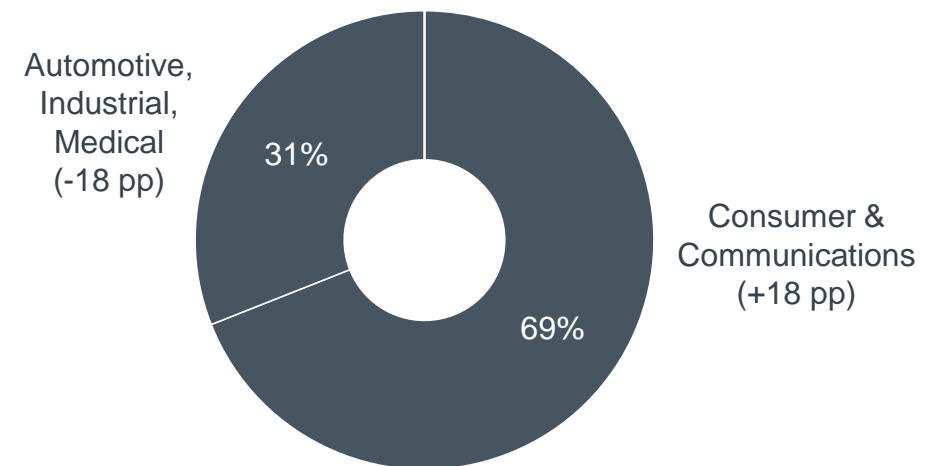
Revenue distribution
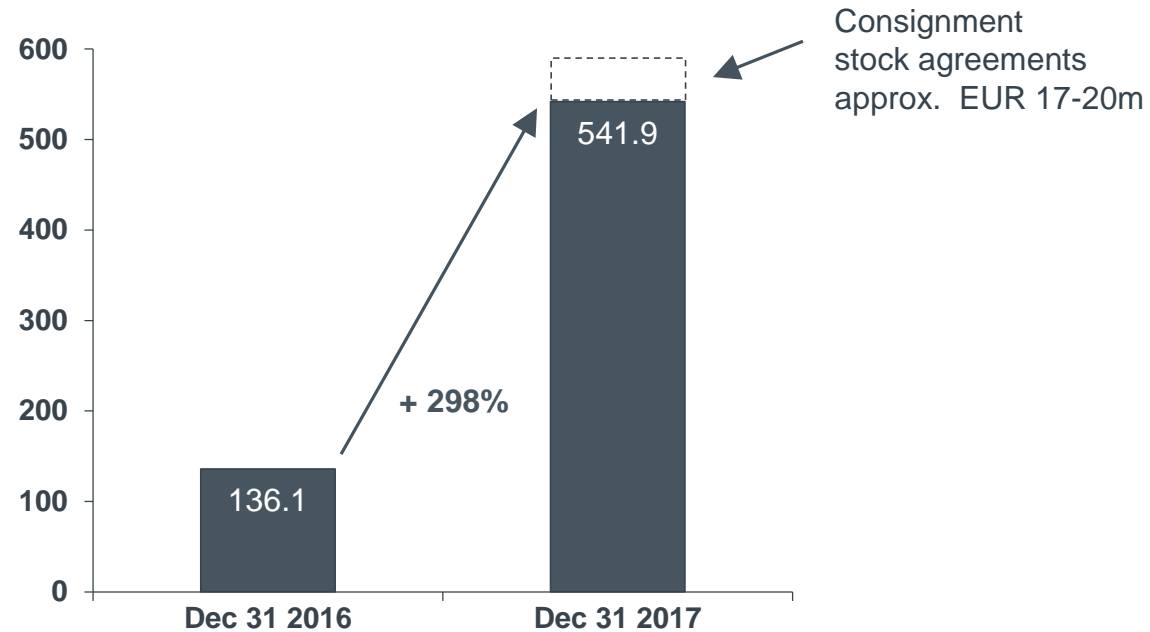
% of revenues

Total revenues by region 2017

	2016	2017	
Asia/Pacific	58%	47%	
Americas	5%	20%	
Europe (EMEA)	37%	33%	
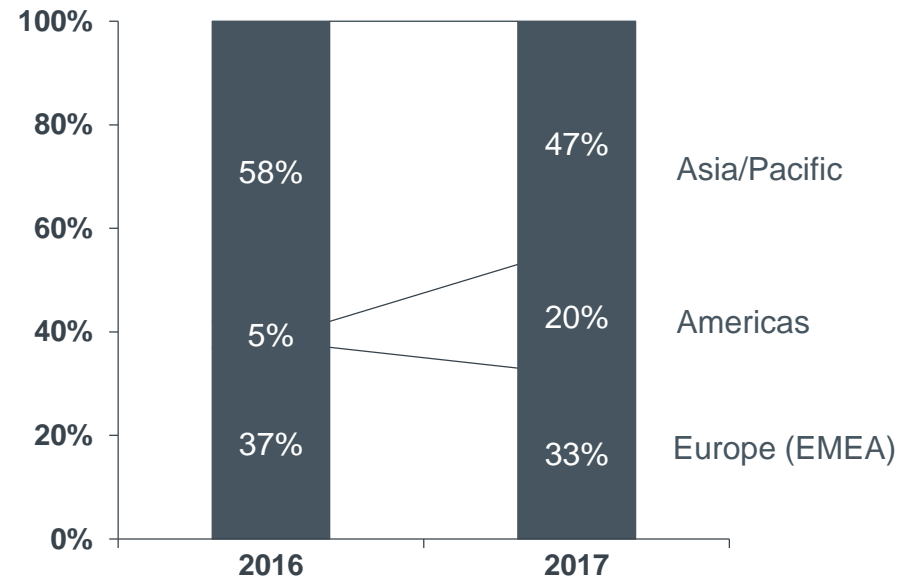
Total revenues by market 2017

Automotive, Industrial, Medical (-18 pp) — 31%

Consumer & Communications (+18 pp) — 69%

- Change in regional split mostly due to customer-side changes in billing structure
- Consumer & Communications increase driven by new optical sensing ramp-ups in second half

Total backlog

EURm

Consignment stock agreements approx. EUR 17-20m

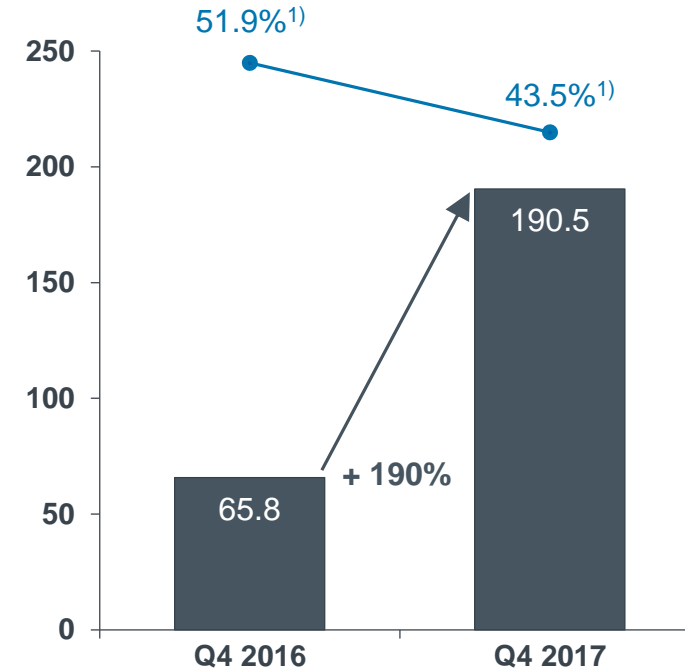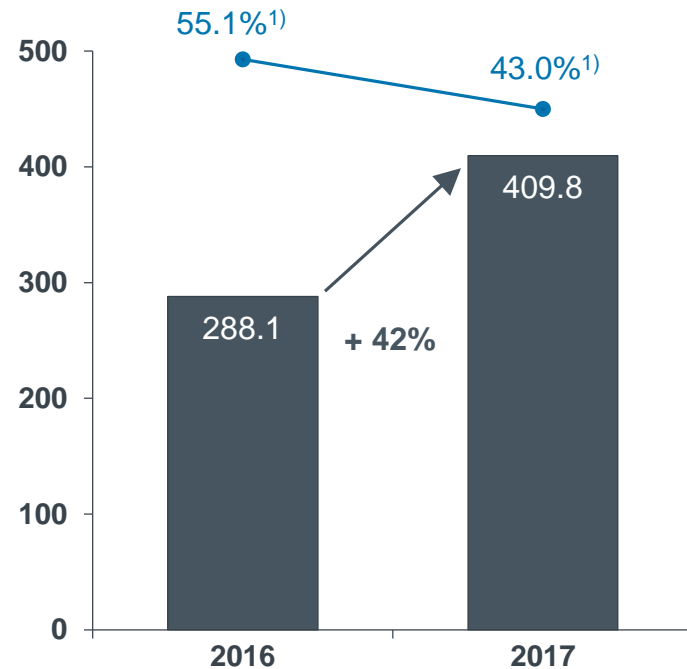541.9

+ 298%

136.1

Dec 31 2016   Dec 31 2017

- Backlog at year-end 2017 includes certain validated forecasted commitments to better reflect converting pipeline
- Not directly comparable to previous year-end

Gross profit / gross profit margin

**EURm, % of revenues, gross profit incl.
acquisition-related and share-based compensation costs**

- Gross profit margin development reflects change in manufacturing structure with major new sites in Singapore
- Gross profit margin incl. acquisition-related and share-based compensation costs 2017: 38.5%, Q4 2017: 40.5%

[1] excl. acquisition-related and share-based compensation costs
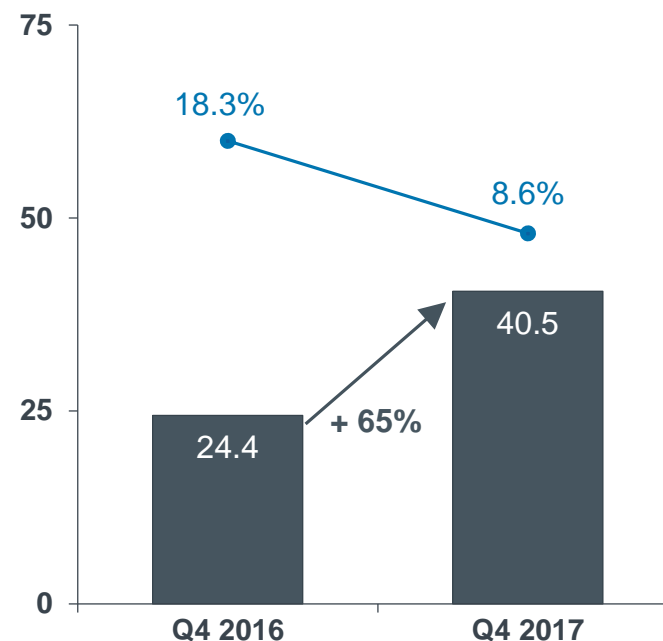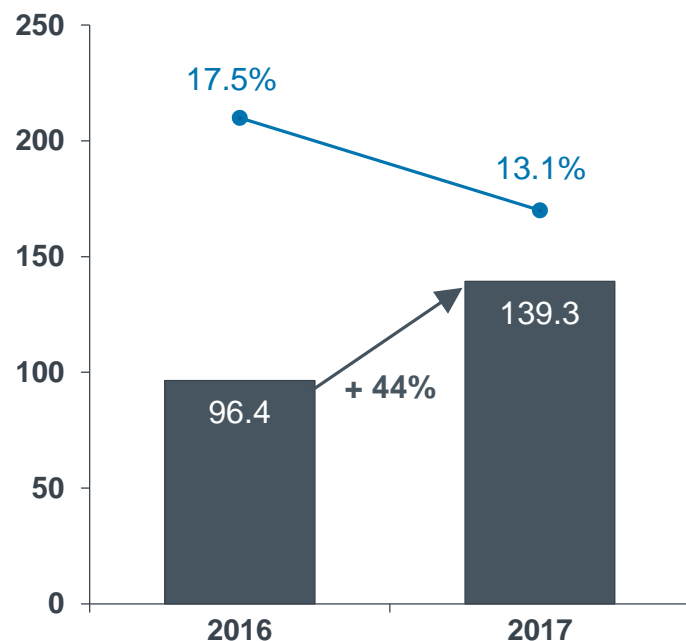
R&D expenses

EURm, % of revenues
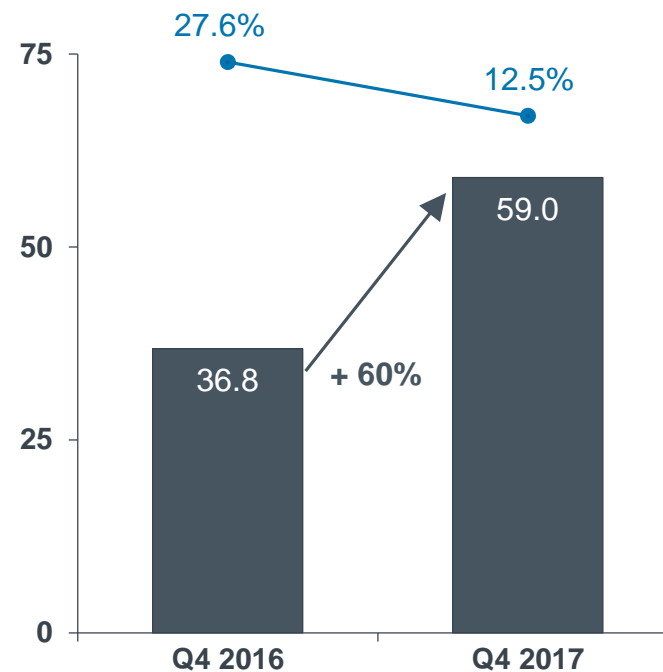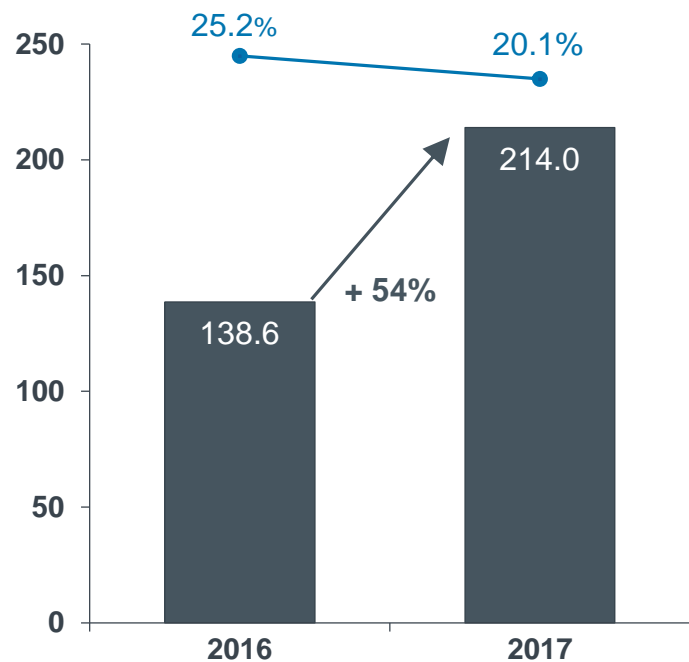
- High R&D investments continued through 2017, include certain acquisition effects
- Significant decrease of relative R&D spending in line with previous comments

SG&A expenses

EURm, % of revenues

- SG&A spending includes selective sales/marketing expansion, particularly in China, and certain acquisition effects
- Significant decrease in relative SG&A spending, fully in line with previous comments

Results from operations (EBIT)

**EURm, % of revenues, adjusted EBIT excluding acquisition-related and share-based compensation costs**
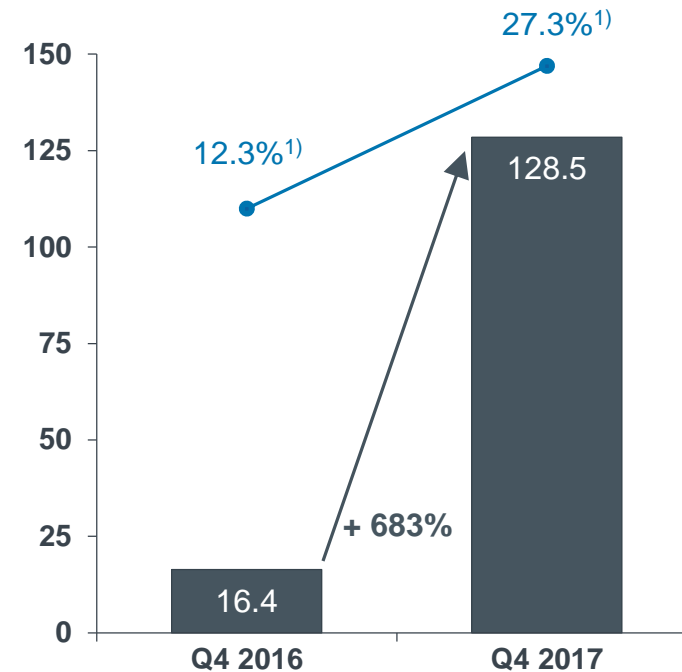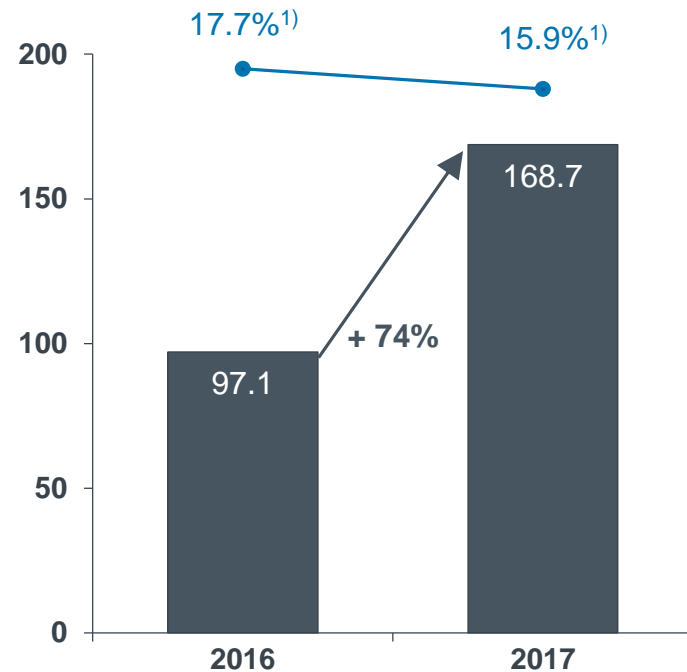
- EBIT development reflects strong revenue growth, substantial Q4 profitability despite certain ramp-up effects
- EBIT (EBIT margin) reported: 2017 EUR 75.9m (7.1%), Q4 2017 EUR 100.7m (21.4%)

[1] adjusted EBIT margin excl. acquisition-related and share-based compensation costs

Net financial result

EURm
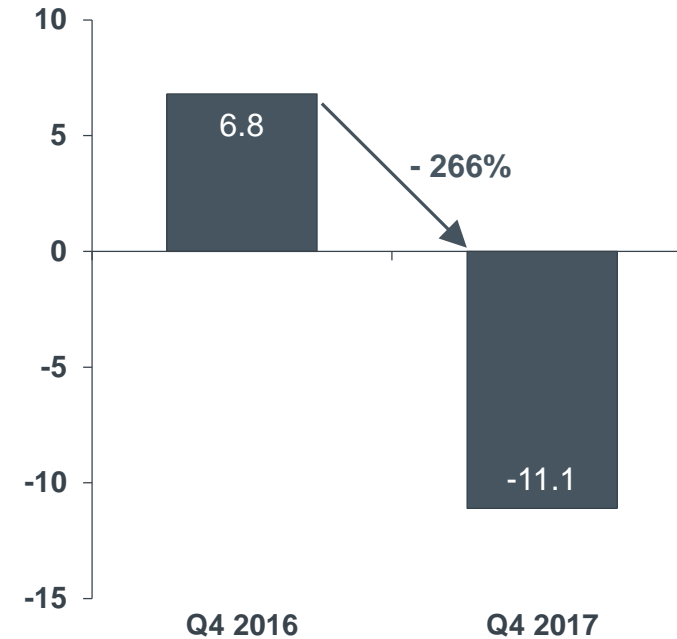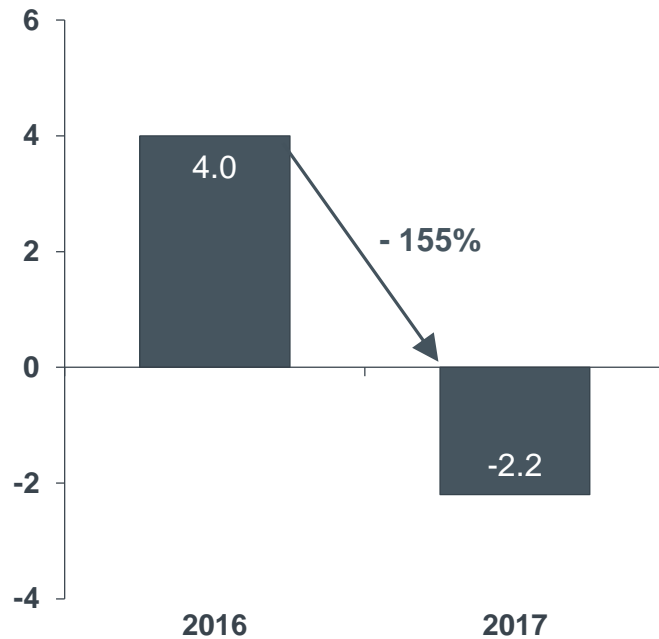
- 2017 result due to exchange rate effects, convertible bond issuance/higher debt, balance sheet revaluation effects
- Q4 2017 result reflects increased debt incl. convertible bond issuance and balance sheet revaluation effects

Tax expense

EURm, tax rate: % of result before tax (PBT)
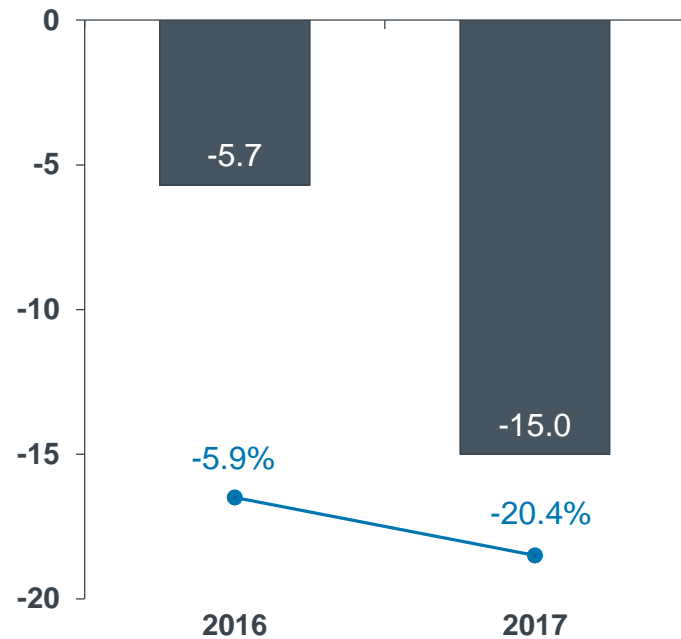
Tax rate
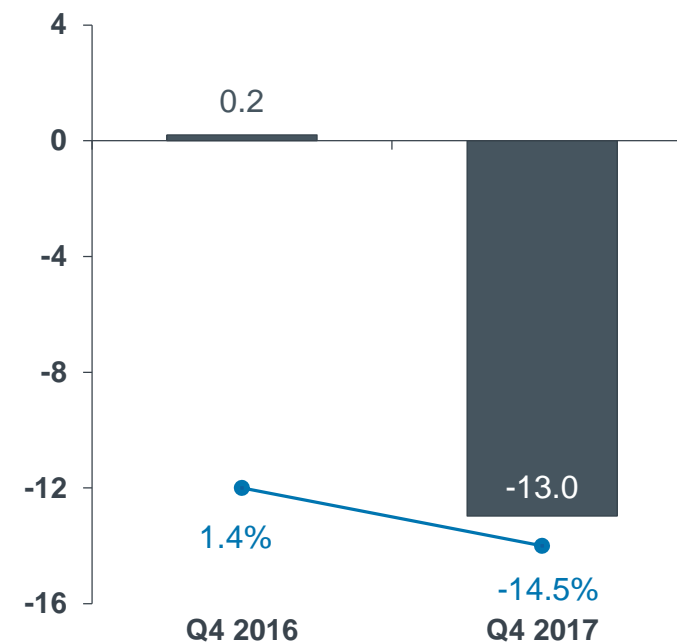
- Negative tax expense 2017 predominantly driven by unwinding of historic tax structure
- Cash tax rate expected to increase gradually over next years

Net income / earnings per share

EURm, adjusted net income, adjusted earnings per share (EPS) in CHF and EUR (basic/diluted)

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CHF 1.67 / 1.62 [1]   CHF 1.74 / 1.63 [1]
EUR 1.55 / 1.48 [1]   EUR 1.56 / 1.46 [1]

- 2016: 102.9 [1]
- 2017: 127.5 [1]
- **+ 24%**

CHF 0.22 / 0.22 [1]   CHF 2.00 / 1.87 [1]
EUR 0.21 / 0.20 [1]   EUR 1.72 / 1.60 [1]

- Q4 2016: 13.7 [1]
- Q4 2017: 141.4 [1]
- **+ 932%**
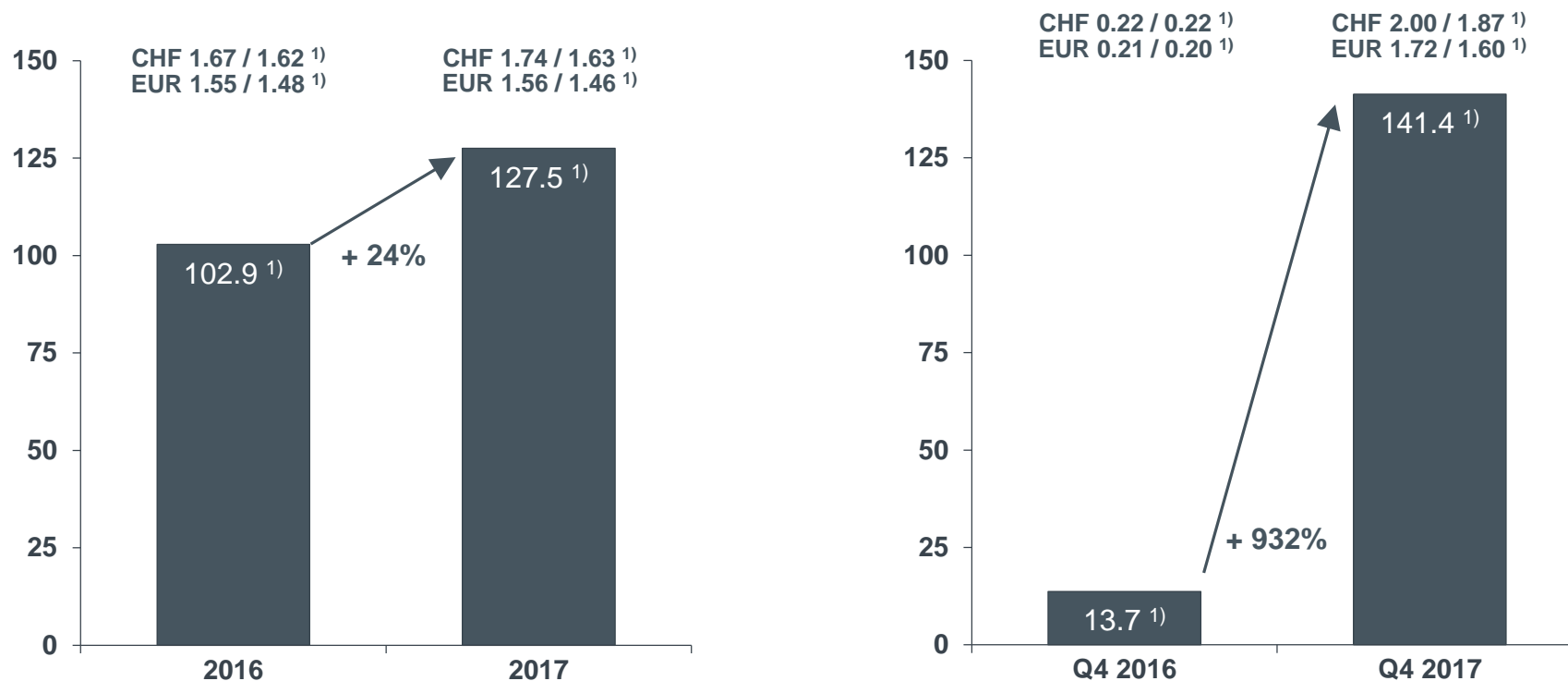
- Net income reported: 2017 88.7m Q4 2017 102.6m
- EPS reported (basic/diluted): 2017 CHF 1.21/1.12, EUR 1.08/1.01, Q4 2017 CHF 1.45/1.34, EUR 1.25/1.15

[1] Excluding valuation effect of the option element of the issued convertible bond

Financial results

P&L

Balance sheet

Cash flow
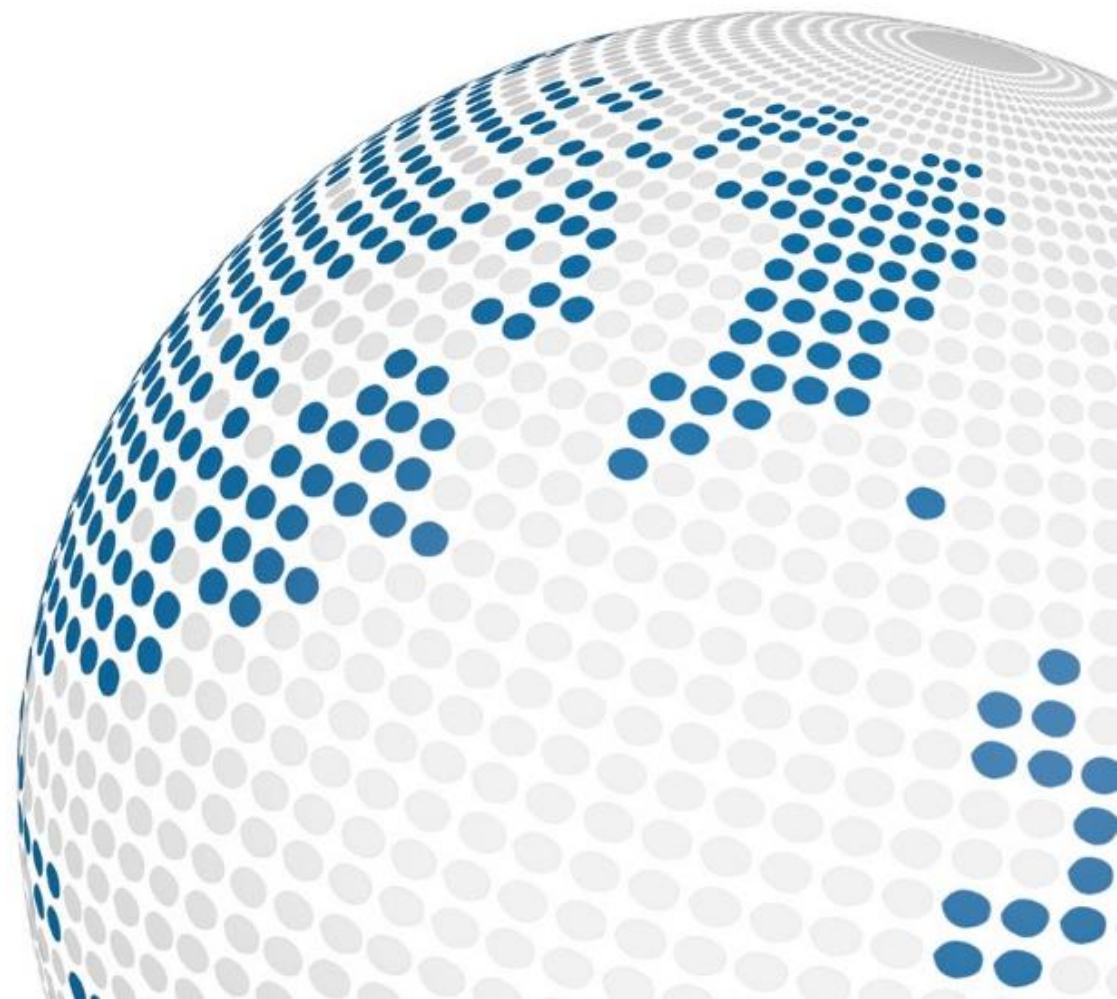
Working capital

EURm
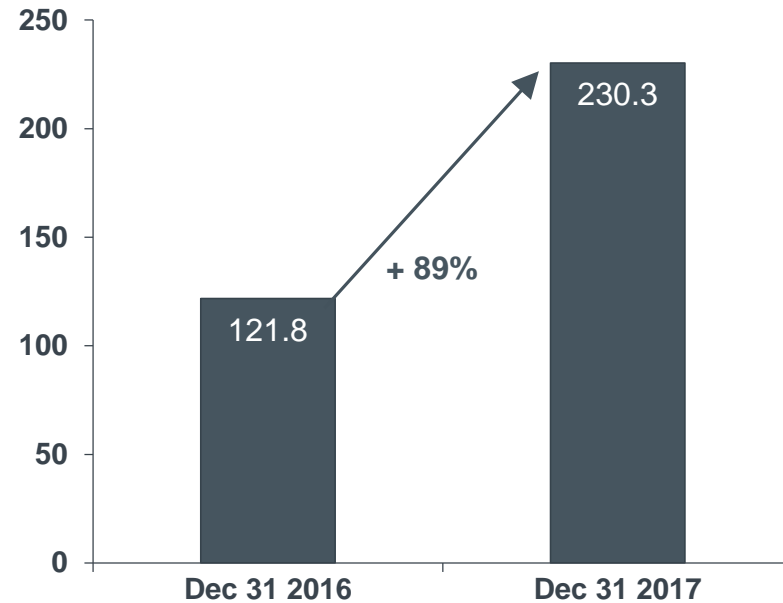
Working capital at year-end

	2017	2016
Trade receivables	**284.8**	97.2
+ Inventories	**253.9**	92.9
- Trade liabilities	**308.4**	68.2
Working capital	**230.3**	121.8
in % of revenues	**22%**	22%

- Efficient working capital management in light of strong business growth
- Increase in inventories and receivables due to very significant capacity expansion (higher WIP)

Net debt, cash and short-term investments

EURm, % of total liabilities

Net debt, equity ratio

46.9%   25.4%

1,000

800   865.8

600

400
                    + 238%
256.2
200

0
        Dec 31 2016   Dec 31 2017

Equity ratio

Cash and short-term investments

500

400   392.4

300

215.8   + 82%
200

100

0
        Dec 31 2016   Dec 31 2017
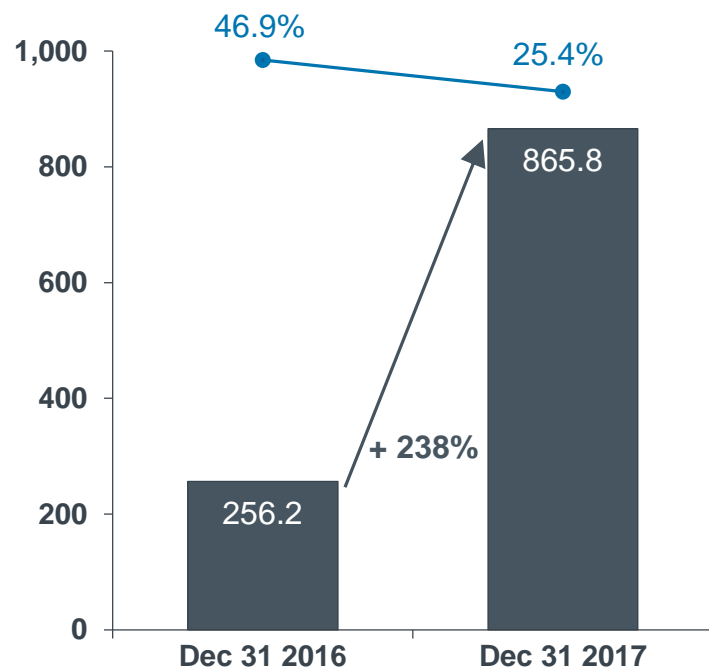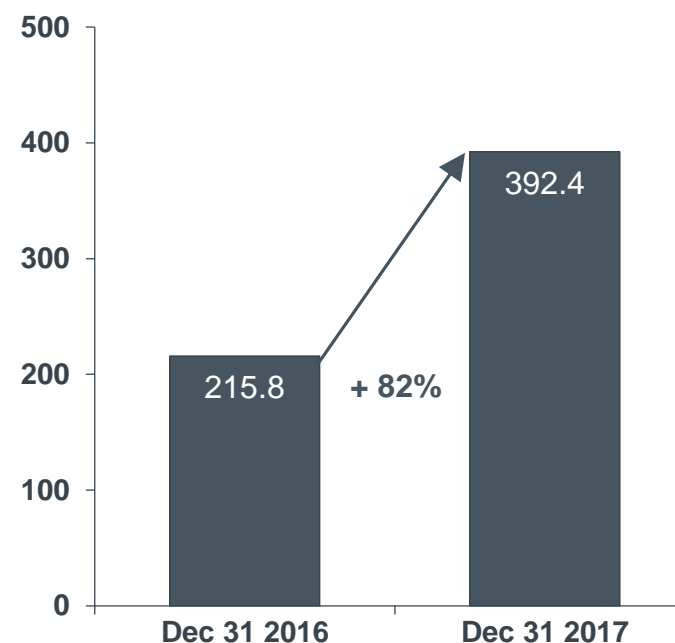
- Net debt position increased 2017 due to acquisitions and significant capacity investments
- Increase in cash and cash equivalents reflects H2 convertible bond issuance

Financial results

P&L

Balance sheet
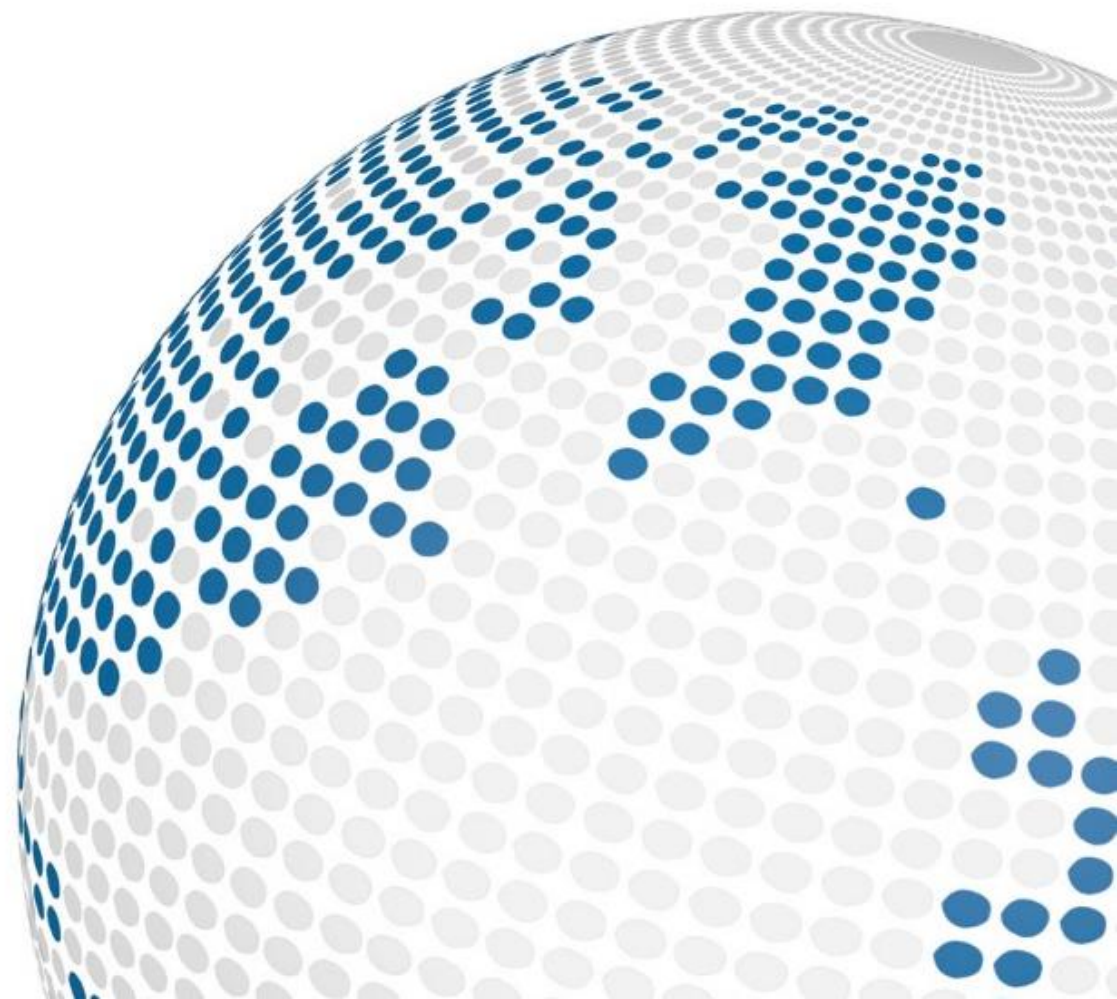
Cash flow

Cash flow from operations

EURm, % of revenues
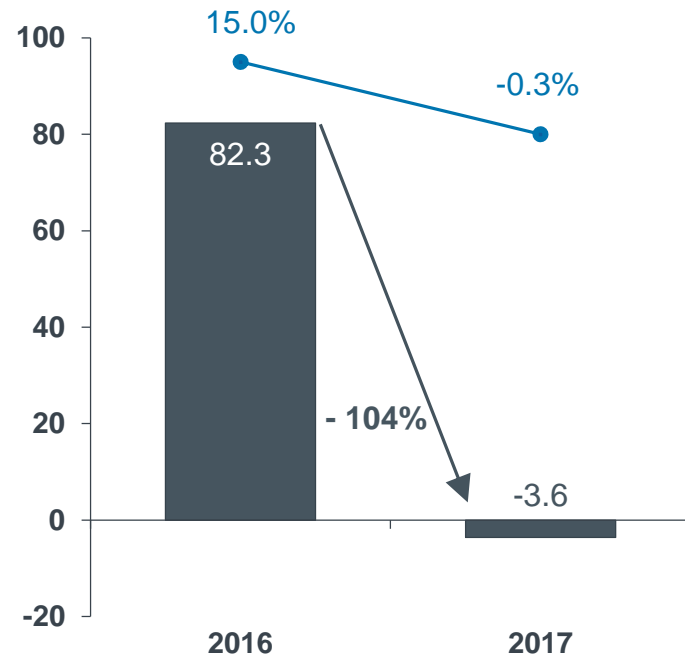
Cash flow as % of revenues
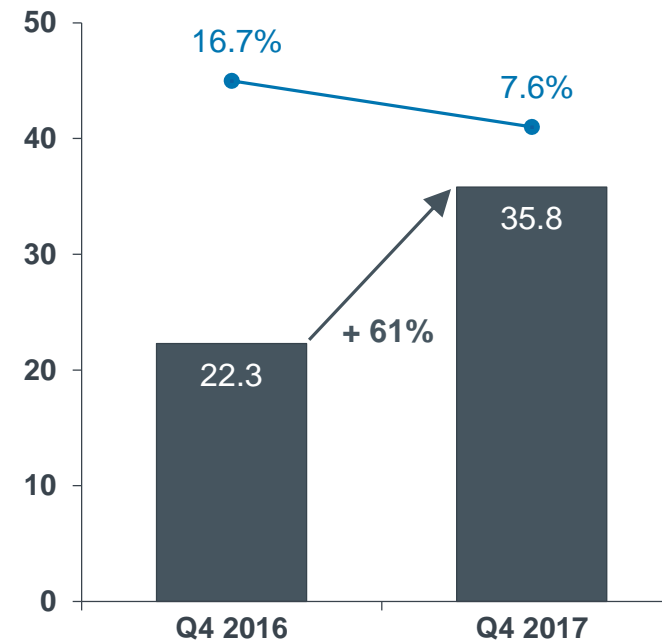
- Cash generation impacted by lower profitability, tax effects and working capital expansion
- Cash flow situation expected to improve going forward

Capital expenditures

EURm, % of revenues – Acquisition of intangibles, property, plant and equipment

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Left chart:
- 16.7% (2016)
- 54.7% (2017)
- 582.0 (2017)
- 91.7 (2016)
- + 535%

Right chart:
- 16.9% (Q4 2016)
- 43.7% (Q4 2017)
- 205.5 (Q4 2017)
- 22.5 (Q4 2016)
- + 813%
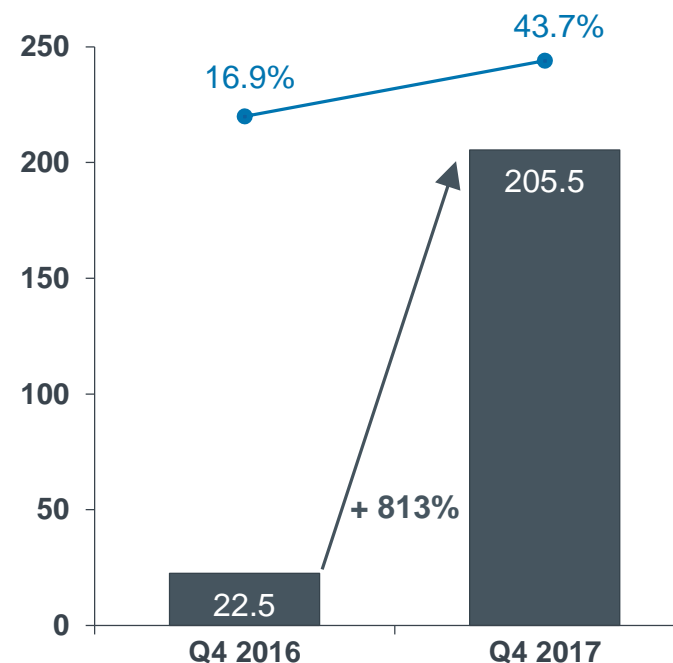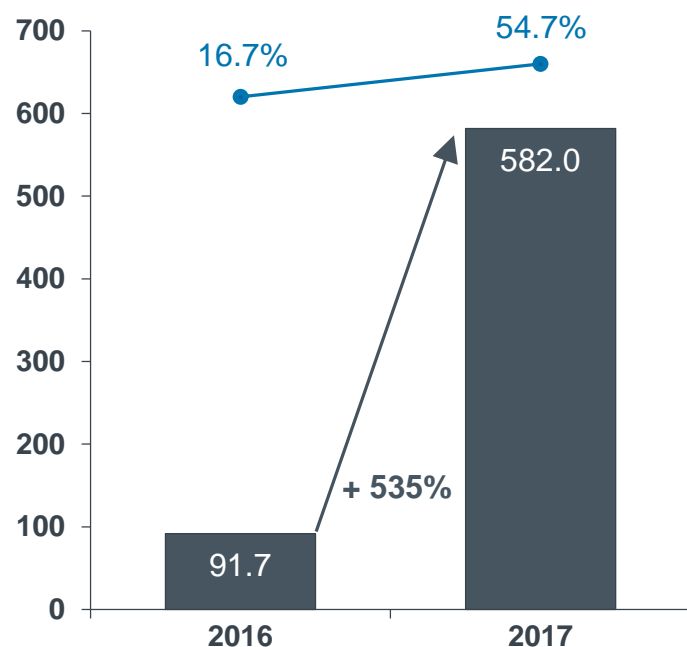
Capital expenditures as % of revenues

- Very high 2017 capital expenditures to expand production capacity predominantly at Singapore sites
- Q4 spending includes share of continuing investments for expected additional 2018 volume needs

Dividend proposal

Dividend proposal for 2017

- EUR 0.33 per share, based on policy for increased dividend if business develops positively compared to previous year

Dividend timetable

- AGM 6 June 2018
- Ex-date 12 June 2018
- Payment date 15 June 2018

Company highlights and outlook
Shaping the world with sensor solutions

Outlook

2016-2019 targets

- Expected revenue growth: 60% compound annual growth rate (CAGR), 2019 expected revenues above USD 2.7 billion
- Adjusted EBIT margin target: 30% from 2019 onwards

2018 outlook

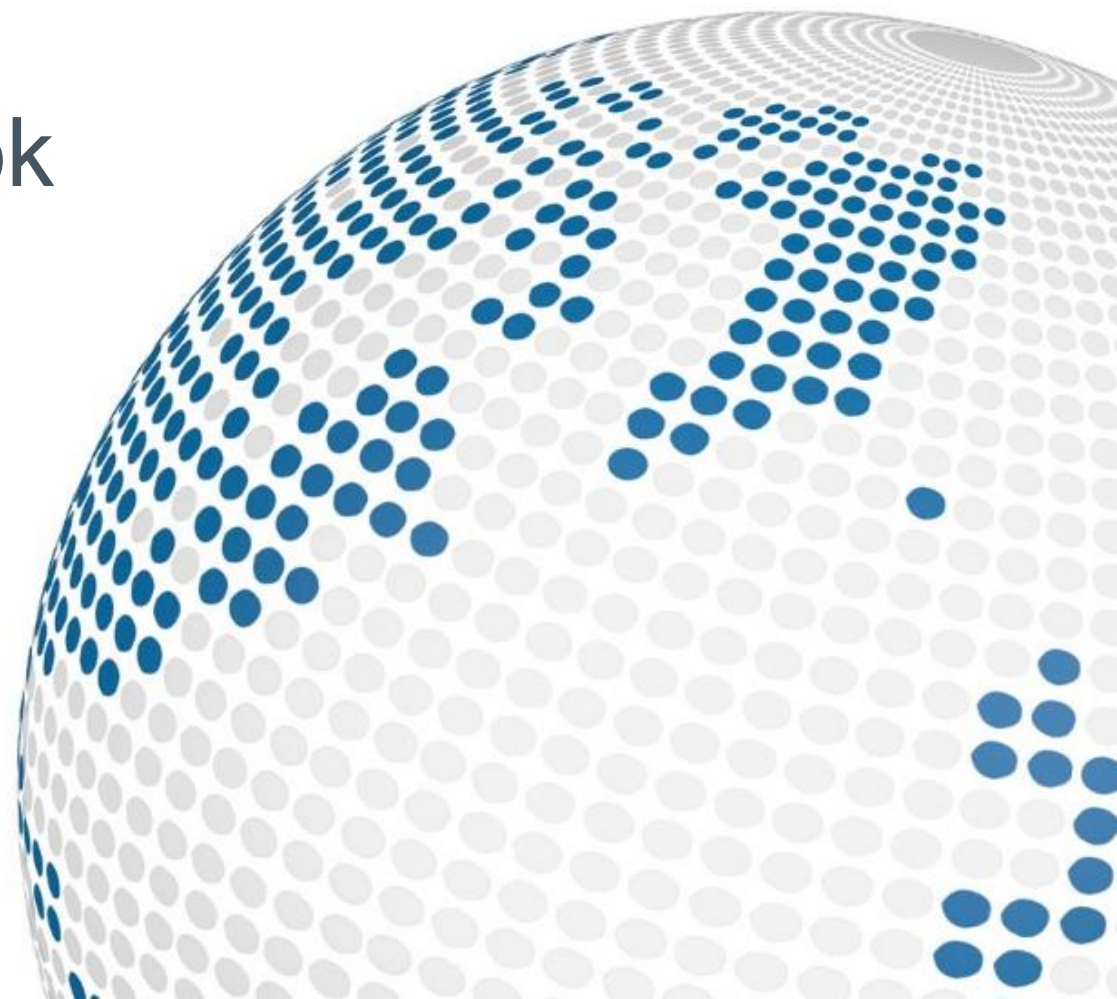- Very strong second half 2018 expected, based on currently available forecasts
- Substantial sequential revenue growth rates expected for second half of the year, similar to 2017
- High volume ramps in consumer business expected to drive this strong anticipated second half development

Q1 2018 outlook

- Revenues expected to reflect a customer volume impact in the consumer market and anticipated seasonality
- Expected first quarter revenues of USD 440-490 million (current USD/EUR exchange rate of 1.24), based on available information
- Revenue expectation means outstanding year-on-year growth of more than 150% compared to the first quarter 2017
- Adjusted operating (EBIT) margin expected to reach 17-20%, mostly due to revenue-related margin and operational leverage effects, a strong year-on-year increase by 14-17 percentage points (excluding acquisition-related and share-based compensation costs)

ams highlights

- Successful strategy driving true leadership in four sensor areas

- Addressing multiple megatrends to secure longer-term above-market growth

- Driving market share gains: differentiate by highest performance, covering convergence trends and solution play

- Active portfolio management: accelerate growth organically and in-organically, today and in the future

- Diversified business with balanced application and customer portfolio

- World class team which executes to win

- Clear targets for profitable growth to drive earnings per share increases

Appendix
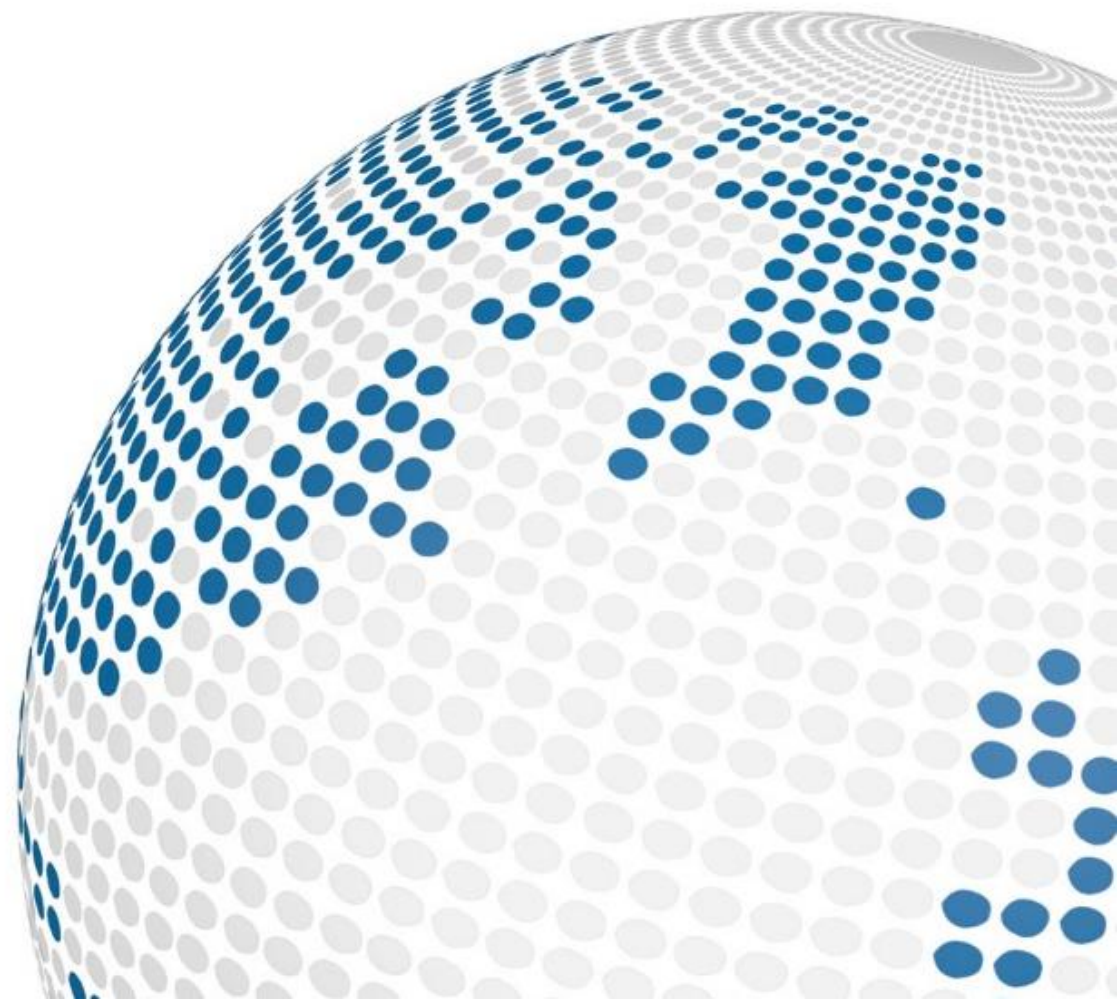
Profit and loss statement

EURm

(IFRS)	2017	2016	Q4 2017	Q4 2016
Total revenues	1,063.8	549.9	470.3	133.6
• Products	1,012.2	495.4	458.2	115.7
• Foundry	51.6	54.5	12.2	17.9
Gross profit	409.8	288.1	190.5	65.8
• Gross margin (adjusted [1])	43.0%	55.1%	43.5%	51.9%
• Gross margin (IFRS reported)	38.5%	52.4%	40.5%	49.2%
Research and development	-214.0	- 138.6	-59.0	- 36.8
Selling, general and administrative	-139.3	- 96.4	-40.5	- 24.4
Other operating income/expenses	19.5	40.1	9.8	2.6
Result from operations (EBIT)	75.9	93.3	100.7	7.1
• EBIT margin (adjusted [1])	15.9%	17.7%	27.3%	12.3%
• EBIT margin (IFRS reported)	7.1%	17.0%	21.4%	5.3%
Net financing costs	-2.2	4.0	-11.1	6.8
Result before tax	73.7	97.2	89.6	13.9
Income tax result	15.0	5.7	12.9	- 0.2
Net result (adjusted [2])	127.5	102.9	141.4	13.7
Net result (IFRS reported)	88.7	102.9	102.6	13.7

[1] Excl. acquisition-related and share-based compensation costs
[2] Net result excluding valuation effect of the option element of the issued convertible bond

Balance sheet

EURm

Assets (IFRS)	Dec 31, 2017	Dec 31, 2016	Liabilities and equity	Dec 31, 2017	Dec 31, 2016
Cash and short term invest.	392.4	215.8	Interest-bearing debt	586.4	108.0
Trade receivables	284.8	97.2	Trade liabilities	308.4	68.2
Inventories	253.9	92.9	Tax liabilities	28.1	36.8
Other current assets	77.1	33.4	Provisions	44.4	20.1
			Other liabilities	546.9	31.4
Total current assets	**1,008.2**	**439.3**	**Total current liabilities**	**1,514.2**	**264.5**
Fixed assets	996.9	319.3	Interest-bearing debt	671.8	364.1
Intangible assets	1,182.1	603.4	Employee benefits	40.2	37.0
Investments in associates	1.9	2.3	Deferred tax liabilities	67.1	54.0
Deferred tax asset	26.1	35.4	Other liabilities	139.4	36.0
Other non-current assets	46.2	23.4			
Total non-current assets	**2,253.1**	**983.7**	**Total non-current liabilities**	**918.5**	**490.9**
			Shareholders' equity	**828.6**	**667.6**
Total assets	**3,261.3**	**1,423.0**	**Total liabil. and equity**	**3,261.3**	**1,423.0**

Cash flow statement

EURm

(IFRS)	2017	2016	Q4 2017	Q4 2016
Income before tax	73.7	97.2	89.6	13.9
Depreciation	148.5	62.3	46.5	16.0
Cash flow from operations	-3.6	82.3	35.8	22.3
Capital expenditures	-581.9	-91.7	-205.5	-22.5
Cash flow from investing activities	-514.8	-71.0	-195.6	-24.1
Proceeds from borrowings	688.0	277.2	100.6	20.0
Repayment of borrowings	-150.8	-85.0	0.0	0.2
Dividends paid	-25.0	-34.6	0.0	0.0
Changes resulting from capital increase	0.0	0.0	0.0	0.0
Cash flow from financing activities	687.7	58.6	42.7	8.8
Change in cash and cash equivalents (incl. effects of changes in foreign exchange rates)	145.9	76.0	-119.4	16.3
Cash and cash equivalents at end of period	288.4	179.6	288.4	179.6