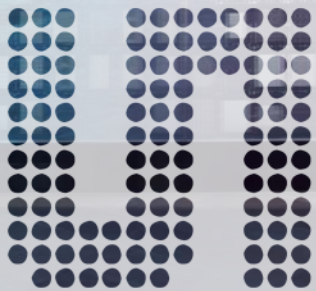




**ams**

## **Q3 2016 results / Heptagon acquisition**



**Alexander Everke, CEO**  
**Michael Wachsler-Markowitsch, CFO**  
**Moritz M. Gmeiner, Head of IR**

October 2016

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# ams at a glance



## Our business

- Focus 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) – 50% of sales H1 2016
- Automotive, Industrial, Medical (AIM) – 50% of sales H1 2016

## By the numbers

- 700+ ams engineers (830+ combined with Heptagon)
- 17+1 design centers, 2+1 manufacturing locations
- 35 years of design and manufacturing know-how
- 2,100+ ams employees worldwide (2,900+ combined with Heptagon)
- 8,000+ customers

# 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

- Smallest, lowest cost, high volume multi-sensor modules, driving monolithic integration
- Sensor algorithms and sensor fusion software
- Application software for differentiating end-user experiences

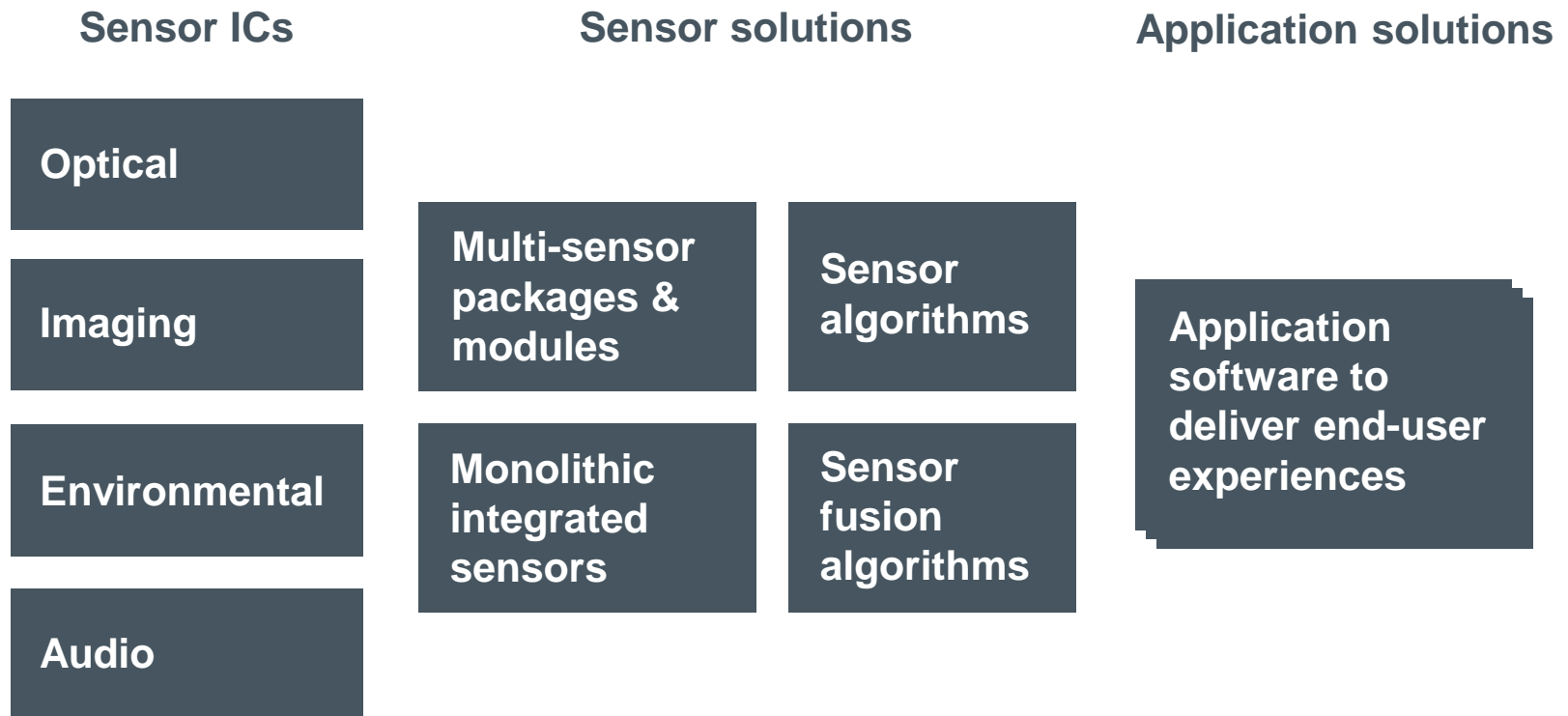
### Diversified business with balanced application and customer portfolio

- Long-term target mix of at least 60/40 C&C / AIM split

### Financial target model of sustained 30% EBIT margin

# ams strategic value chain

Delivering best-in-class sensor solutions and applications



# Heptagon acquisition: Optical sensing leadership

## Heptagon: Global leader in high end optical packaging

- Market leader and innovation driver in micro-optics and high performance optical packaging
- Advanced optics capabilities enable world-class integration and high end packaging solutions for optical sensing
- Currently focused on the consumer market, major supplier into high volume mobile device applications for small form factors
- Customer base includes key customer serving smartphone/mobile device markets
- Expects substantial revenue growth over the coming years starting mid-year 2017, based on revenue and capacity pipeline and existing customer commitments



## ams + Heptagon: The end-to-end optical sensing solutions leader

- Increasing value-add of high end packaging for upcoming optical sensor applications drives strategic combination
- Clear #1 in optical sensing with scale and ability to drive industry trends
- End-to-end solution capability under one roof to better serve customers, and accelerating expansion of ams' capability in sensor fusion/sensor hubs
- ams' consumer market access accelerates broadening of Heptagon customer base

# Heptagon acquisition: Overview, new targets

## Heptagon business overview

- Headquarters/manufacturing Singapore, R&D center Switzerland
- 830+ employees (approx. 120 engineers and 500 manufacturing staff), 250 patent families
- Current 12 month revenue run rate around USD 90m
- Negative operating profitability due to current underutilization of capacity
- Major expansion of Singapore manufacturing capacity underway, based on confirmed customer commitment for usage of additional capacity
- Total capital investment of more than USD 250m in 2016/17, fully funded from existing cash in the business, no ams funding required



## ams including Heptagon: Higher growth target and focus on EBIT margin

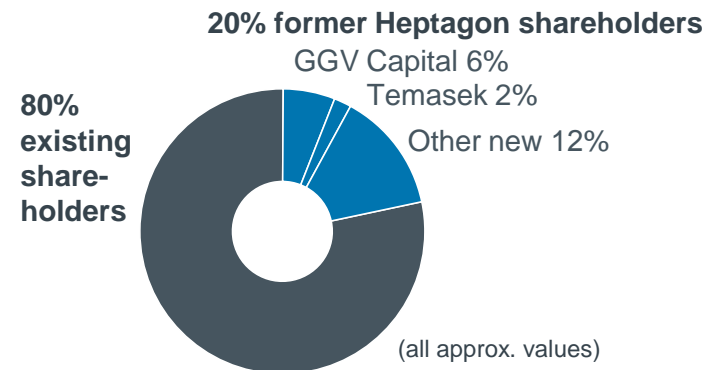
- Significantly higher mid-term growth opportunities for ams including Heptagon, particularly in consumer optical sensing
- Substantial content increases in smartphone and mobile device space expected to drive accelerated growth
- New revenue growth target of 30% CAGR including Heptagon for the coming three years
- Focus on EBIT profitability: target of 30% sustained operating margin from 2019

# Heptagon acquisition: Transaction details

## Transaction details

- Upfront payment in cash and shares + deferred earn-out in cash
- USD 64m cash from available funds, 15% capital increase (excl. subscription rights) plus treasury shares, total upfront payment value approx. USD 570m
- Earn-out of up to USD 285m based on acquired business delivering high revenue growth over FY2017
- Closing expected within 3 months
- Valuation based on high growth potential from revenue pipeline, customer commitments and capacity increase
- Total valuation determined by future performance of acquired business

## New ams shareholder structure



## Heptagon shareholders

- Financial investors, including GGV Capital (global financial investor, USA) and Temasek (Government of Singapore-owned investment company, SIN), management and employees

# Optical and image sensing



## Worldwide leader in light sensing solutions

- Clear #1 in mobile optical sensing
- True Color spectral sensing for advanced analysis of light spectrum / light environment
- RGB color, ALS, proximity sensors / modules
- Time-of-flight (ToF) technologies
- Spectral sensing for color identification
- Spectral sensing high quality biosensors
- Color and spectral sensing for Industrial IoT applications
- Spectral light sensing for smart LED lighting

## High value image sensing

- High-performance area and line scan CMOS image sensors
- NanEye miniature camera technology
- Future combination of imaging and spectral sensing

**Spectral sensing drives differentiation: True Color in consumer**



# Audio sensing



## ANC (active noise cancellation)

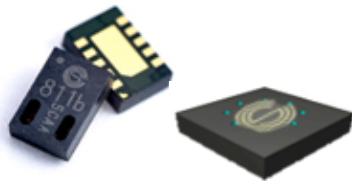
- High performance solution based on analog noise reduction technology
- Low power budget + footprint advantages
- Significantly better receive-path audio quality, also lowering potential health risks
- Broad market interest in high-end adoption
- Expansion of audio signal processing capabilities through addition of digital IP team

**Audio sensing  
growth opportunities  
in high-end  
applications**

## MEMS microphone interface ICs

- Continuing market leadership in high volume market
- Leading position in low noise solutions and tight integration
- Strong customer partnership focused on high quality segments
- Digital interface roadmap
- Exploring potential for audio sensor fusion adding further sensor modalities to audio input hardware

# Environmental (including gas) sensing



## Technology leader in environmental/gas sensing

- End-to-end solution provider
- Unique CMOS-based portfolio for low power, high volume, small form factor
- Key environmental sensing areas
  - MOX gas
  - Infrared gas / presence detection
  - Rel. humidity, pressure, temperature
- Broad range of emerging applications in mobile, home/building automation, Industrial IoT and other AIM markets

**Emerging market in HABA and Industrial IoT, roadmap for consumer**



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

- Combination of related environmental sensor modalities in module (e.g. gas + relative humidity)
- Integration roadmap to realize low-cost, low-power, smallest size consumer solutions
- Sensor algorithms and application software as value drivers

# End markets – Consumer & Communications

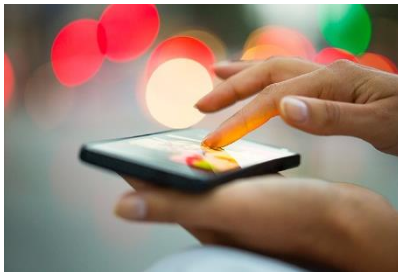
Sensor solutions and sensor interfaces



## Mobile device optical sensor applications

- Clear #1 in mobile optical sensing
- Display management (ALS, RGB color, prox)
- True Color ambient light identification and display optimization
- New spectral sensing-based applications (color identification)

**Largest mid-term revenue growth opportunities**



## Mobile device audio sensing

- High quality ANC (Active Noise Cancellation) headsets expected to move “into the box”
- Audio sensor fusion potential for other sensor modalities



## Health data acquisition

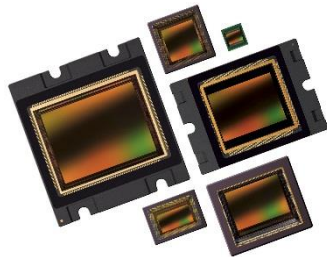
- Focus on quality data for wearables and new device types
- Spectral sensing enables upcoming relative blood pressure feature

## Environmental sensing

- Roadmap for emerging gas sensing applications

# End markets – Industrial

Sensor solutions and sensor interfaces



## Industrial automation, control, and sensing

- Motion control, drives and electrical motors
- Industrial sensors including time-based sensors
- Integrated magnetic position encoders

## Building automation, infrastructure and lighting

- HVAC, safety, sensor networking and bus systems
- Highest accuracy gas and water flow metering
- Smart LED lighting (lighting management, daylight harvesting)

## High-performance CMOS image sensing

- Leading position in high-end imaging
- Global shutter technology for high speed, frame rate, dynamic range
- Upcoming Industrial IoT opportunities include spectral sensing fusion

## Environmental sensing

- CMOS monolithic relative humidity, pressure, temperature sensors
- Emerging spectral sensing (agriculture, machinery)

Emerging markets for environmental/gas sensing, lighting and spectral sensing

# End markets – Medical

Sensor solutions, sensors and sensor interfaces



## Medical imaging: Leader in lowest noise sensing

- Computed tomography (CT)
- Digital X-ray
- Mammography
- Ultrasound

**New market segments emerging in CT and miniature cameras**

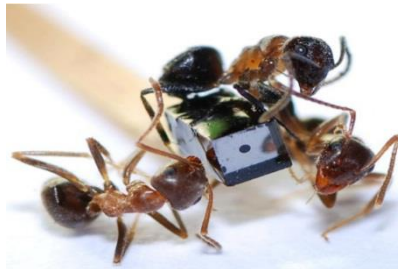


## Personal health devices

- Heart rate monitors
- Diabetes management

## Spectral sensing applications

- First implementation for skin lesion analysis



## Medical endoscopy applications

- NanEye <math><1\text{mm}^2</math> camera modules for endoscope tips
- Increasing traction given significantly higher image quality and robustness for improved diagnostics

# End markets – Automotive

Sensor solutions, sensors and sensor interfaces



## Position sensing

- Pedal and throttle position
- Transmission (clutch, gear shift)
- Steering wheel angle and torque
- Brushless motor control applications

Potential for broader presence across application areas

## Safety and infrastructure, ADAS

- Advanced driver assistance/object detection LIDAR systems
- ESP (Electronic Stability Program), data bus networks
- Battery management for conventional, hybrid, electric vehicles

## Environmental sensing

- Air quality sensing
- Relative humidity and temperature sensing

## Automotive lighting

- Exploring new lighting applications (advanced cabin lighting)

# Scalable manufacturing model

In-house capacity + manufacturing partnerships



## Internal wafer manufacturing, Austria

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

**Significant expansion of Heptagon optical packaging capacity underway**



## Internal optical packaging, Singapore

- Technology leader in high end optical packaging
- Major expansion, capex 2016/17 approx. USD 300m from existing cash

## U.S. fab lease project

- New dedicated wafer capacity, attractive terms, construction underway



## Manufacturing partnerships for scalability and flexibility

- High volume technology partners TSMC, UMC, Global Foundries
- Attractive wafer pricing, flexible response to end market volatility

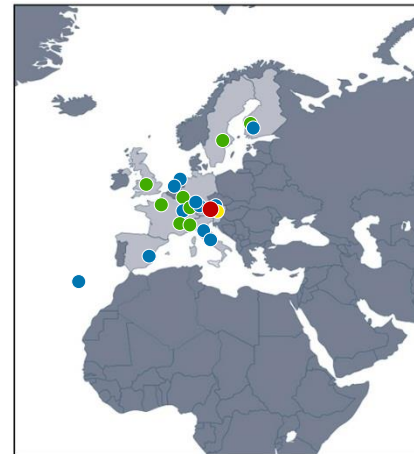
## In-house test, Austria / Philippines

# Global network – design, manufacturing, support

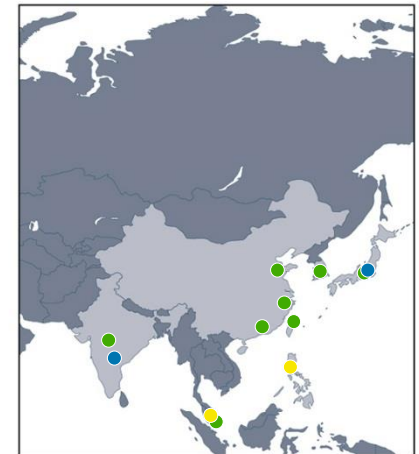
- Headquarters
- Design centers
- Manufacturing/Test
- Sales/customer support locations



Americas



Europe









Asia

- **17+1 design centers**  
Austria, Switzerland (1+1), Italy (2), Spain, Germany (4), Belgium, Netherlands, Portugal, Finland, USA (2), India, Japan
- **Manufacturing**  
Austria, Singapore
- **High volume test center**  
Philippines



## ams highlights

-  Global leadership in sensor solutions
-  Focus on growth and emerging markets
-  Growth relationships with leading OEMs
-  Worldwide network and customer reach
-  Scalable manufacturing
-  Strong financial model for earnings growth

# Key figures

EURm

(IFRS)		9M 2016	9M 2015	Q3 2016	Q3 2015
<b>Total revenues</b>		416.3 - 12.5%	475.9	146.7 - 4.1%	153.0
<b>Gross margin</b>	(adjusted <sup>1)</sup> ) (IFRS reported)	56% 53%	56% 54%	55% 53%	56% 54%
<b>Result from operations (EBIT)</b>	(adjusted – see footnotes) (IFRS reported)	80.6 <sup>2)</sup> 86.1	130.5 <sup>1)</sup> 118.0	28.0 <sup>2)</sup> 49.7	38.5 <sup>1)</sup> 35.1
<b>Net result</b>		89.2 - 24.4%	118.0	55.9 + 64.4%	34.0
<b>EPS (basic/diluted) <sup>3)</sup></b>	CHF EUR	1.45 / 1.40 1.32 / 1.28	1.81 / 1.74 1.71 / 1.65	0.91 / 0.88 0.84 / 0.81	0.54 / 0.52 0.49 / 0.47

<sup>1)</sup> Excl. acquisition-related and share-based compensation costs

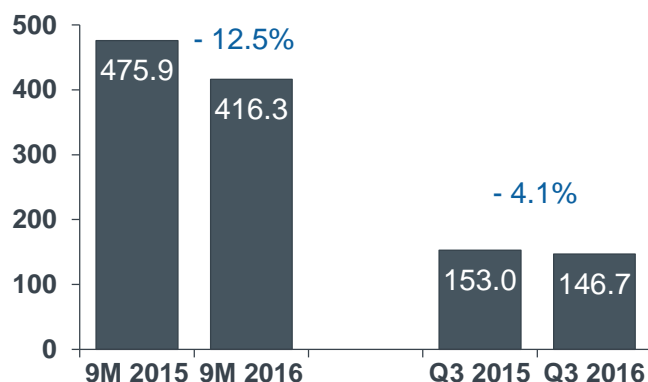
<sup>2)</sup> Excl. acquisition-related costs, share based compensation costs and result from divestiture (EUR 29.7m)

<sup>3)</sup> Earnings per share in CHF were converted using the average currency exchange rate for the respective periods

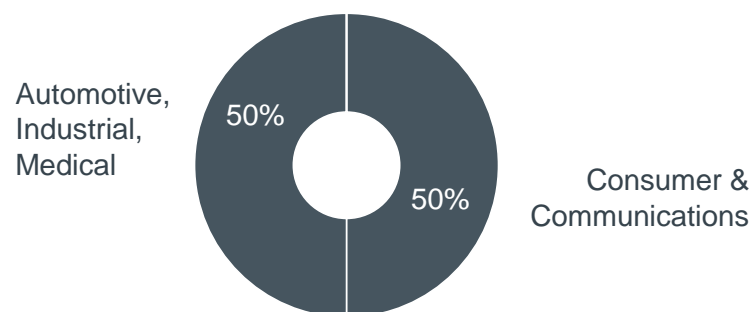
# Financial results

EURm

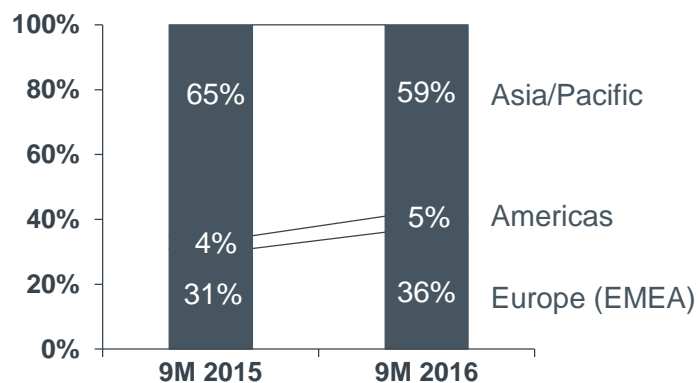
## Total revenues



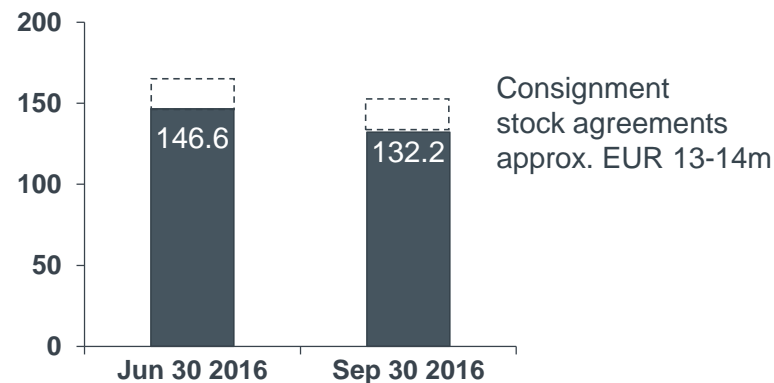
## Total revenues by market H1 2016



## Total revenues by region 9M 2015 / 9M 2016



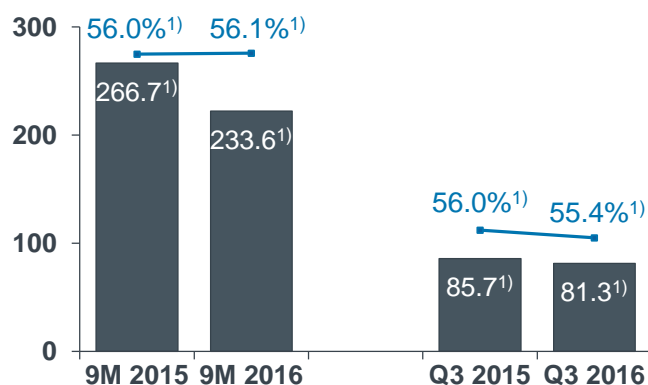
## Total backlog



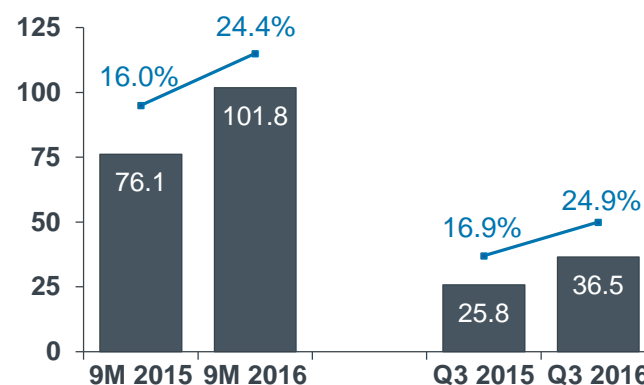
# Financial results

EURm, % of revenues

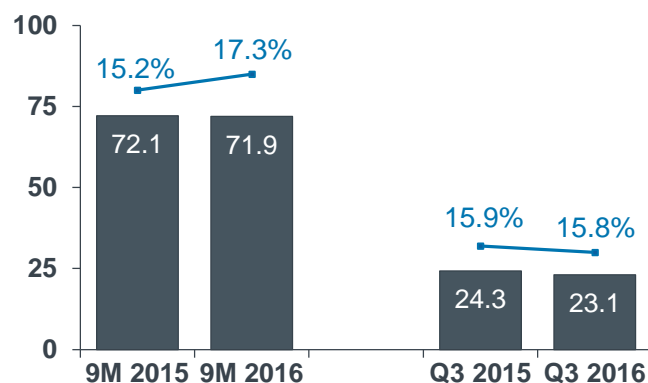
## Gross profit, gross margin



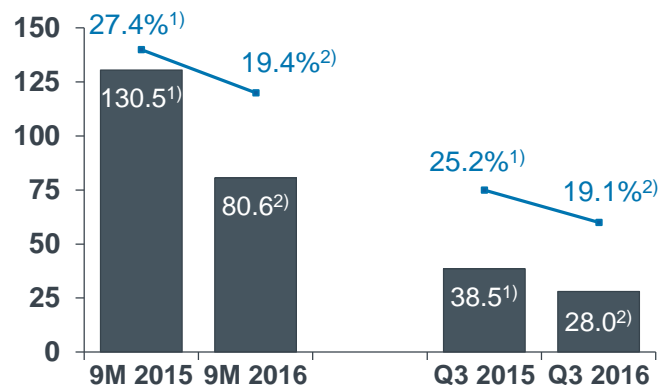
## R&D



## SG&A



## EBIT



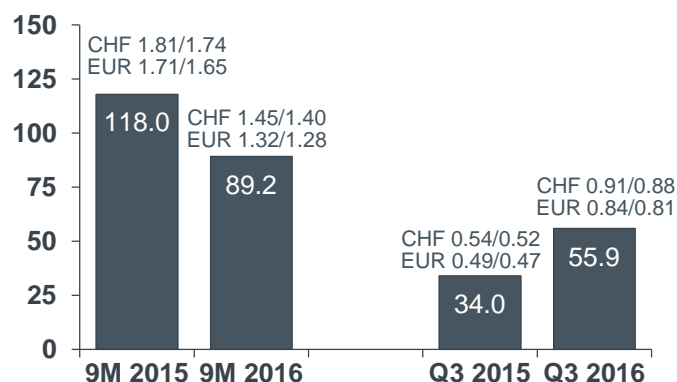
1) Excl. acquisition-related and share-based compensation costs

2) Excl. acquisition-related costs and share based compensation costs and result from divestiture (EUR 29.7m)

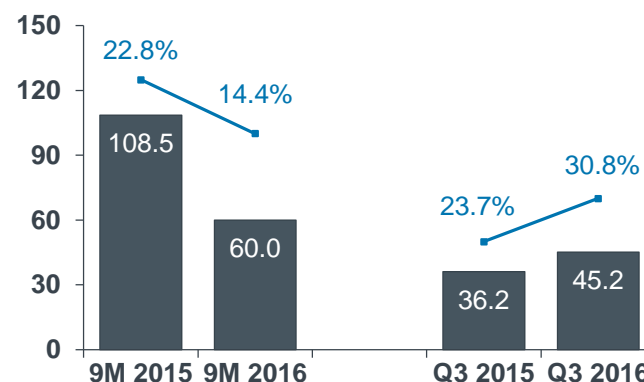
# Financial results

EURm, % of revenues

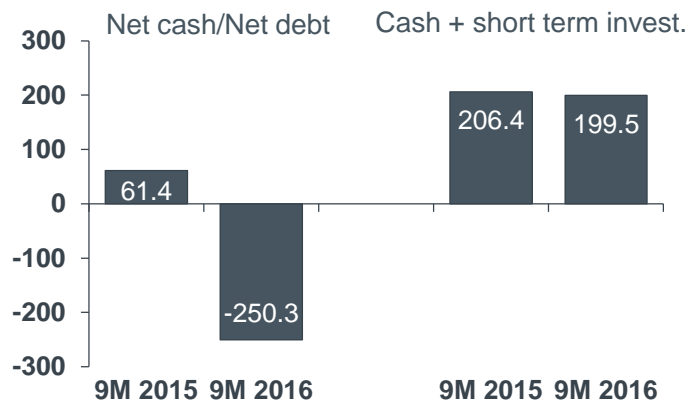
## Net result, EPS (basic/diluted)



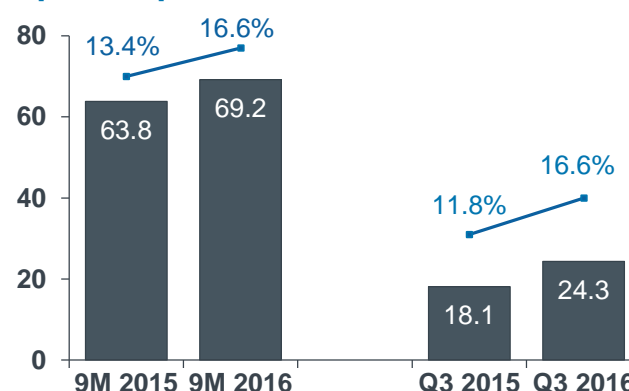
## Operating cash flow



## Net cash, cash + short term investments



## Capital expenditures





ams

**Shaping the world with sensor solutions**

# Profit and loss statement

EURm

(IFRS)	9M 2016	9M 2015	Q3 2016	Q3 2015
<b>Total revenues</b>	416.3	475.9	146.7	153.0
• Products	379.7	442.8	131.7	142.4
• Foundry	36.6	33.1	15.0	10.6
<b>Gross profit</b>	222.3	258.8	77.7	83.1
• Gross margin (adjusted <sup>1)</sup> )	56.1%	56.0%	55.4%	56.0%
• Gross margin (IFRS reported)	53.4%	54.4%	53.0%	54.3%
<b>Research and development</b>	- 101.8	- 76.1	- 36.5	- 25.8
<b>Selling, general and administrative</b>	- 71.9	- 72.1	- 23.1	- 24.3
<b>Other operating income/expenses</b>	35.9	5.5	31.6	2.2
<b>Result from operations (EBIT)</b>	86.1	118.0	49.7	35.1
• EBIT margin (adjusted – see footnotes)	19.4% <sup>2)</sup>	27.4% <sup>1)</sup>	19.1% <sup>2)</sup>	25.2% <sup>1)</sup>
• EBIT margin (IFRS reported)	20.7%	24.8%	33.9%	23.0%
<b>Net financing costs</b>	- 2.8	8.6	- 1.6	1.3
<b>Result before tax</b>	83.3	126.6	48.1	36.4
<b>Income tax result</b>	5.9	- 8.6	7.8	- 2.4
<b>Net result</b>	89.2	118.0	55.9	34.0

<sup>1)</sup> Excl. acquisition-related and share-based compensation costs

<sup>2)</sup> Excl. acquisition-related costs and share based compensation costs and result from divestiture (EUR 29.7m)

# Balance sheet

EURm

<b>Assets (IFRS)</b>	<b>Sep 30, 2016</b>	<b>Dec 31, 2015</b>	<b>Liabilities and equity</b>	<b>Sep 30, 2016</b>	<b>Dec 31, 2015</b>
Cash and short term invest.	199.5	143.9	Interest-bearing debt	75.3	75.0
Trade receivables	102.4	88.7	Trade liabilities	46.9	58.6
Inventories	87.8	79.8	Tax liabilities	35.4	46.3
Other current assets	33.7	28.7	Provisions	30.3	34.7
			Other liabilities	38.5	31.0
<b>Total current assets</b>	<b>423.4</b>	<b>341.0</b>	<b>Total current liabilities</b>	<b>226.3</b>	<b>245.6</b>
Fixed assets	294.2	256.6	Interest-bearing debt	374.5	200.2
Intangible assets	595.0	582.0	Employee benefits	34.4	32.4
Investments in associates	2.1	1.9	Provisions	0.0	0.0
Deferred tax asset	34.8	34.8	Deferred tax liabilities	54.9	57.9
Other non-current assets	23.3	7.0	Other liabilities	36.9	6.0
<b>Total non-current assets</b>	<b>949.5</b>	<b>882.3</b>	<b>Total non-current liabilities</b>	<b>500.7</b>	<b>296.6</b>
			<b>Shareholders' equity</b>	<b>645.9</b>	<b>681.2</b>
<b>Total assets</b>	<b>1,372.9</b>	<b>1,223.4</b>	<b>Total liabil. and equity</b>	<b>1,372.9</b>	<b>1,223.4</b>



# Cash flow statement

EURm

(IFRS)	9M 2016	9M 2015	Q3 2016	Q3 2015
Income before tax	83.3	126.6	48.1	36.4
Depreciation	46.4	35.0	15.9	11.1
<b>Cash flow from operations</b>	<b>60.0</b>	<b>108.5</b>	<b>45.2</b>	<b>36.2</b>
Capital expenditures	- 69.2	- 63.8	- 24.3	- 18.1
<b>Cash flow from investing activities</b>	<b>- 47.0</b>	<b>- 75.3</b>	<b>29.9</b>	<b>- 17.8</b>
Proceeds from borrowings	257.2	65.1	181.9	1.1
Repayment of borrowings	- 85.2	- 105.7	- 80.2	- 10.1
Dividends paid	- 34.6	- 22.8	0.0	0.0
Changes resulting from capital increase	0.0	0.9	0.0	0.0
<b>Cash flow from financing activities</b>	<b>49.7</b>	<b>- 78.3</b>	<b>58.8</b>	<b>- 12.3</b>
Change in cash and cash equivalents (incl. effects of changes in foreign exchange rates)	59.7	- 37.4	133.6	7.2
<b>Cash and cash equivalents at end of period</b>	<b>163.3</b>	<b>166.3</b>	<b>163.3</b>	<b>166.3</b>