ams at a glance
Sensing is life.

Our business
- Focused on high performance sensor solutions
- Sensor solutions, sensor ICs/sensor interfaces, related algorithms and software
- Small scale, low-power, highest sensitivity, tight integration
- Best-in-class solutions for leading OEMs

Our end markets
- Consumer (C) – FY 2018 76% of revenues
- Automotive, Industrial, Medical (AIM) – FY 2018 24% of revenues

By the numbers
- Around 9,000 employees worldwide
- Around 1,100 engineers
- 18 design centers, 3 manufacturing locations
- More than 35 years of design and manufacturing know-how
- Over 8,000 customers
ams strategy

Building the global leader in sensor solutions

True leadership in three sensor areas
- Optical
- Imaging
- Audio

Best-in-class performance per sensor area and in sensor system solutions
- Miniaturization and integration
  - 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/AIM
- Build broader customer base in each application
- Establish strong distribution channel

Financial model enabling long-term growth
- Focus on profitable growth
- Build strong margin profile across end markets
ams strategic pillars: focus for growth

Driving clear leadership in three sensing areas

- Optical sensing
  - 3D sensing incl. VCSEL illumination
  - Light analysis/proximity
  - Behind-OLED sensing
  - Long distance 1D ToF
  - Bio- and spectral sensing
  - New optical technologies

- Image sensing
  - High performance imaging
  - Global shutter sensors
  - Medical imaging
  - Micro cameras

- Audio sensing
  - MEMS microphone ICs
  - ANC noise cancelling

Other lines

- Position

Other sensing

- Position sensors (automotive/industrial)
3D sensing leader: recognized solution expertise

Leading player across 3D sensing technologies
- Unmatched portfolio of optical technologies, elements and IP
  - Highly differentiated VCSEL/VCSEL array illumination
  - System and solution design + architecting
  - Leading in WLO capabilities, DOE design, optical path
  - Advanced eye safety features
  - Algorithm + software layer proprietary IP
- Covering structured light (SL), time-of-flight (ToF), active stereo vision (ASV) as coexisting approaches

Recognized industry-leading solution expertise, successful in all 3D approaches
- Leadership in end-to-end system know-how for front-facing and world-facing
- Illumination focus drives success in all 3D approaches: high volume deployments for range of OEMs, first expected 2019 Android ramps ongoing, additional models 2019E
- Android ASV and ToF solutions shown at CES/MWC, fast time-to-market and optimized performance through partnerships with Face++, Qualcomm, others

Major position in 3D sensing market
- Key player in consumer market as adoption momentum for 3D sensing strengthens
- Strong position for large automotive market, supporting Level 2+, mid-term growth driver

First 2019 Android platforms launched, supporting Android for SL, ToF, ASV
3D sensing: broadening adoption, VCSEL leader

Android 3D VCSEL illumination wins/ramps, growing 3D portfolio, automotive traction
- Android ToF wins at different Asian OEMs, first 2019 launches ramping
- Android SL wins at Xiaomi + major Chinese smartphone OEM, launched
- Android ASV solution incl. ams VCSEL illumination and ASV win, launching 2019E
- Industry’s smallest 1D ToF proximity sensor (with lens) for 3D systems
- Innovative long distance 1D ToF up to 2.5m, strong early traction for mobile AF applications
- Major automotive solid-state LIDAR illumination win, expanding Tier 1 traction
- In-cabin optical 2D/3D sensing application developments, increasing OEM interest

Superior VCSEL technology: high differentiation drives ongoing market success and wins
- Broad VCSEL portfolio for illumination needs in all 3D technologies: SL aux. and ToF flood illumination, dot and ASV pattern projection, 1D ToF proximity
- Best-in-class high power VCSEL/high count VCSEL arrays for 3D
  - Smallest pitch: higher resolution, lower system cost
  - Leading power efficiency: up to >60% (lab) vs. typical 45-50% quantum efficiency
  - Best beam quality: very narrow beam divergence
  - True high power: from mW to W to 100+W
- External supply chain covers current needs, upcoming internal VCSEL line adds differentiation
ASV system solution shown at CES/MWC: high quality face-recognition 3D system

- Possible use cases: face-based unlock, secure mobile payment, portrait photo, avatars
- Full application processor software integration
- Compact thin form factor, stable operation, high illumination efficiency
- High quality 3D depth map, excellent performance in full daylight
- Ease of integration, cost-efficient solution
- Collaboration with Face++, Qualcomm Technologies, Bellus3D and OmniVision

Long distance 1D ToF solution introduced: high quality long range measurement

- Compact high performance VCSEL-based ToF solution for distance measurement and object detection
- Accurate measurements up to around 2.5 meters
- Significant early interest from consumer OEMs looking at applications such as laser detect autofocus (LDAF) for smartphone backside cameras
- First interest from other markets such as IoT
Optical sensing

Worldwide leader in light sensing solutions

- Clear #1 in optical sensing
- Leading in sensors, high performance optical systems, illumination solutions
- High quality optical sensing at Top 15 smartphone OEMs
- Emerging growth markets in automotive + industrial

Broad portfolio: 3D sensing incl. VCSEL, display management/proximity, other applications

- 3D sensing expert: recognized for HW, SW and system know-how, attractive partnerships
- High performance 3D/optical sensing VCSELs: consumer wins, automotive mid-term wins
- Innovative behind-OLED light/proximity sensing: major market success
- TrueColor display management, color ALS/proximity, ultra-small proximity for wireless earbuds

New applications emerging, strong growth potential in optical technologies

- Added momentum in biosensing: high quality blood pressure and other health data capture
- Pursuing mass market readiness for other new optical applications
- Optical technologies enable broader growth opportunities across sensing end markets
Optical sensing: Behind-OLED success

Behind-OLED light and proximity sensing solution

- Innovation in display management
- Behind-OLED sensing places optical sensor unit behind the OLED display
- Enables industry trend for maximum screen-to-body ratio and bezel-less phone designs
- Captures very low levels of light transmitted through OLED, combination of high sensitivity sensing and high performance algorithms
- Supports flicker detection for better pictures and foldable displays
- Very attractive growth opportunity in display management
- Wins in several major 2019 platforms launched in Q1, volume shipments expanding
- Strong market success, penetrating broad range of leading smartphone OEMs
True leader in advanced image sensing for industrial + medical

- **Industrial** – Leading provider of global shutter technology for advanced industrial applications worldwide
- High value global shutter CMOS imaging solutions for high speed machine vision, inspection, factory automation
- **Medical** – Global leader in medical imaging sensor solutions
- High performance, cost-optimized systems for computed tomography (CT) and digital X-ray, expanding market position in Asia
- Clearer images at lower radiation dose for better diagnostics in 3D-CT and digital X-ray
- NanEye miniature camera technology for medical endoscopy and industrial

Positive market momentum and attractive growth opportunities

- Very good traction in NanEye camera solutions
  - world’s smallest endoscopy cameras (≤1mm²)
  - increasing momentum in disposable medical endoscopes
- Market success and roadmap for innovation in growth market industrial vision
- Global shutter leadership creates opportunities in applications beyond industrial
Audio sensing

ANC (active noise cancellation)

- Best-in-class high performance noise reduction (>40dB)
- Clear leader in wired/wireless accessory market
  - portfolio of ANC solutions incl. hybrid ANC
  - significantly better audio experience
  - very low power, very small form factor
- Innovative solution offering high quality ANC
  for smallest-scale wireless earbuds
- Augmented hearing: higher transparency for speech and music
- Single wire power + communication interface for mobile audio charging POW:COM
- Continuing ANC market growth, adding wins in headphones and earbuds

MEMS microphone interface ICs

- Market leader in expanding high volume market
- Leading position and broad portfolio, low noise solutions and tight integration
- Ongoing growth in home assistant market creates further demand:
  expanding range of multi-microphone devices, up to 8 microphones
- Strong customer partnership focused on attractive segments

Strong OEM interest in latest ANC solutions, continuing good market traction
**Hybrid volume manufacturing model**

Internal: Differentiated manufacturing  
Outsourced/external: Standard process manufacturing

**Internal front-end wafer manufacturing, Austria**
- 8” CMOS/specialty analog to 180nm, 190+k wafers p.a.
- Optical filter production

**Internal optical manufacturing and backend + future VCSEL manufacturing, Singapore**
- Leader in high-end optical system technologies
- Advanced optical assembly/backend, WLO/optical filter production
- Major investment cycle for high volume optical/3D sensing production completed in 2018
- Internal VCSEL capacity investment: 6” 2,000 wspm line for highly differentiated products, completion in 2019E, expected front-end ramp from around year-end 2019

**External manufacturing partnerships for scalability and flexibility**
- High volume wafer suppliers (TSMC, UMC), standard and semi-custom packaging
- Outsourced VCSEL supply chain: Partnerships for volume manufacturing including HLJ Technology, supports current VCSEL volume needs

**In-house test, Philippines/Austria**
Global network

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

- **18 design centers**
  Austria, Belgium, China, Germany (2), Italy, India, Japan, Netherlands, Portugal, Spain, Switzerland (3), UK, USA (3)

- **Manufacturing locations**
  Austria, Singapore

- **Test center**
  Philippines
# Key figures

**USDm**

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
<th>Q1 2019</th>
<th>Q1 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total revenues</strong></td>
<td>1,619.7</td>
<td>1,208.0</td>
<td>390.2</td>
<td>418.2</td>
</tr>
<tr>
<td></td>
<td>+34.1%</td>
<td></td>
<td>-6.7%</td>
<td></td>
</tr>
<tr>
<td><strong>Gross margin (adjusted)</strong></td>
<td>32%</td>
<td>43%</td>
<td>32%</td>
<td>36%</td>
</tr>
<tr>
<td>(IFRS reported)</td>
<td>27%</td>
<td>39%</td>
<td>29%</td>
<td>33%</td>
</tr>
<tr>
<td><strong>Result from operations (EBIT)</strong></td>
<td>144.9</td>
<td>191.6</td>
<td>23.5</td>
<td>71.4</td>
</tr>
<tr>
<td>(adjusted)</td>
<td>14.6</td>
<td>86.2</td>
<td>-4.5</td>
<td>43.0</td>
</tr>
<tr>
<td>(IFRS reported)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Net result (adjusted)</strong></td>
<td>12.1</td>
<td>144.8</td>
<td>-9.5</td>
<td>92.3</td>
</tr>
<tr>
<td>(IFRS reported)</td>
<td>106.1</td>
<td>100.8</td>
<td>-9.5</td>
<td>71.2</td>
</tr>
<tr>
<td><strong>EPS (basic/diluted)</strong> (adjusted)</td>
<td>0.15 / 0.14</td>
<td>1.74 / 1.63</td>
<td>-0.12 / -0.12</td>
<td>1.20 / 1.12</td>
</tr>
<tr>
<td>CHF2)</td>
<td>0.15 / 0.13</td>
<td>1.77 / 1.66</td>
<td>-0.12 / -0.12</td>
<td>1.15 / 1.05</td>
</tr>
<tr>
<td>USD2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EPS (basic/diluted)</strong> (IFRS reported)</td>
<td>1.34 / 0.72</td>
<td>1.21 / 1.12</td>
<td>-0.12 / -0.12</td>
<td>0.92 / 0.86</td>
</tr>
<tr>
<td>CHF2)</td>
<td>1.29 / 0.70</td>
<td>1.23 / 1.14</td>
<td>-0.12 / -0.12</td>
<td>0.89 / 0.83</td>
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<tr>
<td>USD2)</td>
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</table>

1) Excl. acquisition-related, one-time restructuring 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 USD convertible bond
Financial results

USDm

Total revenues

- 2018: 1,619.7
- Q1 2018: 418.2
- Q1 2019: 390.2

Total revenues by market 2018

- Automotive, Industrial, Medical: 24%
- Consumer: 76%

Total revenues by region

- Asia/Pacific: 47%
- Americas: 20%
- Europe (EMEA): 33%

Total backlog

- Dec 31 2018: 331.4
- Mar 31 2019: 288.4

Consignment stock agreements approx. USD 13-15m
Financial results
USDm, % of revenues

Gross profit, gross margin (adj.) 1)

<table>
<thead>
<tr>
<th>Year</th>
<th>Gross Profit</th>
<th>Gross Margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>519.6</td>
<td>43.0%</td>
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<tr>
<td>2018</td>
<td>512.9</td>
<td>31.7%</td>
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<tr>
<td>Q1 18</td>
<td>150.0</td>
<td>35.9%</td>
</tr>
<tr>
<td>Q1 19</td>
<td>126.2</td>
<td>32.3%</td>
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R&D

<table>
<thead>
<tr>
<th>Year</th>
<th>R&amp;D</th>
<th>% of Revenues</th>
</tr>
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<tbody>
<tr>
<td>2017</td>
<td>243.0</td>
<td>20.1%</td>
</tr>
<tr>
<td>2018</td>
<td>271.5</td>
<td>16.8%</td>
</tr>
<tr>
<td>Q1 18</td>
<td>56.8</td>
<td>13.6%</td>
</tr>
<tr>
<td>Q1 19</td>
<td>79.0</td>
<td>20.3%</td>
</tr>
</tbody>
</table>

SG&A

<table>
<thead>
<tr>
<th>Year</th>
<th>SG&amp;A</th>
<th>% of Revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>158.1</td>
<td>13.1%</td>
</tr>
<tr>
<td>2018</td>
<td>161.4</td>
<td>10.0%</td>
</tr>
<tr>
<td>Q1 18</td>
<td>40.4</td>
<td>9.7%</td>
</tr>
<tr>
<td>Q1 19</td>
<td>44.3</td>
<td>11.3%</td>
</tr>
</tbody>
</table>

EBIT, EBIT margin (adj.) 1)

<table>
<thead>
<tr>
<th>Year</th>
<th>EBIT</th>
<th>EBIT Margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>191.6</td>
<td>15.9%</td>
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<td>2018</td>
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</tr>
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<td>71.4</td>
<td>17.1%</td>
</tr>
<tr>
<td>Q1 19</td>
<td>23.5</td>
<td>6.0%</td>
</tr>
</tbody>
</table>

1) Excl. acquisition-related, one-time restructuring and share-based compensation costs
Financial results
USDm, % of revenues

Net result, EPS (basic/diluted) (adj.) ¹)

Operating cash flow

Net debt, cash + short term investments

Capital expenditures

¹) Net result and earnings per share excluding valuation effect of the option element of the issued USD convertible bond
ams
Shaping the world with sensor solutions
## Profit and loss statement

**USDm**

<table>
<thead>
<tr>
<th>(IFRS)</th>
<th>2018</th>
<th>2017</th>
<th>Q1 2019</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Total revenues</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Products</td>
<td>1,619.7</td>
<td>1,208.0</td>
<td>390.2</td>
<td>418.2</td>
</tr>
<tr>
<td>• Foundry</td>
<td>1,568.0</td>
<td>1,149.4</td>
<td>373.5</td>
<td>407.3</td>
</tr>
<tr>
<td><strong>Gross profit</strong></td>
<td>51.7</td>
<td>58.6</td>
<td>16.7</td>
<td>10.9</td>
</tr>
<tr>
<td>• Gross margin (adjusted ¹)</td>
<td>440.5</td>
<td>465.4</td>
<td>114.9</td>
<td>136.6</td>
</tr>
<tr>
<td>• Gross margin (IFRS reported)</td>
<td>31.7%</td>
<td>43.0%</td>
<td>32.3%</td>
<td>35.9%</td>
</tr>
<tr>
<td><strong>Research and development</strong></td>
<td>-271.5</td>
<td>-243.0</td>
<td>-79.0</td>
<td>-56.8</td>
</tr>
<tr>
<td><strong>Selling, general and administrative</strong></td>
<td>-161.4</td>
<td>-158.1</td>
<td>-44.3</td>
<td>-40.4</td>
</tr>
<tr>
<td><strong>Other operating income/expenses</strong></td>
<td>7.5</td>
<td>22.1</td>
<td>4.1</td>
<td>3.6</td>
</tr>
<tr>
<td><strong>Result from operations (EBIT)</strong></td>
<td>14.6</td>
<td>86.2</td>
<td>-4.5</td>
<td>43.0</td>
</tr>
<tr>
<td>• EBIT margin (adjusted ¹)</td>
<td>8.9%</td>
<td>15.9%</td>
<td>6.0%</td>
<td>17.1%</td>
</tr>
<tr>
<td>• EBIT margin (IFRS reported)</td>
<td>0.9%</td>
<td>7.1%</td>
<td>-1.1%</td>
<td>10.3%</td>
</tr>
<tr>
<td><strong>Net financing costs</strong></td>
<td>89.1</td>
<td>-2.5</td>
<td>-2.2</td>
<td>-1.5</td>
</tr>
<tr>
<td><strong>Result before tax</strong></td>
<td>103.7</td>
<td>83.7</td>
<td>-7.3</td>
<td>72.6</td>
</tr>
<tr>
<td><strong>Income tax result</strong></td>
<td>2.4</td>
<td>17.1</td>
<td>-2.2</td>
<td>-1.5</td>
</tr>
<tr>
<td><strong>Net result (adjusted ²)</strong></td>
<td>12.1</td>
<td>144.8</td>
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</tr>
<tr>
<td><strong>Net result (IFRS reported)</strong></td>
<td>106.1</td>
<td>100.8</td>
<td>-9.5</td>
<td>71.2</td>
</tr>
</tbody>
</table>

¹) Excl. acquisition-related, one-time restructuring and share-based compensation costs
²) Net result excluding valuation effect of the option element of the issued convertible bond
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Cash and short term invest.</td>
<td>646.6</td>
<td>709.9</td>
<td>Interest-bearing debt</td>
<td>249.9</td>
<td>249.9</td>
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<tr>
<td>Trade receivables</td>
<td>126.4</td>
<td>137.4</td>
<td>Trade liabilities</td>
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<td>199.7</td>
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<td>Inventories</td>
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<td>351.9</td>
<td>Tax liabilities</td>
<td>20.3</td>
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<td>Other current assets</td>
<td>52.6</td>
<td>43.2</td>
<td>Provisions</td>
<td>95.2</td>
<td>91.6</td>
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<td>Assets held for sale</td>
<td>114.5</td>
<td>0.0</td>
<td>Other liabilities</td>
<td>58.9</td>
<td>63.1</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Liabil. associated w. assets held for sale</td>
<td>1.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Total current assets</td>
<td>1,264.9</td>
<td>1,242.5</td>
<td>Total current liabilities</td>
<td>577.4</td>
<td>622.9</td>
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<tr>
<td>Fixed assets</td>
<td>1,371.2</td>
<td>1,370.1</td>
<td>Interest-bearing debt</td>
<td>1,801.1</td>
<td>1,815.8</td>
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<tr>
<td>Intangible assets</td>
<td>1,380.3</td>
<td>1,387.3</td>
<td>Employee benefits</td>
<td>46.1</td>
<td>45.8</td>
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<tr>
<td>Investments in associates</td>
<td>3.2</td>
<td>3.4</td>
<td>Deferred tax liabilities</td>
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<td>74.6</td>
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<tr>
<td>Deferred tax asset</td>
<td>18.6</td>
<td>18.6</td>
<td>Other liabilities</td>
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<td>42.2</td>
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<tr>
<td>Other non-current assets</td>
<td>8.3</td>
<td>8.3</td>
<td>Total non-current liabilities</td>
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<td>1,978.4</td>
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<tr>
<td>Long-term financial assets</td>
<td>46.2</td>
<td>40.5</td>
<td>Shareholders’ equity</td>
<td>1,477.2</td>
<td>1,469.2</td>
</tr>
<tr>
<td>Total non-current assets</td>
<td>2,827.8</td>
<td>2,828.1</td>
<td>Total liabil. and equity</td>
<td>4,092.7</td>
<td>4,070.6</td>
</tr>
<tr>
<td>Total assets</td>
<td>4,092.7</td>
<td>4,070.6</td>
<td></td>
<td>4,092.7</td>
<td>4,070.6</td>
</tr>
</tbody>
</table>
## Cash flow statement

### USDm

<table>
<thead>
<tr>
<th>(IFRS)</th>
<th>2018</th>
<th>2017</th>
<th>Q1 2019</th>
<th>Q1 2018</th>
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<tbody>
<tr>
<td>Result before tax</td>
<td>103.7</td>
<td>83.7</td>
<td>-7.3</td>
<td>72.6</td>
</tr>
<tr>
<td>Depreciation</td>
<td>241.4</td>
<td>168.6</td>
<td>76.5</td>
<td>54.7</td>
</tr>
<tr>
<td><strong>Cash flow from operations</strong></td>
<td>358.2</td>
<td>-4.0</td>
<td>96.1</td>
<td>52.0</td>
</tr>
<tr>
<td>Capital expenditures</td>
<td>-468.9</td>
<td>-660.8</td>
<td>-87.9</td>
<td>-160.7</td>
</tr>
<tr>
<td><strong>Cash flow from investing activities</strong></td>
<td>-470.9</td>
<td>-584.6</td>
<td>-95.4</td>
<td>-188.5</td>
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<tr>
<td>Proceeds from borrowings</td>
<td>374.1</td>
<td>781.3</td>
<td>14.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Proceeds from issue of convertible bond</td>
<td>694.9</td>
<td>338.3</td>
<td>0.0</td>
<td>694.9</td>
</tr>
<tr>
<td>Repayment of debt</td>
<td>-359.8</td>
<td>-171.2</td>
<td>-40.3</td>
<td>-343.1</td>
</tr>
<tr>
<td>Dividends paid</td>
<td>-31.3</td>
<td>-28.4</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Changes resulting from capital increase</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Cash flow from financing activities</strong></td>
<td>461.6</td>
<td>780.9</td>
<td>-66.7</td>
<td>236.1</td>
</tr>
<tr>
<td>Change in cash and cash equivalents (incl. effects of changes in foreign exchange rates)</td>
<td>346.1</td>
<td>165.7</td>
<td>-63.3</td>
<td>94.8</td>
</tr>
<tr>
<td><strong>Cash and cash equivalents at end of period</strong></td>
<td>709.9</td>
<td>327.5</td>
<td>646.6</td>
<td>458.6</td>
</tr>
</tbody>
</table>