WE LEAD THE FUTURE

FINANCIAL STATEMENT PRESS CONFERENCE & CAPITAL MARKET DAY

MARCH 22, 2018
AGENDA (MORNING)

– WELCOME, DR. DIRK ROTHWEILER
– RESULTS 2017, DR. MATHIAS GOLLWITZER
– STRATEGY & OUTLOOK 2018, DR. DIRK ROTHWEILER
– Q&A SESSION
– LUNCH
AGENDA (AFTERNOON)

– FIRST SENSOR’S LIDAR AND CAMERA STRATEGY, MARTIN KÜMMEL
– FIRST SENSOR’S PRESSURE SENSOR FAMILY, DR. MARC SCHILLAGLIES
– INSIGHTS IN OUR PRODUCTION STRATEGY & SITES, DR. MATTHIAS PESCHKE
FINANCIAL STATEMENT 2017

MILESTONE ON OUR WAY TOWARDS PROFITABLE GROWTH

DR. MATHIAS GOLLWITZER, CFO
FINANCIAL STATEMENT 2017

2017 = Milestone for further sustainable growth and profitability

Operative Actions
- continuous.improvement@FIS-KPI.system
- dedicated actions in 2018

Strategic Actions
- Improvements based on the five pillars of our strategy for profitable growth
OPERATIVE ACTIONS

FIS KPI’s: Interface to non-financial performance indicators

KPI - Umsatz
- Sales - Book To Bill
- Sales - Neukundengeschäft
- Sales - Leads / Auftragseingang
- Sales - Lead/Angebote
- Sales - Angebote/Auftragseingang
- Sales - NBO / Angebote
- Sales - NBO conversion rate
- Sales - Umsatz / FTE
- CCD - Innovationskraft
- CCD - Time To Market

KPI - Fixkosten
- IT - Beanspruchungsgrad
- IT - Bearbeitungsgrad
- IT - Reaktionszeit
- IT - Betreuungsrate
- IT - Verfügbarkeit
- IT - Kosten/Umsatz
- CCD - Produktivität
- Einkauf - Lieferqualität

KPI - Vorräte
- Einkauf - Liefermengentreue
- Einkauf - Liefertermintreue

KPI - Forderungen
- Sales - Liefertreue
- Finanzen - DSO

KPI - Verbindlichkeiten aus LL
- Finanzen - DPO

KPI - Deckungsbeitrag
- Ausbeute 
- Materialeinsatz 
- Fertigungszeit 
- Auftragsdurchlaufzeit 
- Leistung pro Mitarbeiter 
- Beschäftigungsgrad 
- Weiterbildungquote 
- Fehlzeitenquote 
- Reklamationsquote 
- Qualität 
- Krankheitsquote 
- Ungewollte 
- Fluktuationsquote

KPI - Betriebsnotwendiges AV
- CCP - Anlagenverfügbarkeit

ROCE > = WACC

Kapitalumschlag

Betriebsnotwendiges Vermögen

Umsatz

EBIT in % des Umsatzes

EBIT

Umsatz

Deckungsbeitrag

Fixkosten

Netto Umlaufvermögen

betriebsnotwendiges Anlagevermögen

Vorräte

Forderungen

Verbindlichkeiten aus LL

Deckungsbeitrag

Fixkosten

Operating Actions

FIS KPI’s: Interface to non-financial performance indicators
OPERATIVE ACTIONS

Financial Statements indicate different “Need for actions”

Focus on “Efficiency in Operations”

Focus on “Optimized Structure of Capital Employed”

Focus on “Freedom with Free Cash Flow”
## P+L STATEMENT

EBIT improved, one-time effect in financial results reduce net income

<table>
<thead>
<tr>
<th>In € million</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>150.1</td>
<td>147.5</td>
</tr>
<tr>
<td>Other operating income</td>
<td>2.9</td>
<td>3.3</td>
</tr>
<tr>
<td>Change in inventory</td>
<td>-1.2</td>
<td>-1.5</td>
</tr>
<tr>
<td>Other own work capitalized</td>
<td>1.4</td>
<td>2.5</td>
</tr>
<tr>
<td>Cost of material</td>
<td>-72.4</td>
<td>-69.3</td>
</tr>
<tr>
<td><strong>Gross profit</strong></td>
<td><strong>80.8</strong></td>
<td><strong>82.5</strong></td>
</tr>
<tr>
<td>Personnel expenses</td>
<td>-44.1</td>
<td>-46.6</td>
</tr>
<tr>
<td>Other operating expenses</td>
<td>-17.3</td>
<td>-16.3</td>
</tr>
<tr>
<td><strong>Operating result (EBITDA)</strong></td>
<td><strong>19.4</strong></td>
<td><strong>19.6</strong></td>
</tr>
<tr>
<td>Depreciation and amortization</td>
<td>-7.0</td>
<td>-6.8</td>
</tr>
<tr>
<td><strong>Operating result before goodwill amortization (EBITA)</strong></td>
<td><strong>12.4</strong></td>
<td><strong>12.8</strong></td>
</tr>
<tr>
<td>Goodwill amortization</td>
<td>-2.4</td>
<td>-2.3</td>
</tr>
<tr>
<td><strong>Earnings before interest and tax (EBIT)</strong></td>
<td><strong>10.0</strong></td>
<td><strong>10.6</strong></td>
</tr>
<tr>
<td>Financial result</td>
<td>-1.3</td>
<td>-3.4</td>
</tr>
<tr>
<td><strong>Income before tax (EBT)</strong></td>
<td><strong>8.7</strong></td>
<td><strong>7.1</strong></td>
</tr>
<tr>
<td>Taxes</td>
<td>-2.6</td>
<td>-2.8</td>
</tr>
<tr>
<td><strong>Net income</strong></td>
<td><strong>6.1</strong></td>
<td><strong>4.3</strong></td>
</tr>
</tbody>
</table>
## P+L STATEMENT

Order backlog and sales funnel improved

<table>
<thead>
<tr>
<th></th>
<th>in € million</th>
<th>Sales</th>
<th>Order Income</th>
<th>Order Backlog</th>
<th>New Billing Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Standard products</td>
<td>Sensor Solutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td>42.2</td>
<td>105.3</td>
<td>92.6</td>
<td>253.6</td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td>41</td>
<td>109.1</td>
<td>82.2</td>
<td>182.8</td>
</tr>
</tbody>
</table>

### Comments
- Industrial target market: Growth of 3.6%
- Medical target market: customer based postponements
- Mobility target market: almost compensated major order of approximately €10 million which expired last

### Actions
- Focus on selected New Target Accounts
- Improving Cross-selling on existing Customer Base
- New Product Launches (HTD/L-Serie und Inertial)
- Enlargement of Distribution Product Portfolio
P+L STATEMENT

2017 EBIT impact by pricing, scale effects and personnel costs

<table>
<thead>
<tr>
<th>In € million</th>
<th>EBIT FY16</th>
<th>volume current products</th>
<th>pricing current product</th>
<th>volume &amp; pricing new projects</th>
<th>other</th>
<th>consultancy fees</th>
<th>wages/salaries</th>
<th>severance payment</th>
<th>quality costs</th>
<th>insurance</th>
<th>SAP</th>
<th>new projects</th>
<th>EBIT FY17</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>1.4</td>
<td>0.2</td>
<td>2.1</td>
<td>0.3</td>
<td>1.0</td>
<td>1.5</td>
<td>0.6</td>
<td>0.3</td>
<td>0.6</td>
<td>0.4</td>
<td>0.7</td>
<td></td>
<td>5.0</td>
</tr>
</tbody>
</table>

**Actions**

- Insourcing of certain processes in semiconductor production
- Production layout follows product value chain
- Make “and” buy decision in operations
- Further screening of our product-portfolio (“DB 40”)
- Launch of “MEMS” and “OPTO” projects
P+L STATEMENT

Moderate increase in salaries/wages

In € million

Salary/Wages

<table>
<thead>
<tr>
<th>Year</th>
<th>Salary/Wages</th>
<th>+5.6%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>46.6</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>44.1</td>
<td></td>
</tr>
</tbody>
</table>

Breakdown 2017

<table>
<thead>
<tr>
<th>Component</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wage/salary adj.</td>
<td>0.8</td>
</tr>
<tr>
<td>Indemnity</td>
<td>0.6</td>
</tr>
<tr>
<td>New hire</td>
<td>0.6</td>
</tr>
</tbody>
</table>

FTE 2017 YE 798 (PY 804)

<table>
<thead>
<tr>
<th>Department</th>
<th>FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>476</td>
</tr>
<tr>
<td>Others</td>
<td>133</td>
</tr>
<tr>
<td>Sales</td>
<td>96</td>
</tr>
<tr>
<td>Development</td>
<td>93</td>
</tr>
</tbody>
</table>

Personnel Cost in % Sales

<table>
<thead>
<tr>
<th>Department</th>
<th>Cost %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>14.1%</td>
</tr>
<tr>
<td>Others</td>
<td>8.3%</td>
</tr>
<tr>
<td>Sales</td>
<td>5.0%</td>
</tr>
<tr>
<td>Development</td>
<td>4.2%</td>
</tr>
</tbody>
</table>

Comments

- Performance-related components in all types of remuneration
- “Brain drain” especially in Dresden

Actions

- Activities for employee retention and recruitment
P+L STATEMENT
Other expenses slightly reduced

In € million

Other Expenses

<table>
<thead>
<tr>
<th>Year</th>
<th>Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>16.3</td>
</tr>
<tr>
<td>2016</td>
<td>17.3</td>
</tr>
</tbody>
</table>

Breakdown 2017

- Costs of premises: 2.8
- Sales/marketing/travel expenses: 2.5
- Maintenance and repairs: 1.7
- Legal and consultancy fees: 1.1
- IT-costs: 1.1

Comments
- Decrease in consultancy fees

Actions
- Maintenance: negotiation of service contracts
- IT-Cost: Hosting and maintenance for SAP to be levelled out by IT Savings in other domains
P+L STATEMENT

One-time effect due to closing of hedging contracts and swaps

In € million

Financial Result

<table>
<thead>
<tr>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>-3.4</td>
<td>-1.3</td>
</tr>
</tbody>
</table>

Breakdown 2017

<table>
<thead>
<tr>
<th>Category</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>currency; interest expenses</td>
<td>-2.3</td>
<td></td>
</tr>
<tr>
<td>hedging</td>
<td>-1.2</td>
<td></td>
</tr>
<tr>
<td>swap</td>
<td>-0.4</td>
<td></td>
</tr>
<tr>
<td>other financial income</td>
<td>0.5</td>
<td></td>
</tr>
</tbody>
</table>

Comments

Actions

- Natural hedging
Financial Statement 2017

BALANCE SHEET

Coverage: Equity and loans > 1 y. / assets* = 85 %

In € million

<table>
<thead>
<tr>
<th>Assets</th>
<th>Equity and Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>2017</td>
</tr>
<tr>
<td>23.8</td>
<td>25.5</td>
</tr>
<tr>
<td>3.9</td>
<td>3.3</td>
</tr>
<tr>
<td>18.4</td>
<td>20.8</td>
</tr>
<tr>
<td>25.9</td>
<td>24.6</td>
</tr>
<tr>
<td>82.1</td>
<td>85.4</td>
</tr>
<tr>
<td></td>
<td>134.1</td>
</tr>
<tr>
<td>114.1</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>2016</td>
</tr>
<tr>
<td>13.8</td>
<td>8.6</td>
</tr>
<tr>
<td>7.9</td>
<td>8.4</td>
</tr>
<tr>
<td>48.3</td>
<td>48.2</td>
</tr>
<tr>
<td>81.9</td>
<td>77.5</td>
</tr>
</tbody>
</table>

*(w/o cash and cash equivalents)

Comments

- Equity + Long Term loans (> 1 y) = 114.1 Mio. €
- Equity ratio 2017: 51.3%
- Net working capital Ratio 2017: 25.1% ➔ 90 days

Actions

- Repayment of promissory notes: 12 Mio. € ➔ 12/2018
- Agreement for a long term loan (€ 13 million; ➔ 2027; interest rate 1.15 %)
BALANCE SHEET – INTANGIBLE ASSETS

Investment in SAP / conservative booking of strategic projects

In € million

Intangible Assets

<table>
<thead>
<tr>
<th>Year</th>
<th>Intangible assets</th>
<th>Goodwill</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>7.3</td>
<td>20.2</td>
</tr>
<tr>
<td>2016</td>
<td>5.3</td>
<td>22.4</td>
</tr>
</tbody>
</table>

Breakdown 2017

- SAP: 2.4 € million
- Pressure/Flow: 0.7 € million
- OPTO: 0.7 € million
- Other: 0.2 € million
- Inertial: 0.1 € million

Comments

Actions

- Footprint in FLOW and OPTO Projects
- Project Controlling: Stage Gate Process
BALANCE SHEET

Investments: 7.1 million for new technologies & production capacity

In € million

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>33.0</td>
<td>36.4</td>
</tr>
</tbody>
</table>

Comments

Workload 2017 based on “planned capacity”:
- OPTO: 49%
- MEMS: 97%
- AVT: 80%

Actions

Investments 2018: € 8-10 million:
- Insourcing
- 6 Inch
- Automatisation
BALANCE SHEET

Net working capital ratio 2017: 25.1% / 90 days

In € million

Inventory

<table>
<thead>
<tr>
<th></th>
<th>Raw Material</th>
<th>Unfinished Goods</th>
<th>Finished Goods</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>11.2</td>
<td>6.3</td>
<td>7.1</td>
</tr>
<tr>
<td>2016</td>
<td>10.7</td>
<td>6.5</td>
<td>8.7</td>
</tr>
</tbody>
</table>

Current assets:

- Inventory: Shut down production -> SAP
- Receivables: Overdue > 30 days: 11.8%

Comments

Actions

KVP-Targets
Free cashflow amounts to € 3.5 million

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF Operations</td>
<td>16.6</td>
<td>16.0</td>
</tr>
<tr>
<td>CF Investments</td>
<td>-6.5</td>
<td>-12.5</td>
</tr>
<tr>
<td>Free CF</td>
<td>10.0</td>
<td>3.5</td>
</tr>
<tr>
<td>CF Financing</td>
<td>-7.8</td>
<td>-1.7</td>
</tr>
<tr>
<td>Total CF</td>
<td>2.3</td>
<td>1.8</td>
</tr>
<tr>
<td>Cash</td>
<td>23.8</td>
<td>25.5</td>
</tr>
</tbody>
</table>

Comments
- Open credit line: €11.1 million
- Currently no factoring
- Covenants:
  - EBITDA/Net Debt: 1.16 ➔ cap 3.5
  - EBITDA/Interest: 11.04 ➔ cap 4.25

Actions
### SUMMARY

#### Priorities 2018ff

**Top Initiatives**

- Insourcing and 6 inch
- Product portfolio / DB 40
- Further improvements by lead time and on-time delivery
STRATEGIC PERSPECTIVE FOR PROFITABLE GROWTH

RESULTS 2017 & OUTLOOK 2018

DR. DIRK ROTHWEILER, CEO
STRATEGIC PERSPECTIVE FOR PROFITABLE GROWTH

We generate and utilize economies of scale in 4 dimensions

1. Target Markets
   - Industrial
   - Medical
   - Mobility

2. Key Customers & Products
   - Key Customers > 1 M€ p.a.
   - Key Products > 1 M€ p.a.

3. Forward Integration
   - Sensor System
   - Sensor
   - Component
   - Chip

4. Internationalization
   - Germany
   - Europe
   - North America
   - Asia

5. Operative Excellence
# STRATEGIC PERSPECTIVE FOR PROFITABLE GROWTH

## Dimension 1: Clear focus on our target markets

<table>
<thead>
<tr>
<th>1 Target Markets</th>
<th>2 Key Customers &amp; Products</th>
<th>3 Forward Integration</th>
<th>4 Internationalization</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Industrial</strong></td>
<td>Key Customers &gt; 1 M€ p.a.</td>
<td>Sensor System</td>
<td>Germany</td>
</tr>
<tr>
<td><strong>Medical</strong></td>
<td>Key Products &gt; 1 M€ p.a.</td>
<td>Sensor</td>
<td>Europe</td>
</tr>
<tr>
<td><strong>Mobility</strong></td>
<td></td>
<td>Component Chip</td>
<td>North Amerika</td>
</tr>
</tbody>
</table>

## Key Customers & Products
- Key Customers > 1 M€ p.a.
- Key Products > 1 M€ p.a.

## Forward Integration
- Sensor System
- Sensor
- Component
- Chip

## Internationalization
- Germany
- Europe
- North Amerika
- Asia

## Operative Excellence
**DIMENSION 1: CLEAR FOCUS ON OUR TARGET MARKETS**

Our target markets are growth markets

<table>
<thead>
<tr>
<th>Industry</th>
<th>Growth 2018</th>
<th>Growth 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td>+ 6.0%</td>
<td>+ 10.8%</td>
</tr>
<tr>
<td>Medical</td>
<td>+ 11.0%</td>
<td></td>
</tr>
<tr>
<td>Mobility</td>
<td>+ 13.0%</td>
<td>+ 10.8%</td>
</tr>
</tbody>
</table>

- **AMA Verband für Sensorik + Messtechnik**: + 8.0% in 2018
- **Gartner**: + 7.5% in 2018
DIMENSION 1: CLEAR FOCUS ON OUR TARGET MARKETS

We participate in market growth

in € million

<table>
<thead>
<tr>
<th>Year</th>
<th>Industrial</th>
<th>Medical</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>68.4</td>
<td>20.4</td>
<td>35.2</td>
</tr>
<tr>
<td>2015</td>
<td>74.1</td>
<td>23.8</td>
<td>39.8</td>
</tr>
<tr>
<td>2016</td>
<td>72.5</td>
<td>30.7</td>
<td>46.9</td>
</tr>
<tr>
<td>2017</td>
<td>75.1</td>
<td>27.9</td>
<td>44.5</td>
</tr>
</tbody>
</table>

CAGR:
- Industrial: 3.2%
- Medical: 11.0%
- Mobility: 8.1%
### Strategic Perspective for Profitable Growth

#### Dimension 2: Clear focus on key customers & key products

<table>
<thead>
<tr>
<th></th>
<th>Target Markets</th>
<th>Key Customers &amp; Products</th>
<th>Forward Integration</th>
<th>Internationalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Industrial</td>
<td>Key Customers</td>
<td>Sensor System</td>
<td>Germany</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; 1 M€ p.a.</td>
<td>Sensor</td>
<td>Europe</td>
</tr>
<tr>
<td></td>
<td>Medical</td>
<td>Key Products</td>
<td>Component</td>
<td>North Amerika</td>
</tr>
<tr>
<td></td>
<td>Mobility</td>
<td>&gt; 1 M€ p.a.</td>
<td>Chip</td>
<td>Asia</td>
</tr>
</tbody>
</table>

**Dimension 5: Operative Excellence**
DIMENSION 2: CLEAR FOCUS ON KEY CUSTOMERS & PRODUCTS

Why is this efficient?

**Key Customers**

- Single respective product developments result in relatively large quantities and therefore sales volumes.
- Sales per head in both sales and engineering increases – our existing team will be able to handle larger revenue streams.
- „Mix & Noise“ in operations are decreased due to reduced parts variety and transactions per revenue.
- Our supply chain and own production will gain in productivity and can be managed with fewer resources per revenue.
- With higher quantities per part our purchasing power will increase.
- With more varietal purity we increase the stability of our value creation process.
- Lead time, on time delivery and quality will improve as a result.

**Key Products**

- Our growth becomes more scalable and our profitability increases.
DIMENSION 2: CLEAR FOCUS ON KEY CUSTOMERS

In 2017, we increased number of and sales with key customers
Thinking Joined-Up Together

LMI Multi-Sensor System

On a tailored printed circuit board, this solution combines electronic components with four of our LMI differential pressure sensors that can detect the smallest differences in pressure.
Assembly of Arrays

When building large detector arrays, we mount sensor chips on a backing using state-of-the-art flip chip technology to achieve the best possible fitting accuracy with this solution.
Avalanche Photodiodes

Our high-performance diodes measure light pulses in the nanosecond range. As one of the leading manufacturers, First Sensor also develops and produces array solutions for LIDAR systems.
DIMENSION 2: CLEAR FOCUS ON KEY PRODUCTS

In 2017, we increased number of and sales with key products, too
Staying One Step Ahead Together

STARre K Series
Our standard piezo-resistive components are used in industry and medical technology. Pressure sensor chips based on STARre technology ensure their long-term stability and precision.
Irreplaceable
Together

H Series
Our standard piezo-resistive pressure sensors measure extremely low pressures in dry, non-corrosive gases. Their applications include fields such as medical technology, measurement technology and air conditioning technology.
Responsibility Together

sensEdge Pressure Sensors
High-pressure sensors based on sensEdge technology are suitable for pressure changes up to 3,000 bar. Our solutions are used in steer-by-wire systems, for example.
### Strategic Perspective for Profitable Growth

#### Dimension 3: Clear focus on forward integration

<table>
<thead>
<tr>
<th>1</th>
<th>Target Markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td></td>
</tr>
<tr>
<td>Medical</td>
<td></td>
</tr>
<tr>
<td>Mobility</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2</th>
<th>Key Customers &amp; Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key Customers &gt; 1 M € p.a.</td>
<td></td>
</tr>
<tr>
<td>Key Products &gt; 1 M€ p.a.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3</th>
<th>Forward Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor System</td>
<td></td>
</tr>
<tr>
<td>Sensor</td>
<td></td>
</tr>
<tr>
<td>Component</td>
<td></td>
</tr>
<tr>
<td>Chip</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4</th>
<th>Internationalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td></td>
</tr>
<tr>
<td>North Amerika</td>
<td></td>
</tr>
<tr>
<td>Asia</td>
<td></td>
</tr>
</tbody>
</table>

| 5 | Operative Excellence |

---

First Sensor

www.first-sensor.com
DIMENSION 3: CLEAR FOCUS ON FORWARD INTEGRATION

We base our forward integration initiatives on clear product roadmaps.

Integration of sensing technologies for profitably growing businesses.

- Light
- Level
- Pressure
- Radiation
- Flow
- Acceleration

Integrated Manufacturing Service

Multi Sensor Systems
FORWARD INTEGRATION

One example is a multi sensor system for HVAC applications
Strategic Perspective for Profitable Growth

PERSPECTIVE FOR PROFITABLE GROWTH
Dimension 4: Clear focus on internationalization

1. Target Markets
   - Industrial
   - Medical
   - Mobility

2. Key Customers & Products
   - Key Customers > 1 M€ p.a.
   - Key Products > 1 M€ p.a.

3. Forward Integration
   - Sensor System
   - Sensor
   - Component
   - Chip

4. Internationalization
   - Germany
   - Europe
   - North Amerika
   - Asia

5. Operative Excellence
DIMENSION 4: CLEAR FOCUS ON INTERNATIONALIZATION

We generated further growth in our key sales regions

<table>
<thead>
<tr>
<th>Region</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>DACH</td>
<td>62.6</td>
<td>70.3</td>
<td>75.1</td>
<td>74.3</td>
</tr>
<tr>
<td>Rest of Europe</td>
<td>45.1</td>
<td>46.2</td>
<td>48.8</td>
<td>40.4*</td>
</tr>
<tr>
<td>North America</td>
<td>4.4</td>
<td>8.2</td>
<td>11.9</td>
<td>17.3</td>
</tr>
<tr>
<td>Asia</td>
<td>11.5</td>
<td>12.7</td>
<td>13.7</td>
<td>14.9</td>
</tr>
</tbody>
</table>

5.9% CAGR

-3.6% CAGR*

57.9% CAGR

8.9% CAGR

* expired mobility order
We have set up our sales force for accelerating growth
PERSPECTIVE FOR PROFITABLE GROWTH
The Fundament: focus on operative excellence

1. Target Markets
   - Industrial
   - Medical
   - Mobility

2. Key Customers & Products
   - Key Customers
     > 1 M€ p.a.
   - Key Products
     > 1 M€ p.a.

3. Forward Integration
   - Sensor System
   - Sensor
   - Component
   - Chip

4. Internationalization
   - Germany
   - Europe
   - North Amerika
   - Asia

5. Operative Excellence
# THE FUNDAMENT: FOCUS ON OPERATIVE EXCELLENCE

Our current core initiatives

<table>
<thead>
<tr>
<th>Top Initiatives</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>T’s &amp; C’s Harmonization</td>
<td>✔️</td>
</tr>
<tr>
<td>Harmonized Core Processes</td>
<td>✔️</td>
</tr>
<tr>
<td>OneERP</td>
<td>✔️ progressing</td>
</tr>
<tr>
<td>Lead Time, On-Time Delivery, Quality</td>
<td>✔️ continuous</td>
</tr>
<tr>
<td>Portfolio Optimization</td>
<td>ongoing</td>
</tr>
<tr>
<td>Portfolio Consolidation</td>
<td>ongoing</td>
</tr>
</tbody>
</table>
THE FUNDAMENT: FOCUS ON OPERATIVE EXCELLENCE
Continued focus on portfolio optimization and consolidation

<table>
<thead>
<tr>
<th>Top Initiatives</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>T’s &amp; C’s Harmonization</td>
<td>✔</td>
</tr>
<tr>
<td>Core Processes</td>
<td>✔</td>
</tr>
<tr>
<td>OneERP</td>
<td>✔ progressing</td>
</tr>
<tr>
<td>Lead Time, On-Time Delivery, Quality</td>
<td>✔ continuous</td>
</tr>
<tr>
<td>Portfolio Optimization</td>
<td>ongoing</td>
</tr>
<tr>
<td>1. Margin structure analysed</td>
<td>✔</td>
</tr>
<tr>
<td>2. Cost reduction potential identified and improvement projects started</td>
<td>✔</td>
</tr>
<tr>
<td>3. Continued project execution</td>
<td>2018 / 2019</td>
</tr>
<tr>
<td>Portfolio Consolidation</td>
<td>2018 / 2019</td>
</tr>
</tbody>
</table>
THE FUNDAMENT: FOCUS ON OPERATIVE EXCELLENCE
Portfolio consolidation: Casestudy for one selected product family

<table>
<thead>
<tr>
<th>CUSTOMERS</th>
<th>PRODUCTS</th>
<th>A products</th>
<th>B products</th>
<th>C products</th>
</tr>
</thead>
<tbody>
<tr>
<td>A customers</td>
<td>11 % products</td>
<td>11 %</td>
<td>8 %</td>
<td>5 %</td>
</tr>
<tr>
<td>A customers</td>
<td>69 % customers</td>
<td>69 %</td>
<td>6 %</td>
<td>&gt; 1 %</td>
</tr>
<tr>
<td>B customers</td>
<td>6 %</td>
<td>6 %</td>
<td>12 %</td>
<td>17 %</td>
</tr>
<tr>
<td>B customers</td>
<td>12 %</td>
<td>12 %</td>
<td>9 %</td>
<td>1%</td>
</tr>
<tr>
<td>C customers</td>
<td>&gt; 1 %</td>
<td>&gt; 1 %</td>
<td>3 %</td>
<td>38 %</td>
</tr>
<tr>
<td>C customers</td>
<td>&gt; 1 %</td>
<td>&gt; 1 %</td>
<td>&gt; 1 %</td>
<td>2 %</td>
</tr>
</tbody>
</table>

Top Measures

- Threshold order quantities for new products
- Minimum order quantities for existing products
- Bundling of demand
- Recommendation of product alternatives
- Last call options if necessary
We generate and utilize economies of scale in 4 dimensions:

1. **Target Markets**
   - Industrial
   - Medical
   - Mobility

2. **Key Customers & Products**
   - Key Customers
     - > 1 M€ p.a.
   - Key Products
     - > 1 M€ p.a.

3. **Forward Integration**
   - Sensor System
   - Sensor
   - Component
   - Chip

4. **Internationalization**
   - Germany
   - Europe
   - North Amerika
   - Asia

5. **Operative Excellence**
OUR GUIDANCE 2018

Improving our profitability remains our focus

SALES REVENUES

150 - 160
MILLION EURO

EBIT MARGIN

7 - 9
PERCENT
**OUR GUIDANCE 2018**

Expected sales level of €150 million to €160 million

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Good order backlog</td>
<td>- Late order placement may result in 2019 shipments</td>
</tr>
<tr>
<td>- Ramp up of customer-specific solutions projects</td>
<td>- Customer demand may vary</td>
</tr>
<tr>
<td>- Increased demand for standard products</td>
<td>- Product launches of customers may delay</td>
</tr>
<tr>
<td></td>
<td>- Risks associated with our One ERP project</td>
</tr>
</tbody>
</table>
OUR GUIDANCE 2018
Expected EBIT margin level of 7 to 9 percent

Opportunities

- Economies of scale: focus on key products and key customers
- Forward integration: higher level of value add
- Operative Excellence: continuous improvement

Risks

- Higher marketing expenses for the introduction of new technologies and products, e.g. inertial sensors, senseEdge
- Effects such as fluctuations in purchase prices, risks in process stability, increases in wages and salaries
- Risks associated with our One ERP project
As a leading international sensor manufacturer, we will achieve 10% average growth and a 10% EBIT margin with tailor-made customer-specific sensor solutions and innovative platform-based standard products, thereby creating added value for our customers, investors and employees.

Our corporate values of innovation, excellence and proximity form the compass for our actions.
Q&A SESSION
AGENDA (AFTERNOON)

– FIRST SENSOR’S LIDAR AND CAMERA STRATEGY, MARTIN KÜMMEL
– FIRST SENSOR’S PRESSURE SENSOR FAMILY, DR. MARC SCHILLAGLIES
– INSIGHTS IN OUR PRODUCTION STRATEGY & SITES, DR. MATTHIAS PESCHKE
FIRST SENSOR’S LIDAR AND CAMERA STRATEGY FOR DRIVER ASSISTANCE & AUTONOMOUS DRIVING

MARTIN KÜMMEL, PRODUCT MANAGER
FRAMeWORK CONDITIONS

Intensified interest in driver assistance & autonomous driving

**Market**
- Demand for driver assistance systems for special & commercial vehicles significantly increased
- Higher interest in self-driving vehicles, in particular commercial vehicles
- New players in the automobile sector: Connection with environment & other vehicles (e.g. Google, Apple)
- Increasing electrification is changing the market: Consolidation, M&A & technology boom

**Society & Politics**
- Customer requirements (especially with regard to comfort & security) force development of new products
- Legal requirements for commercial vehicles: Optional ADAS equipment becomes new standard

**Competition**
- **Passenger cars**
  - Cameras: Tier1 with own design; produced in-house or by EMS provider
  - Complete systems provided by Tier 1
- **Special & commercial vehicles**
  - Smaller Tier1 (Customers / competitors)
  - Cooperation opportunities with system development
The camera & LIDAR market is expected to reach $52.5B in 2032
OVERALL OBJECTIVES

Provider of innovative sensors and sensor systems in vehicle business

1. Expanding product portfolio and increase of added value in the LiDAR and cameras segments
2. Market expansion: Market entry into special & commercial vehicles with selected applications and systems
3. From sensor to system: Camera, LiDAR >> advanced driving assistance systems (ADAS) & sensor fusion

Positioning as focused provider of innovative sensors and sensor systems in OEM & Tier 1 vehicle business
From sensor integration to sensor fusion: First Sensor's LiDAR and Camera Strategy for driver assistance & autonomous driving

1. EXPANDING OUR PRODUCT PORTFOLIO

For autonomous driving a combination of sensors is necessary
1. EXPANDING OUR PRODUCT PORTFOLIO

We concentrate on LiDAR and camera applications

Mid range LiDAR
- Accident avoidance & reduction
- Pedestrian protection
- Distance measurement

Front View
- Sign recognition
- Pedestrian detection
- Lane keep assist

Mirror replacement
- Blind spot detection
- Avoid mirrors

Rear View
- Park assist
- Collision warning

LIDAR

Camera

360° Area View System
- Park assist
- Blind spot detection
- Driver information

Driver monitoring
1. EXPANDING OUR PRODUCT PORTFOLIO
LiDAR: We differentiate through 8 key respects

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20+ years experience in APD production</td>
<td>2</td>
<td>Customizing capability for die, package and modules in-house</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>3</td>
<td>ISO TS 16949 certified production and testing</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>4</td>
<td>Sensor only company</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>5</td>
<td>Lowest noise</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>6</td>
<td>Highest sensitivity for 905nm</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>7</td>
<td>AEC-Q 101 qualified APD arrays</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>8</td>
<td>Innovative roadmap</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From sensor integration to sensor fusion: First Sensor’s LiDAR and Camera Strategy for driver assistance & autonomous driving
We have a long standing experience and expertise

- Single APD with amplifier
- DARPA Urban Challenge; First Sensor APDs in all winning teams
- Industrial hybrids (APD+TIA in one package)
- Few Pixel APD-Array in SMD package for ACC / AEC-Q 101 qualified by FIS
- 12 Pixel APD-Array in ceramic package for ACC
- Gesture recognition with 64 pixel APD-Array
- Receiver module with APD-Array, HV, TIA, MUX, Timing discriminator
- Receiver module with APD and electronics integrated in one package
LIDAR

Next steps: Securing and further developing our competitive advantage

1. “First LiDAR”: Crossfunctional tiger team for enhanced impact
   Marketing/Sales/Solution/Development

2. Alliances with complimentary suppliers for extended reach
   Solutions/Development

3. Innovative product roadmap and forward integration to ensure market leadership
   Solutions/Development

4. Cost down to meet future requirements of volume markets
   Production
LIDAR

Our activities are aimed at automotive and industrial applications

Automotive

- Safety, comfort and cost reduction
  infrastructure drive development of partly
  or fully autonomous vehicles
- First adaptation: special vehicles
- Large volume: passenger car

Industrial

- Mix of mature and emerging applications
- Industrial area applications include
  → Unmanned guided vehicles (UGV)
  → Security scanners
  → Mapping applications
  → Range finding (Point measurement)
1. EXPANDING OUR PRODUCT PORTFOLIO

Camera: We differentiate through 8 key respects

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Long-standing camera experience</td>
<td>2</td>
<td>Automotive network in new markets</td>
</tr>
<tr>
<td>3</td>
<td>Specialist for harsh environment and low-light applications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Tailor maid solutions also possible in small-scale production</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>New industrialized “Blue Next” camera generation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Camera to system concept</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Embedded ECU platform for sensor fusion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Production and development “Made in Germany”</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CAMERA

Our volume production of a new camera generation has started

- Analog camera harsh environment
- Ethernet camera for monitoring/security with high environment requirements
- iCAM reference camera
- Quiet Wire Automotive with Micrel and Marvell PHY switch technology
- iCAM Ethernet interface and integrated G-Sensor
- 2 Mpx LVDS camera OV2775
- Robust camera for construction machinery and special vehicles


- Digital front view automotive
- Digital front view automotive
- LVDS-Version OV10635 AR0132 AT
- Vx6640 with STV0991 and BroadRreach
- Multi purpose Embedded System for applications like surround view, mirror replacement, object recognition and ADAS (6 cameras and multi user interface, ASIL-conform)

BLUENEXT
New camera generation based on modular platform designed for volume production, ASIL-conform
**Next steps: Increase market presence**

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Expand “Blue Next” camera family  
Development and industrialization of “Blue Next” camera solutions |
| 2    | Worldwide sales offensive  
Enter identified target customers |
| 3    | Potential in related markets  
Use existing market position in industrial area |
2. MARKET EXPANSION

Today, car OEM & Tier 1 account for the majority of sales

80%

20%
2. MARKET EXPANSION

We can develop further potential with commercial & special vehicles

<table>
<thead>
<tr>
<th>Customers</th>
<th>Segments</th>
<th>LIDAR</th>
<th>Cameras</th>
<th>Camera Systems</th>
<th>ADAS Systems Multiple Sensors Sensor Fusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car OEM &amp; Tier 1</td>
<td></td>
<td>Components</td>
<td>Customized cameras</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial &amp; Special vehicles</td>
<td></td>
<td>Components,</td>
<td>Standard cameras, tailor made</td>
<td>Surround view, Mirror replacement,</td>
<td>Turn assist, Break assist, Platoonning,</td>
</tr>
<tr>
<td>OEM &amp; Tier 1</td>
<td></td>
<td>Subsystems</td>
<td>solutions</td>
<td>Blind spot detection</td>
<td>Pedestrian recognition, Autonomous driving</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Manufacturing services</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. MARKET EXPANSION
Our focus is on target customers & leads with significant annual sales

1. Focus on defined target clients

2. Leads with potential annual sales > €500,000 per project / product

- Car OEM & Tier 1
- Trucks
- Bus
- Special vehicles (agriculture, mining machines, fork lifters)
2. MARKET EXPANSION

We focus on the European truck market

- Mediocre annual growth of Truck sales 3 % p.a. BUT double digit growth of revenue expected
- Focus on innovations; trend to fully or partly autonomous driving
- European key manufacturers: ~50% market share
2. MARKET EXPANSION

Next steps: Target market for commercial & special vehicles

1. Expand products experience with car OEM & Tier 1
   Offer products for trucks, buses and special vehicles

2. Initial focus on European market
   Sales team targets key manufacturers

3. Innovate according to market specific requirements
   Basis for future orders

4. Sensor fusion and system expertise
   Groundwork for long term market presence
# 3. FROM SENSOR TO SYSTEM

The trend is towards the fusion of different sensors

<table>
<thead>
<tr>
<th>Autonomous Level</th>
<th>Level 1 Assisted Driving</th>
<th>Level 2 Partly Automated</th>
<th>Level 3 Highly Automated</th>
<th>Level 4 Fully Automated</th>
<th>Level 5 Driverless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functionality</td>
<td>Active Cruise Control (ACC) Lane departure warning system (LDWS)</td>
<td>Lane Keep Assist (LKA) Park Assist (PA)</td>
<td>Automatic Emergency Brake (AEB) Driver Monitoring (DM) Traffic Jam Assist (TJA)</td>
<td>Autopilot on Highway (AP)</td>
<td>Autopilot everywhere</td>
</tr>
<tr>
<td>Sensors</td>
<td>Ultrasonic Radar (long range) Front Camera</td>
<td>Surround Camera</td>
<td>Radar (short range) Driver Camera Lidar</td>
<td>SENSOR Fusion</td>
<td>SENSOR Fusion</td>
</tr>
</tbody>
</table>
3. FROM SENSOR TO SYSTEM
The sensor fusion has already begun

**Camera Platform:**
- Blue Next Family
- LVDS, ETH, 2 WE ETH ..

**Camera Systems**
- Surround View
- Virtual Mirror

**Camera Systems & object recognition:**
- Lane departure
- Sign recognition
- ...

**ECU Platform:**
Multi purpose
*Embedded System* for various applications
Scalable processor family ASIL-conform

**Software Platform:**
Base software with application specific modules:
- Area view
- Object recognition
- ...

**Sensor fusion:**
Camera, Radar, LiDAR, US
3. FROM SENSOR TO SYSTEM
We are taking part with our Embedded ECU

Sensor Fusion
- Camera
- Radar
- Ultrasonic
- LiDAR

Target Applications
- Area View
- Mirror Replacement
- Turn Assist
- Object/Sign Recognition
3. FROM SENSOR TO SYSTEM
Next steps: We lay the foundations for sensor fusion

1. Extend software capabilities
   Form a dedicated software team

2. Entry into systems market
   Strategic customers worldwide

3. Partnerships with customers and suppliers
   Identify and strengthen alliances

4. Development of software platform
   Modular software on system-, com- and application-level
STRATEGY FOR DRIVER ASSISTANCE & AUTONOMOUS DRIVING

Summary

1. For autonomous driving a combination of sensors is necessary

2. Expanding our product portfolio: We concentrate on LiDAR and camera applications

3. Market expansion: We focus on the commercial and special vehicles market, too

4. From Sensor to System: We develop our own software platform

5. Our LiDAR and camera sales will increase significantly in the upcoming years
Q&A SESSION
NEXT PRESSURE GENERATION

EXPANSION OF FIRST SENSOR’S PRODUCT FAMILIES

DR. MARC SCHILLEGALIES, VP DEVELOPMENT
**FRAMEWORK CONDITIONS**

Continual growth of MEMS pressure sensor market

**MEMS and sensors revenue market in B$**

Source: Status of the MEMS Industry 2017, Yole Development, June 2017

**2015-2021 MEMS market forecast in US$B**

Source: Status of the MEMS Industry report, Yole Development, May 2017
MEMS pressure sensors business is driven by megatrends

**Smart Factory**
Global market ($100 mn)

- 2016: 462
- 2018: 513
- 2020: 566

Source: MarketsandMarkets, KESSIA

**Smart Health**
Global market ($100 mn)

- 2016: 65
- 2018: 98
- 2020: 142

Source: Statista

**Green Mobility**
Global light vehicle assembly & share of alternative drives (mn units)

- 2016: 93
- 2018: 101
- 2020: 108

Source: PwC, Autosfacts
FRAMEWORK CONDITIONS

Pressure measurement is extremely versatile

1 mbar
100 Pa
0,015 psi

10 mbar
1 kPa
0,15 psi

100 mbar
10 kPa
1,5 psi

1 bar
100 kPa
15 psi

10 bar
1 MPa
150 psi

100 bar
10 MPa
1.500 psi

1.000 bar
100 MPa
15.000 psi
We have extensive experience in MEMS sensor technology.
OVERALL OBJECTIVES
Further strengthening our pressure sensor footprint

Positioning as a provider of high-precision sensors for ultra-low to high pressure measurement that are suitable for the toughest conditions

1. Expand pressure platforms for ultra-low to high pressure:
   For applications in the industrial, medical and mobility target markets

2. Forward Integration:
   All from a single source – from sensor chips to complex sensor systems
1. EXPAND PRESSURE PLATFORMS

We cover a broad range from ultra-low to high pressure sensors

- **sensEdge sensors**
- **Transmitter**
- **H-Family**
- **L-Family**

<table>
<thead>
<tr>
<th>Pressure</th>
<th>H-Family</th>
<th>L-Family</th>
<th>H-Family</th>
<th>L-Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mbar</td>
<td>10 mbar</td>
<td>100 mbar</td>
<td>1 bar</td>
<td>10 bar</td>
</tr>
<tr>
<td>100 Pa</td>
<td>1 kPa</td>
<td>10 kPa</td>
<td>100 kPa</td>
<td>1 MPa</td>
</tr>
<tr>
<td>0,015 psi</td>
<td>0,15 psi</td>
<td>1,5 psi</td>
<td>15 psi</td>
<td>150 psi</td>
</tr>
<tr>
<td>1 bar</td>
<td>100 kPa</td>
<td>100 kPa</td>
<td>1 MPa</td>
<td>10 MPa</td>
</tr>
<tr>
<td>15 psi</td>
<td>15 psi</td>
<td>150 psi</td>
<td>1.500 psi</td>
<td>1.500 psi</td>
</tr>
<tr>
<td>10 bar</td>
<td>1 MPa</td>
<td>10 MPa</td>
<td>10 MPa</td>
<td>100 MPa</td>
</tr>
<tr>
<td>100 bar</td>
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<td>100 MPa</td>
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</tr>
<tr>
<td>1.000 bar</td>
<td>100 MPa</td>
<td>1.500 psi</td>
<td>1.500 psi</td>
<td>15.000 psi</td>
</tr>
<tr>
<td>1.000 bar</td>
<td>100 MPa</td>
<td>1.500 psi</td>
<td>1.500 psi</td>
<td>15.000 psi</td>
</tr>
</tbody>
</table>
1. EXPAND PRESSURE PLATFORMS

We strengthen our platforms with new pressure sensors

<table>
<thead>
<tr>
<th>Pressure Level</th>
<th>Equivalent Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mbar</td>
<td>100 Pa</td>
</tr>
<tr>
<td></td>
<td>0.15 psi</td>
</tr>
<tr>
<td>10 mbar</td>
<td>1 kPa</td>
</tr>
<tr>
<td></td>
<td>10 kPa</td>
</tr>
<tr>
<td></td>
<td>1.5 psi</td>
</tr>
<tr>
<td>100 mbar</td>
<td>100 kPa</td>
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<tr>
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</tr>
<tr>
<td></td>
<td>15.000 psi</td>
</tr>
</tbody>
</table>
### 1. EXPAND PRESSURE PLATFORMS

**L-Family: Our platform for ultra-low pressure measurement**

<table>
<thead>
<tr>
<th>Market requirements</th>
<th>New Technologies</th>
<th>New Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>– High accuracy</td>
<td>– Rapid customer-specific platform adjustments</td>
<td>– LMI</td>
</tr>
<tr>
<td>– High resolution</td>
<td>– New materials (e.g. adhesives, caps)</td>
<td>– Expansion of existing platforms</td>
</tr>
<tr>
<td>– Miniaturization</td>
<td>– Flow-based differential pressure sensor technology</td>
<td></td>
</tr>
<tr>
<td>– Customized calibration</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
L-FAMILY
Based on micro-flow: LMI series for ultra-low differential pressure

- Innovative micro-flow technology
- **Extreme miniaturization**: Micro-flow channel integrated within the silicon sensor chip
- Extremely low production tolerances and cost-effective mass production
- **Immunity** to both dust-laden and humid air
- Excellent sensitivity, accuracy, offset long term stability and long service life

Measuring ranges from 0.25 mbar
L-FAMILY

LMI sensors are ideal for HVAC and medical device applications
1. EXPAND PRESSURE PLATFORMS
H-Family: Our low & mid pressure platform

<table>
<thead>
<tr>
<th>Market requirements</th>
<th>New Technologies</th>
<th>New Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>- High accuracy</td>
<td>- Rapid customer-specific platform adjustments</td>
<td></td>
</tr>
<tr>
<td>- High resolution</td>
<td>- New materials (e.g. adhesives, caps)</td>
<td></td>
</tr>
<tr>
<td>- Miniaturization</td>
<td>- Newest piezoresistive chip technologies</td>
<td></td>
</tr>
<tr>
<td>- Customized calibration</td>
<td>- HTD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Expansion of existing platforms</td>
<td></td>
</tr>
</tbody>
</table>
H-FAMILY

Piezoresistive measurement: HTD series for low differential pressure

- **Distribution** of licenced standard products
- **Piezoresistive measurement** in addition to LMI micro-flow series
- **Very small and flat**: 8 x 13 mm, height <7 mm
  Ideal for space-saving manifold assemblies
- SPI interface with 15 bit resolution
- High-accuracy and long-term stability

Measuring ranges from 1 mbar to 7 bar
H-FAMILY

HTD sensors are also suitable for HVAC & medical device applications
## 1. EXPAND PRESSURE PLATFORMS

SensEdge sensors: Our high pressure platform

<table>
<thead>
<tr>
<th>Market requirements</th>
<th>New Technologies</th>
<th>New Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>– High accuracy</td>
<td>– sensEdge</td>
<td>– sensEdge sensors for hydraulic applications</td>
</tr>
<tr>
<td>– High stability</td>
<td>– Glass soldering process</td>
<td></td>
</tr>
<tr>
<td>– Media resistance</td>
<td>– High temperature</td>
<td></td>
</tr>
<tr>
<td>– High temperature</td>
<td>– Temperature signal</td>
<td></td>
</tr>
<tr>
<td>– Temperature signal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Costs</td>
<td></td>
<td>– sensEdge sensors for mobility applications</td>
</tr>
</tbody>
</table>
SENSEDGE SENSORS

Pinpoint reading: Our technology for high pressure

- **Piezoresitive sensor elements** manufactured separately from the main body section
- Can be used to generate a **pinpoint reading** of mechanical stress
- **Very small**: 0,8 x 0,8 mm
- High measuring sensitivity
- Not sensitive to heat

Measuring ranges up to 3,000 bar
SENSEDGE SENSORS

We develop sensors for hydraulic & green mobility applications
1. EXPAND PRESSURE PLATFORMS

Our roadmap leads to the expansion of our pressure platforms

- HTD market launch
- LMI market launch
- Further improvements H-family
- LMI expansion high dynamic range & application-specific adjustments
- High temperature sensor
- Platform gas bottle monitoring
- sensEdge based sensors
- Hydrogen pressure sensor
- 2017
- 2018
- 2019
- 2020
- sensEdge technology
- Temperature signal & sensEdge
- Implementation of new materials
- Piezoresistive chip technologies
- Flow-based measurement
2. FORWARD INTEGRATION
From chip to system: We are able to offer all from a single source
2. FORWARD INTEGRATION

One example is a multi sensor system for HVAC
EXPANSION OF FIRST SENSOR´S PRODUCT FAMILIES

Summary

1. MEMS pressure sensors business is driven by megatrends

2. Pressure measurement is extremely versatile. We cover a broad range from ultra-low to high pressure sensors

3. First Sensor is focused on high-precision pressure sensor platforms

4. We strengthen our platforms with new pressure sensors

5. We use our pressure platforms and forward integration to grow with key products & customers
EXPANSION OF FIRST SENSOR´S PRODUCT FAMILIES

Milestones 2018

Past

- First Sensor Technology GmbH
  Sensor chip technology
- Sensortecchnics GmbH
  Market & application expertise
- Elbau, Silicon Micro Sensors
  Packaging & calibration technology

Standard products & solutions
Distribution of standard sensors

2017

- New version of LMI ultra-low differential pressure sensor
- Launch of HTD low/mid pressure sensor

Focus on key technologies & platforms

Milestones 2018

- Expansion of (ultra-)low & mid pressure sensor families
- Expansion of sensEdge platform
- System solutions, e.g. bottle pressure

Moving up the value chain
Q&A SESSION
## MEET FIRST SENSOR

### Financial calendar 2018

<table>
<thead>
<tr>
<th>When?</th>
<th>What?</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.05.2018</td>
<td>Q1 Interim Report</td>
</tr>
<tr>
<td>15.05. 2018</td>
<td>German Spring Conference, Frankfurt am Main</td>
</tr>
<tr>
<td>23.05.2017</td>
<td>Annual Meeting 2018, Penta Hotel, Grünauer Str. 1, 12557 Berlin</td>
</tr>
<tr>
<td>13.08.2017</td>
<td>6-Month Financial Report</td>
</tr>
<tr>
<td>12.11.2017</td>
<td>Q3 Interim Report</td>
</tr>
<tr>
<td>26.-28.11.2017</td>
<td>Analyst' Conference: German Equity Forum, Frankfurt am Main</td>
</tr>
</tbody>
</table>
Financial Statement Press Conference & Capital Market Day
March 22, 2018

This presentation contains forward-looking statements. This presentation does not represent any solicitation to purchase shares of First Sensor AG. Rather it is intended exclusively for information purposes with regard to possible future developments at the company. All future-oriented information in this presentation was produced on the basis of probability-based planning and represents statements regarding the future which cannot be guaranteed. Rounding differences may occur.

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