

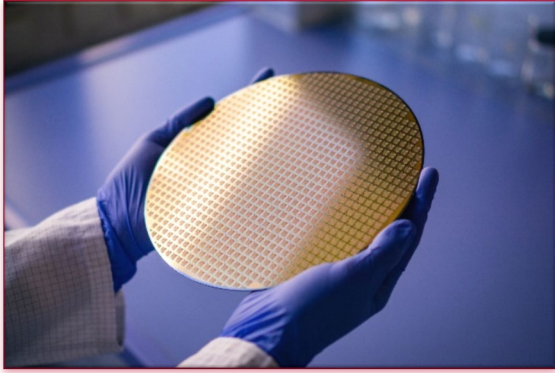
Welcome to the Bondholders Meeting

Deventer
May 24, 2019

Annual Report 2018



- Corporate & Operational Update
- Market Development & Trends
- Financials
- Outlook



Annual Report 2018

Corporate & Operational Update

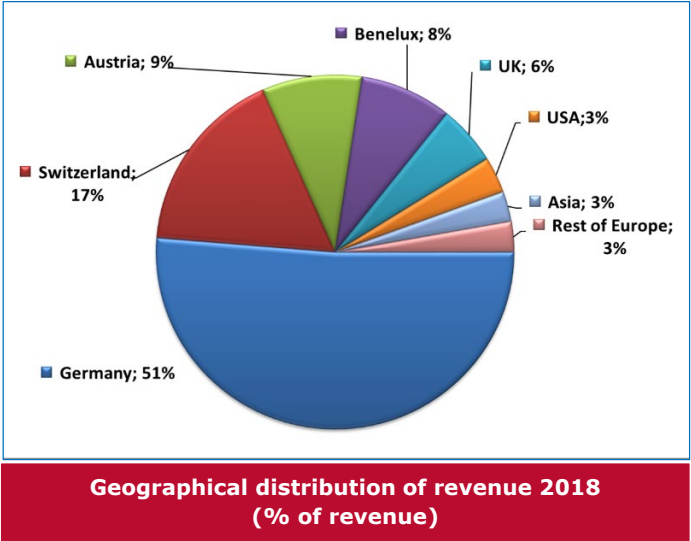
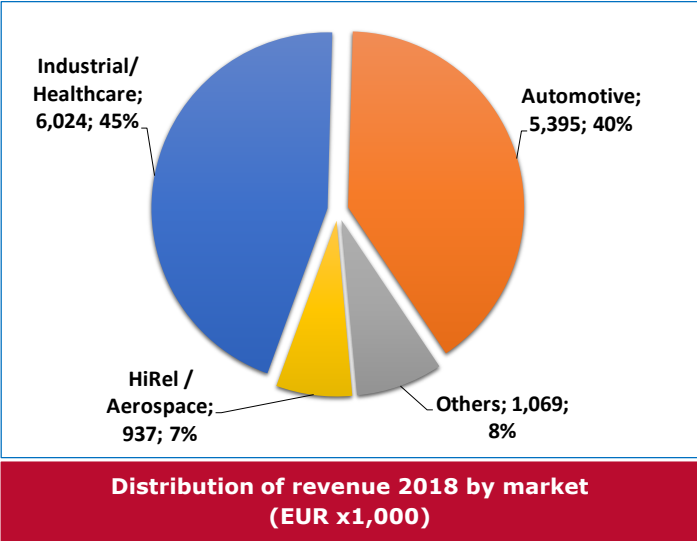
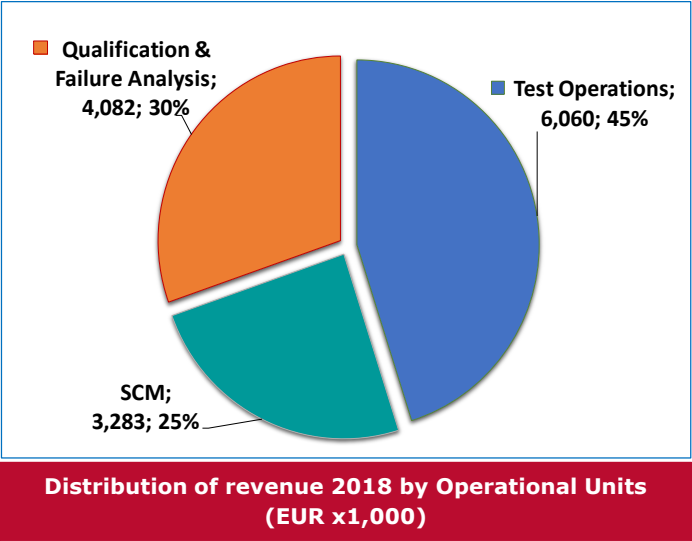
The Leading Independent Company for Semiconductor Component Supply & Quality Services



Timeline



2018 Revenue: 13.425 million €



Where does it all fit together?



Automotive

- E-Mobility (high power electronics)
- Lighting (laser LED headlights, interior lighting)
- Autonomous driving (sensors, laser, radar, lidar, powerful computing hardware)



Healthcare

- Lab on a chip / biochip
- Smart & active implants (flexible hermetically sealed electronics)
- Miniaturization, wearable technologies, intelligent sensors



Industrial

- Wireless communication (Industry 4.0)
- Energy harvesting
- Autonomous systems (connected systems such as sensor networks)






HiRel/Aerospace

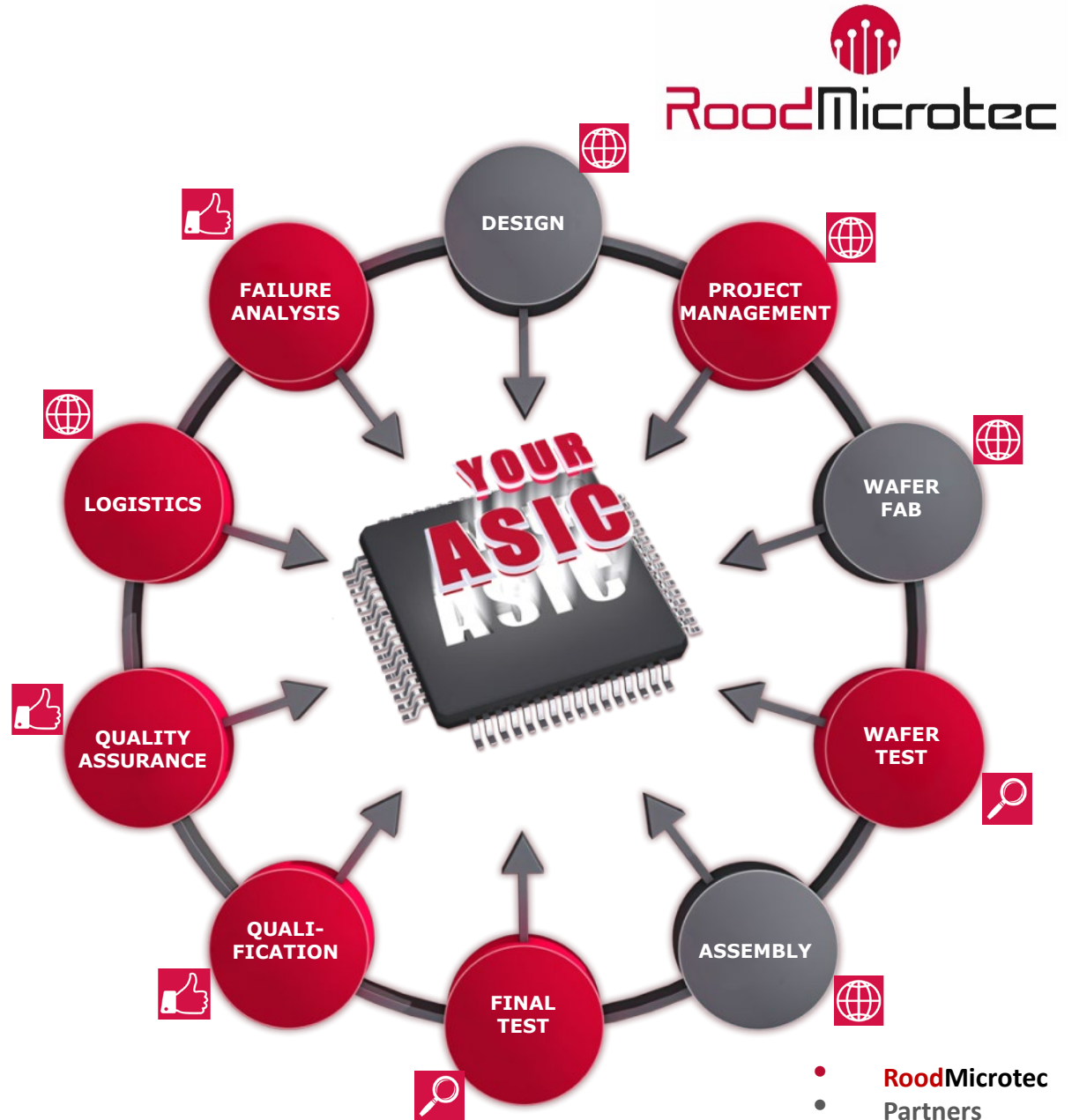
- COTS (Components-Off-The-Shelf)
- Non-destructive inspection
- Automotive qualification for "high" volume space applications

How does it all fit together?

● A Global Supplier to the Electronics Industry

- ASIC Turnkey Production Solutions
- Recognized expert in development of Test Solutions
- Fully equipped Test Operation running 24/7
- Extensive Qualification & Reliability Expertise with in-house equipment
- Outstanding know-how in Failure Analysis acquired from decades of chip and board level work

Legend:  Test Operations
 Qualification & Failure Analysis
 Supply Chain Management (SCM)

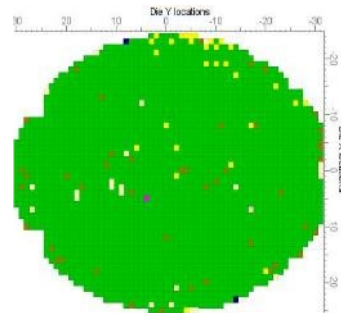




Test Operations

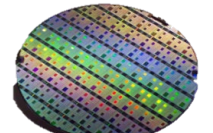
Engineering

- Development of test software and hardware for Automatic Test Equipment (ATE)
- Correlation & Characterization
- Test program conversion
- Test data evaluation, modification and optimization of test solutions
- Development of electrical test for qualification and failure analysis

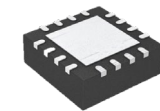


Production

- Wafer testing up to 12 inch at -40°C up to 150°C
- Final test of components in all industry standard package outlines, at full temperature range
- Scanning, straightening and tape & reel
- Optoelectronic testing
- Device programming



Wafer



Packaged Device



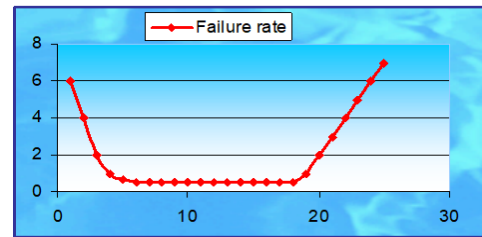
Assembled Board



Qualification & Failure Analysis

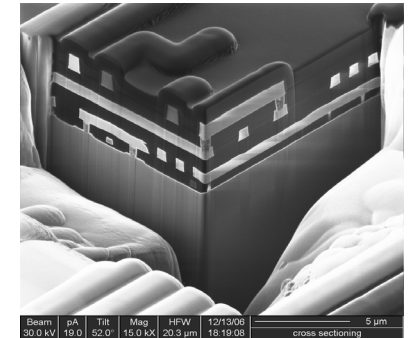
Qualification

- Stress tests of components and assembled boards according international standards
 - Operating Life Test
 - Climatic Stress Testing
 - Mechanical Stress Testing
 - ESD Testing
- Additionally Robustness Validation & Mission Profile Verification
- Real-Time Monitoring Burn-In



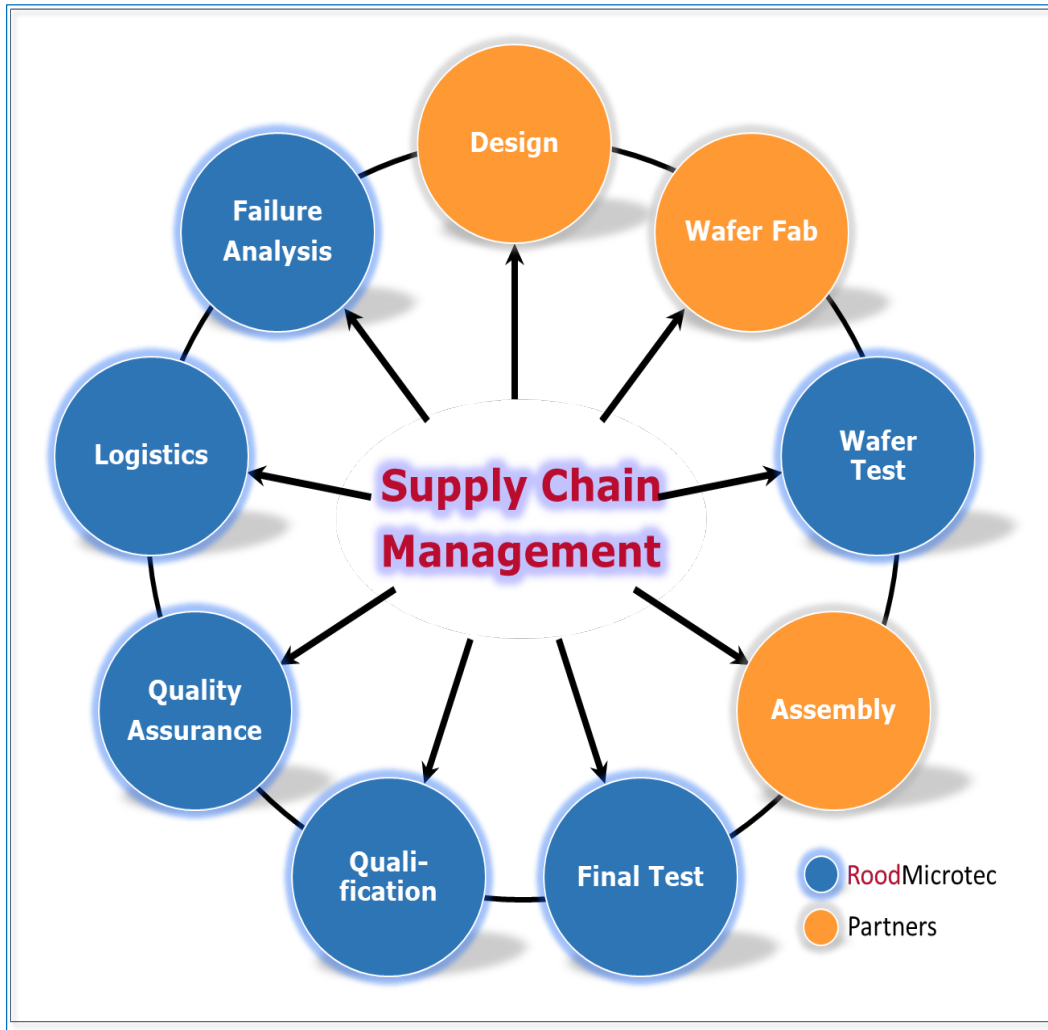
Failure Analysis

- Destructive / non destructive analysis
- Materials analysis
- First silicon debug and chip repair
- Customer return analysis
- Yield improvement
- Identity check
- Audits and expert assessment





Supply Chain Management



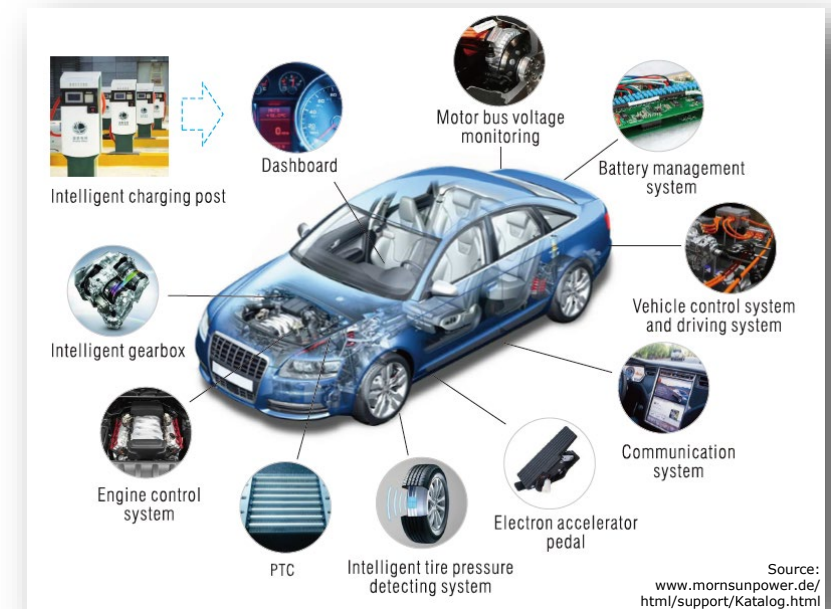
1. Full turnkey services:
 - Including design and wafer sourcing
 - Big industrial customers
2. Backend turnkey services:
 - Starting with wafer test
 - ASIC design houses
3. Selectable services:
 - For example final test, qualification and logistics
 - IDMs, OEMs



All the above services generate additional revenue in the other operational units.

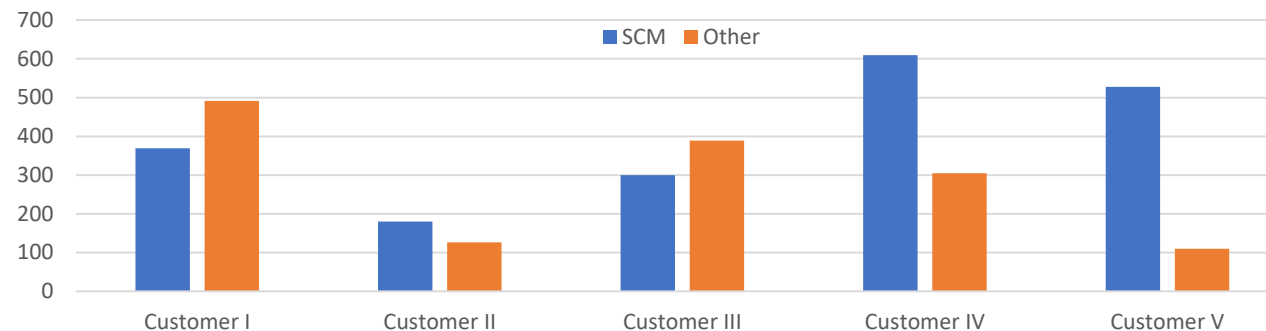
The SCM Story – Why are we so focused on this?

- An SCM contract is concluded for a specific period and for a certain estimated volume
- During the life of the contract RoodMicrotec manages all the steps in the value chain from the development phase to the industrialization phase all the way to production and logistics
- In the first two phases, the amounts RoodMicrotec can invoice are relatively modest
- When volume production starts, the revenues are expected to rise over time and generate significant recurring revenue
- The main advantage of this approach is that the clients have only one single company they are dealing with

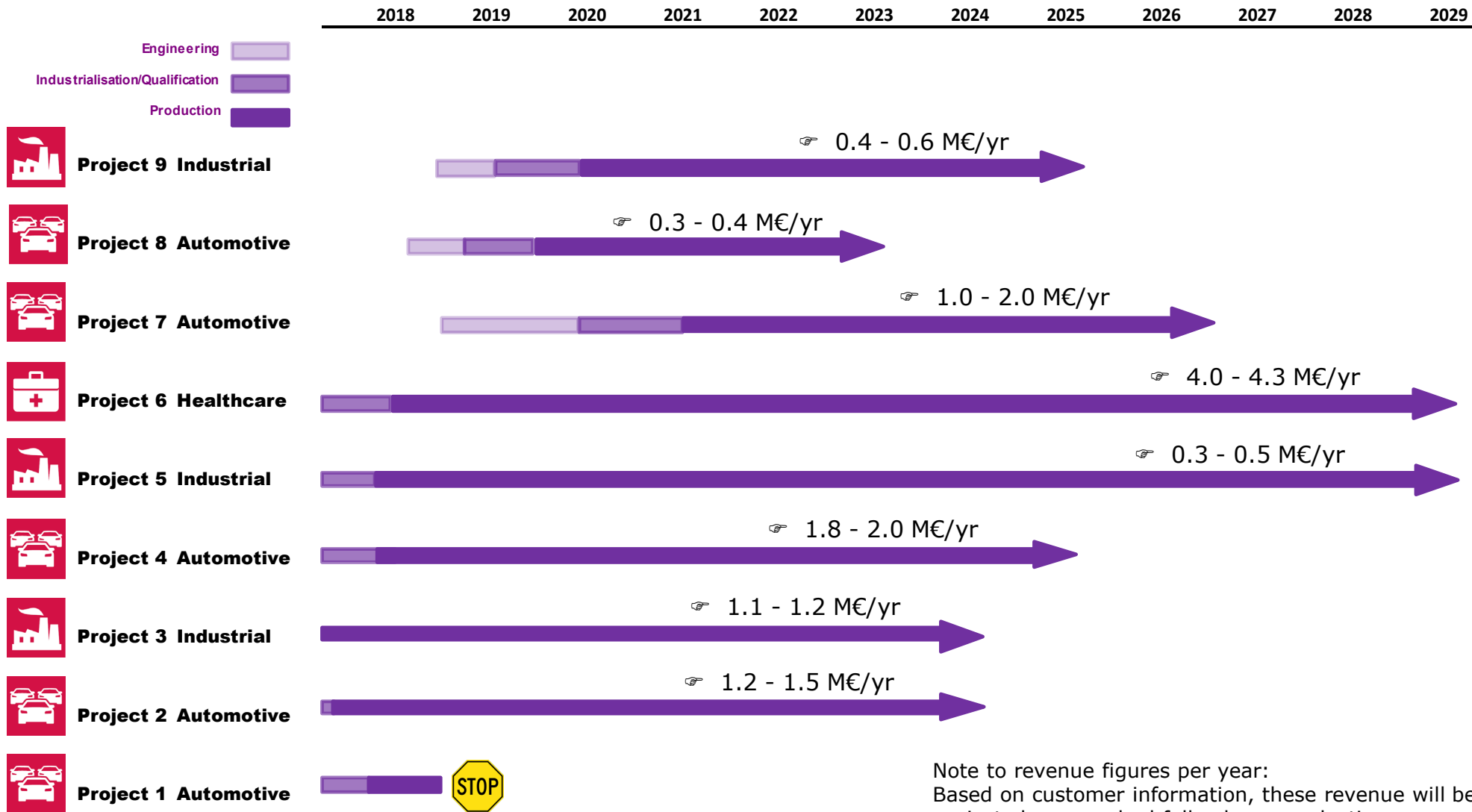


The SCM Story – Why are we so focused on this?

- Better visibility regarding production load
 - It takes about 2 to 3 years to move a product from start of design to volume production
 - During this time RoodMicrotec can set up and plan the production flow as well as the supplier flow
 - The customer provides a forecast and binding orders very early due to the long lead time (can be up to 26 weeks)
- Engage with customers on a deeper level
 - The complete project is controlled through a “Master Service Agreement”
 - This can only be cancelled if the product is cancelled
 - The customer does not build up the know-how in-house since RoodMicrotec is handling this
- Drives business in other departments – 5 examples

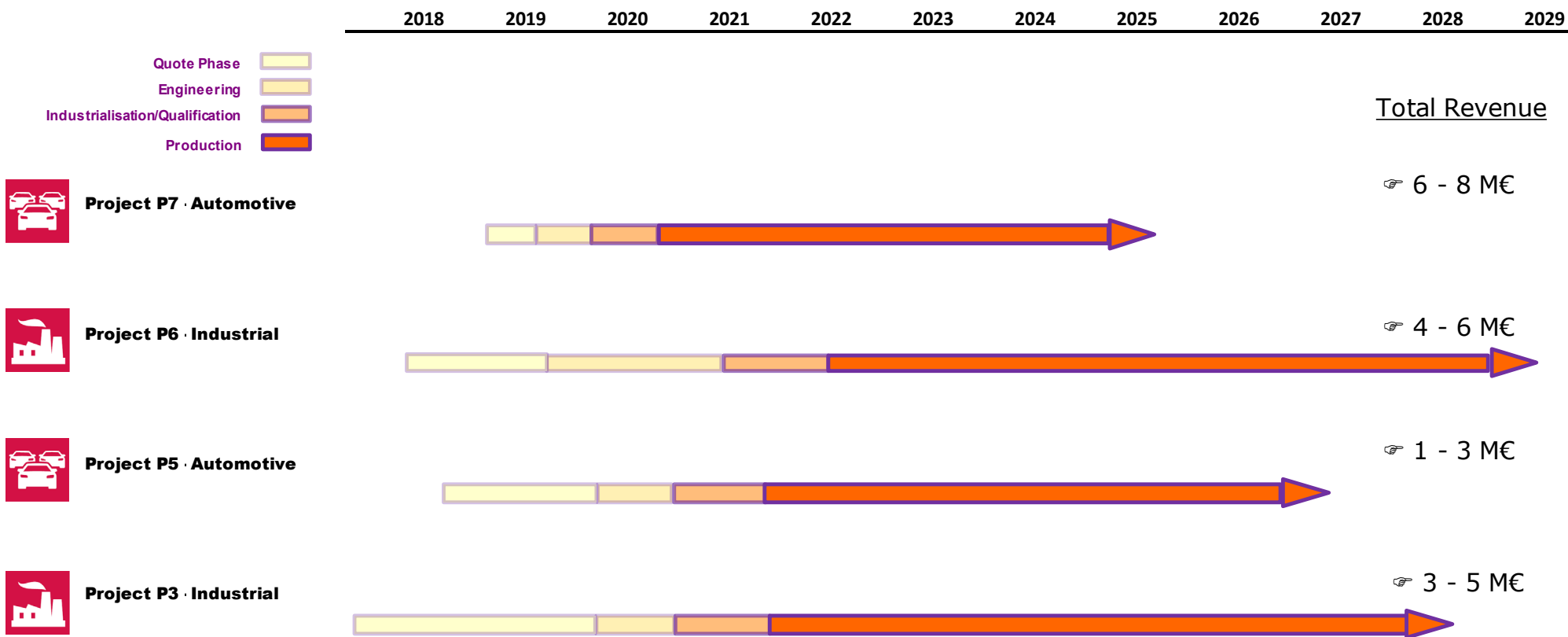


The SCM Story – Running projects



Note to revenue figures per year:
Based on customer information, these revenue will be realized after the projects have reached full volume production

The SCM Story – Projects under negotiation



Note to "Total Revenue":
The named revenue is based on our customers' estimation and valid for the total life time of the project

2018 Highlights - Operational

Solid growth

Revenue increase by 11% to 13.425 million Euro. Book-to-bill ratio above 1.0. Our strategic move to larger and long-term projects is yielding more stable and predictable recurring sales and is bearing fruits although the market is slowing down.

SCM projects

During 2018 we have moved additional SCM projects into production which contributed to the significant increase in SCM revenue with 34% year on year. One big project has been cancelled by the end customer of our customer. We expect negative impact on SCM revenue in the near future. But no change in our long-term strategy since many new projects are in the pipeline.

Key partner for EnSilica, UK

RoodMicrotec was chosen from EnSilica as key partner for an automotive ASIC project for which we perform qualification and test services. Volume production will start in 2020.

2018 Highlights - Operational

Publicly funded project

Two projects in the industrial sector have been finalized at the end of 2018. One new project in the field of healthcare has been gained in 2018. It runs two years, in which RoodMicrotec will develop test strategies for flexible encapsulated active implants. In 2019 in total three projects are running.

Merging five business units into three strategical operational units

Test Engineering has been merged into Test Operations, since Test Engineering is a supporting function enabling future test to be performed in Test Operations. Failure & Technology Analysis and Qualification & Reliability Investigations have been merged into the new unit Qualification & Failure Analysis. Both areas are part of the accredited laboratory.

Strengthened collaboration / partnerships with large players

We further added additional partners in the area of assembly houses, important European design houses and foundries. RoodMicrotec is accepted by a number of big players in the market (assembly houses, wafer fabs, electronic manufacturing service companies).

2018 Highlights - Operational

Communication

A joint workshop about semiconductor supply chain management organized by BCS (Business Cluster Semiconductors Netherlands) and RoodMicrotec with about 30 interested participants. Technical lectures about various failure analysis themes and a retrospective view on 40 years failure analysis presented during conferences and workshops with about 450 listeners.

Legal proceeding

RoodMicrotec started legal proceedings against a debtor concerning a dispute about the (non)fulfilment of the contractual obligations as per agreement between the parties, €130,000 has been accrued for in the 2018 accounts.

New shares issued

Additional funding of EUR 500,000 has been secured from Blikkenburg BV to invest into new equipment to speed up the transition into new business areas.

Warrants ISIN NL0011556972

Warrants are now closed. Last exercise period ended at 31 December 2018.

2019 - New engagements

EBVchips, Fraunhofer IIS & RoodMicrotec

Memorandum of Understanding with Fraunhofer Institut für Integrierte Schaltungen IIS and EBV Elektronik GmbH, announcing cooperation in production and marketing of Fraunhofer ready to use chip IP.

CoreHW & RoodMicrotec

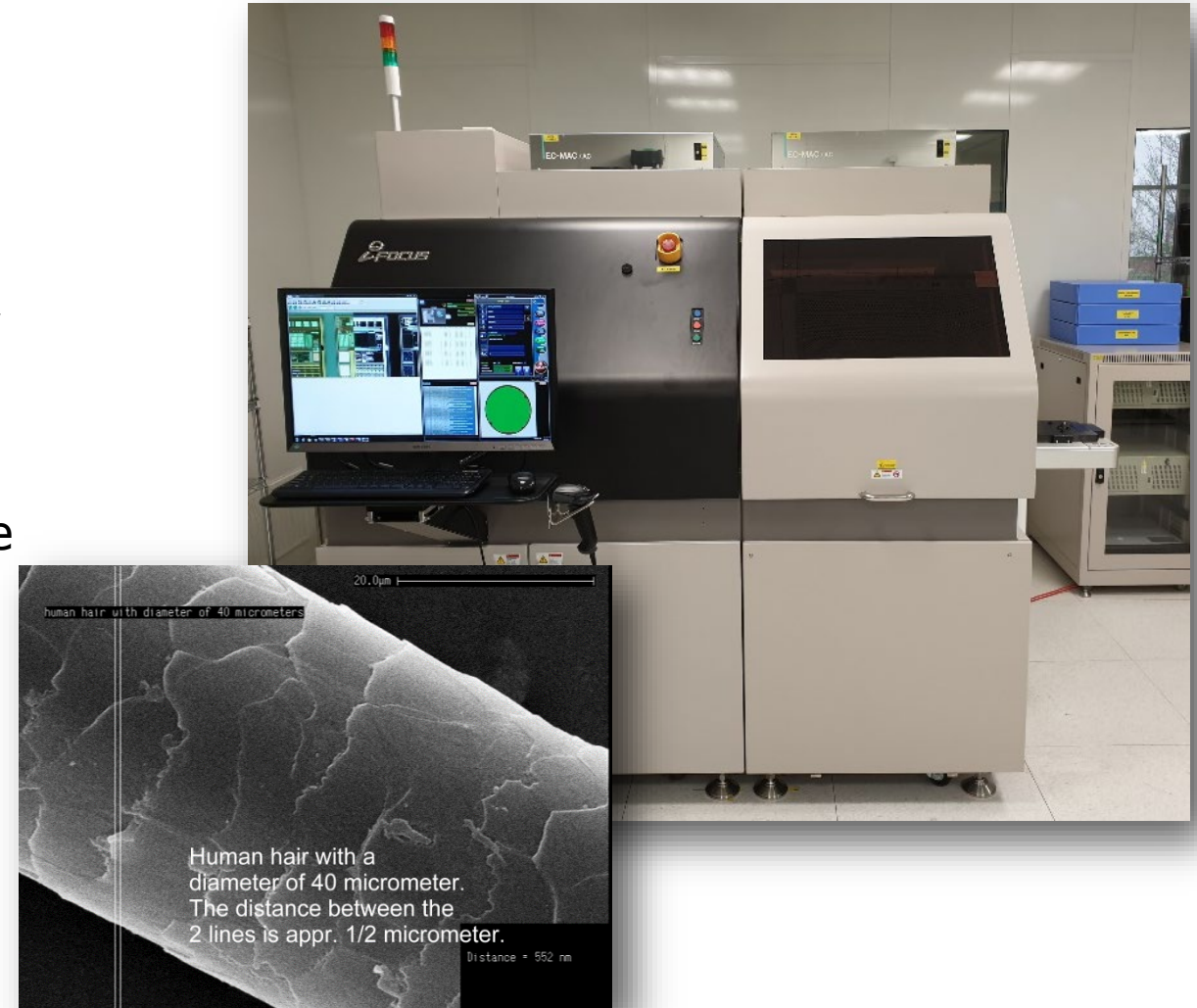
Letter of intent signed to enter into a long-term supply chain partnership. CoreHW is a Finnish fabless semiconductor company offering state-of-the-art full custom IC turnkey solutions, IP and design services as well as own IC products.



2019 – Automatic Optical Inspection System

- The industry's requirements are quickly developing towards a full automation of processes.
- With this new capability, RoodMicrotec has a solution that fits the needs of the customers, especially in the automotive sector.
- The AOI system is able to automatically handle 6, 8 and 12-inch wafers from cassette to cassette.
- Defects of the size of $1.6\mu\text{m}$ can be found.

(How small is this really? A human hair is in average $40\mu\text{m}$ thick so it corresponds to a hair cut into 25 slices, pretty small...)



Quality Management - Quality First

- Forward-looking quality planning
- Implementation in all relevant processes
- High level of dedication and commitment from all employees

RoodMicrotec – accredited

- **DIN ISO / IEC 17025**

General requirements for the competence of testing and calibration laboratories

RoodMicrotec – certified

- **ISO 9001:2015**

Quality management system and automotive requirements aligned to ISO TS 16949

RoodMicrotec – certified

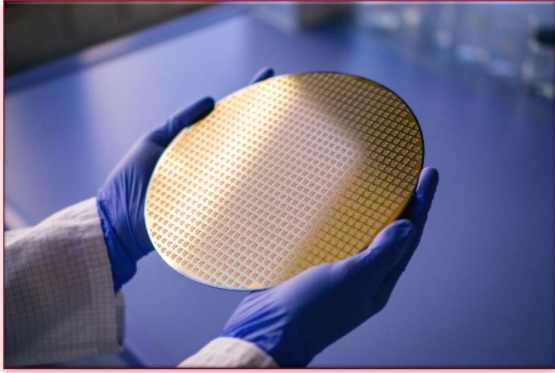
- **VDA 6.2, June 2017**

Quality management system for the automotive industry - Services



The test laboratories are accredited according to DIN EN ISO/IEC 17025:2005 by the accreditation body DAKKS. The accreditation is valid only for the scope listed in the annex of the accreditation certificates D-PL-12120-01-01 and D-PL-12120-01-02.

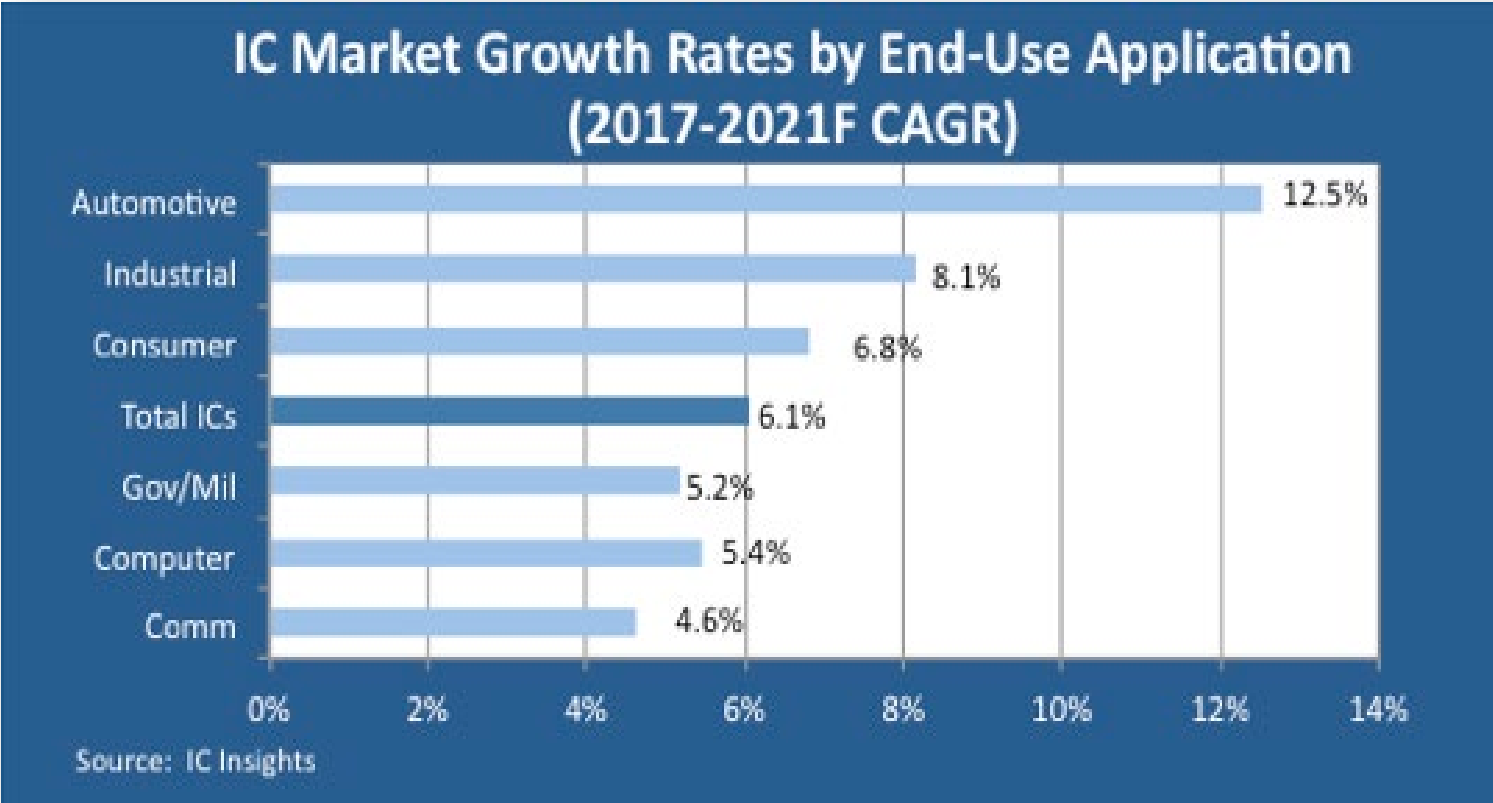




Annual Report 2018

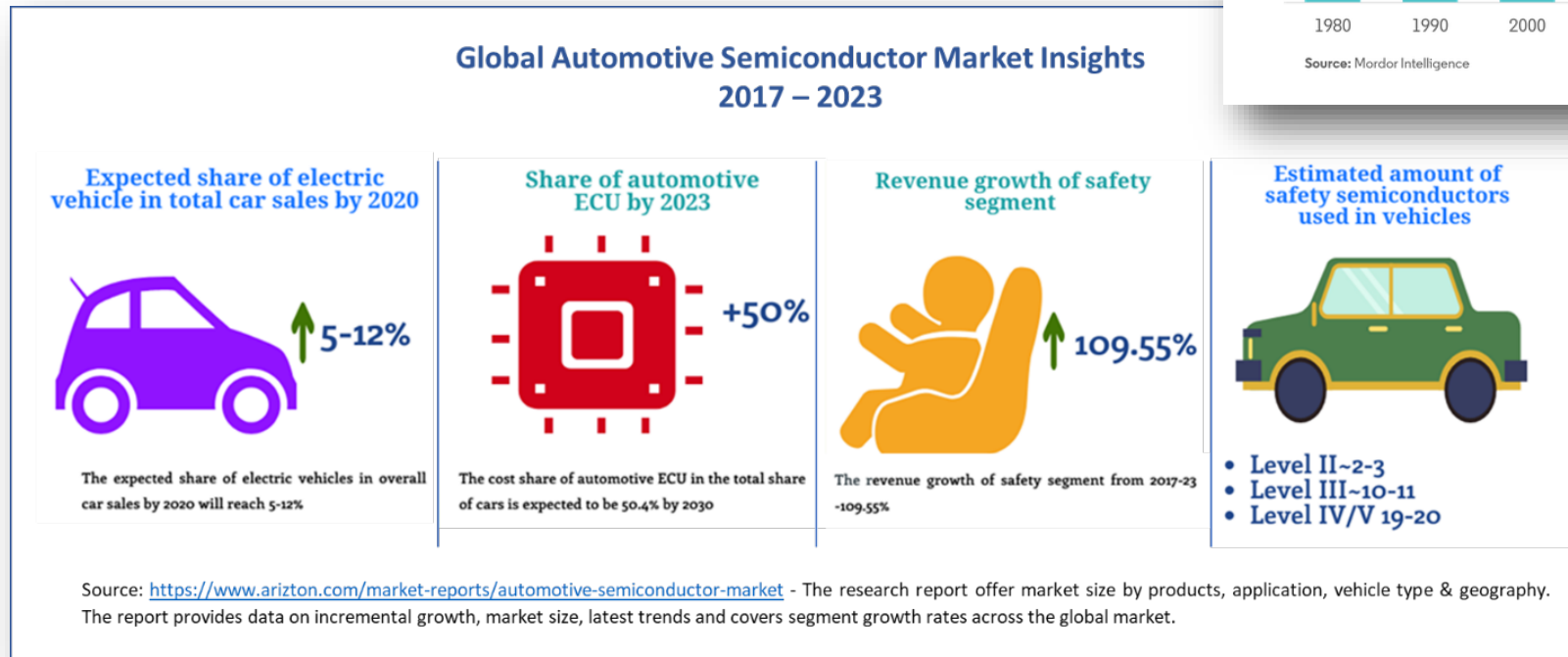
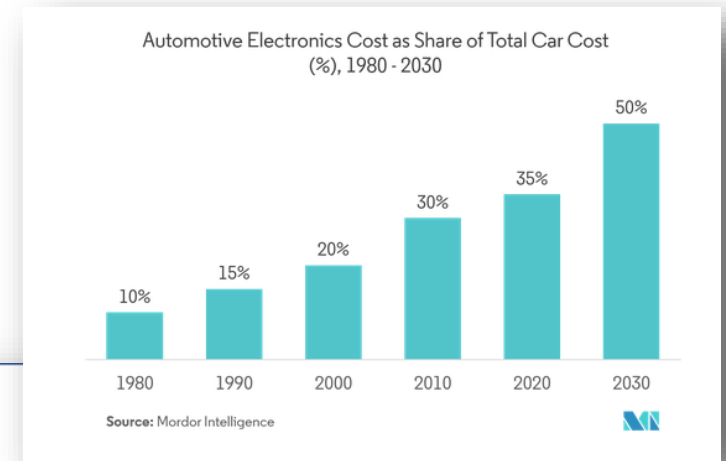
Market Development & Trends

Focus on the fastest growing sectors



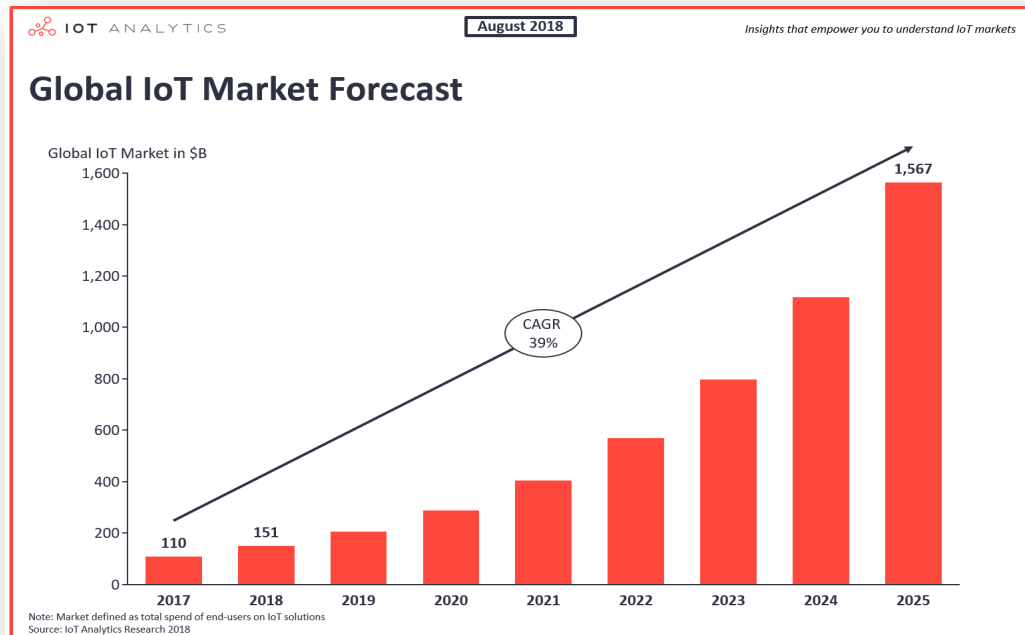
Market Outlook - Automotive

- Growing market for vehicles
- Significant growth of electronic devices within the vehicles
 - ❑ Electric vehicles
 - ❑ Autonomous driving
 - ❑ Safety
 - ❑ Vehicle-to-Vehicle (V2V) and Vehicle-to-Infrastructure (V2I) communication
 - ❑ In-car functions



Market Outlook – Industrial

- Growing market for machines
- Significant growth of electronic devices within the systems driven by Industry 4.0 and robots
 - ❑ Sensor technology
 - ❑ Safety



ParsiFAI 4.0 research project Intelligent Foils for Industry 4.0



Source:
<https://www.festo.com/group/en/cms/12002.htm>

Microelectronic sensor systems in thin foils offer a new approach when it comes to networking intelligent production plants for Industry 4.0. Local monitoring and controls in a production environment are made possible by so-called smart sensor system labels.

Applications – Automotive Electronics

In-car
illumination,
interieur



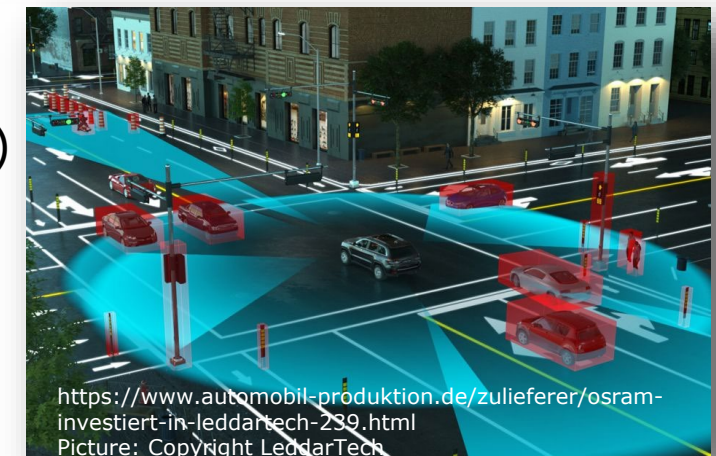
Intelligent
battery control



Virtual
cockpit

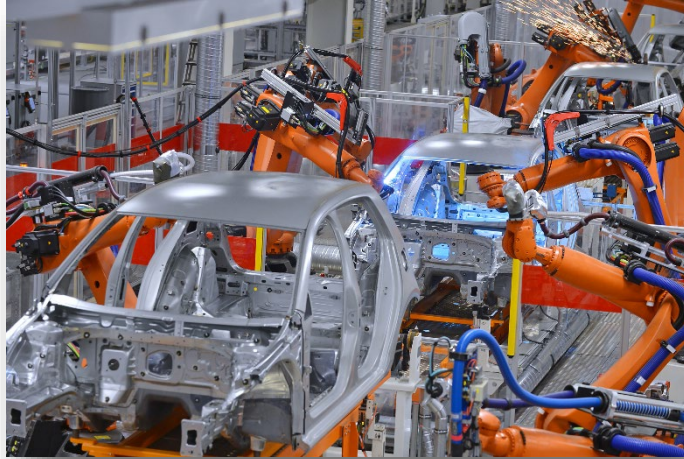


Autonomous
driving (lidar,
radar, camera, ...)



Applications – Industrial

Smart Robotics



Smart City



Smart factory

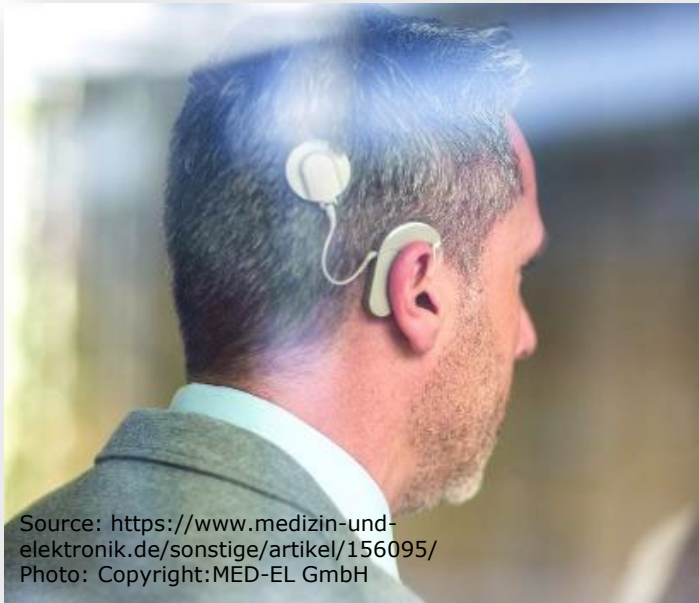


Smart agriculture

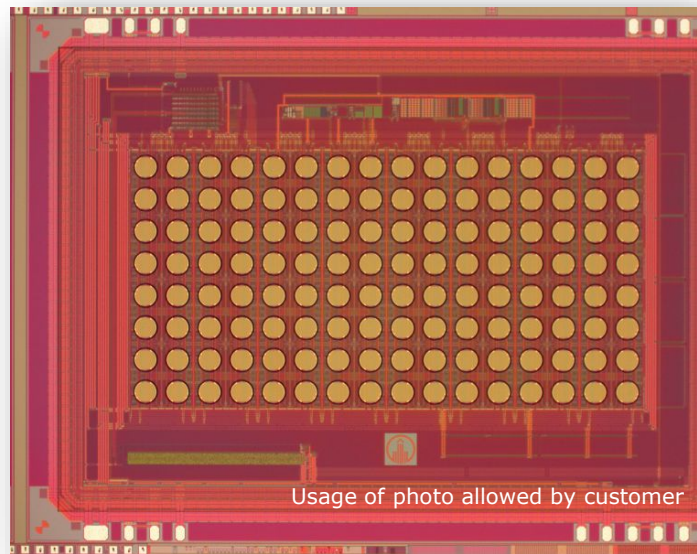


Applications – Healthcare

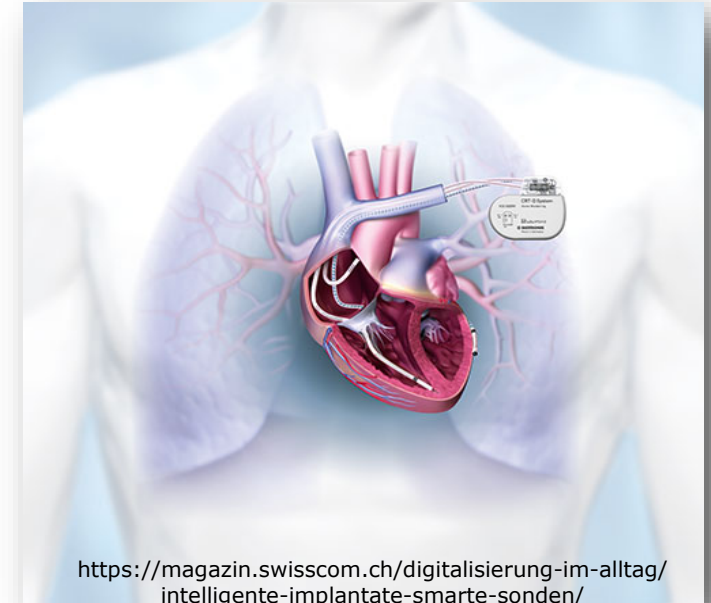
Cochlea implant can make deaf people hear (electrical-acoustic simulation)



Lab on chip for veterinary examinations and diagnoses.

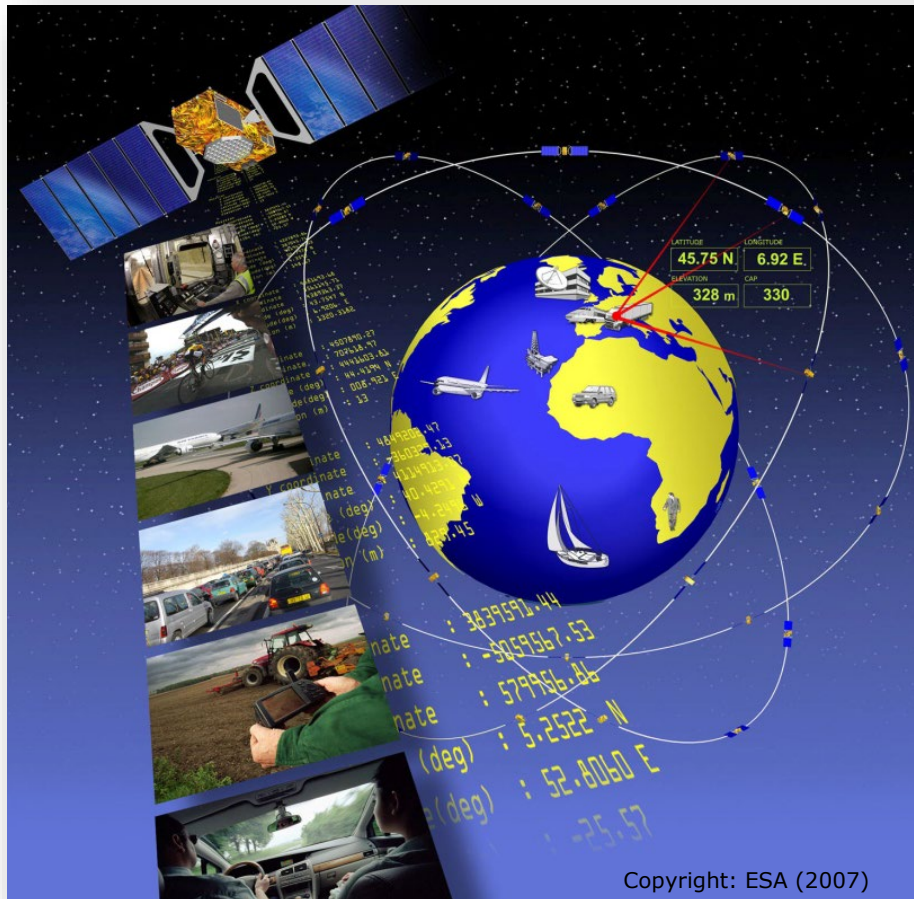


Pace maker combined with alarm system monitoring the electrical activity of the heart.



Applications - HiRel

Satellites



Aircraft



Technology: HF – High Frequency

- ASICs for radar applications and high sophisticated measurement equipment

- Markets

- ☐ Automotive
- ☐ Industrial

- Technology

- ☐ 2019 Investment in equipment for 40 GHz, 60 GHz
- ☐ 2020 Expansion to 125 GHz

- Based on customer and publicly funded projects (EuroPAT-MASIP)



Body scanner

Technology: Photonics

● Opto ASICs and photonic light wave circuits, laser diodes, VCSELs

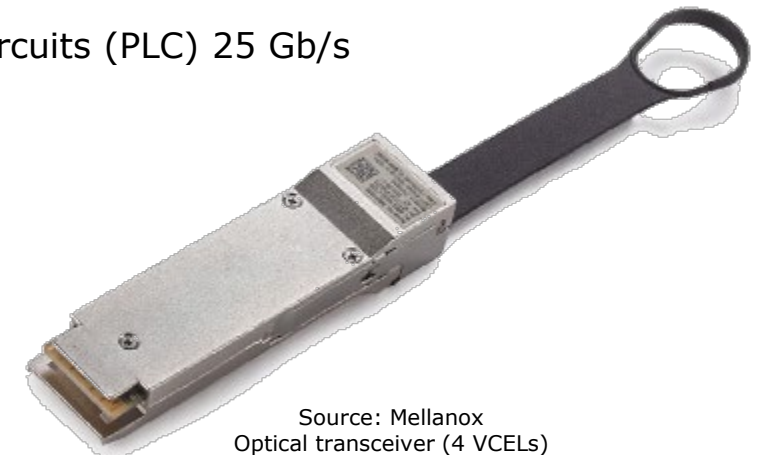
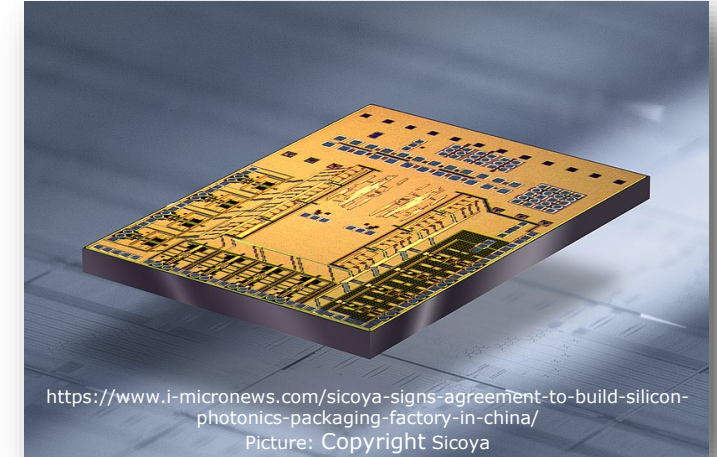
● Markets

- ❑ Automotive lidar (light detection and ranging)
- ❑ Industrial sensorics
- ❑ Communication

● Technology

- ❑ 2019 Life test equipment for VCSEL and laser diodes
Electrical test of photonic light wave circuits (PLC)
- ❑ 2020 Equipment for high speed characterization of photonic light wave circuits (PLC) 25 Gb/s

● Based on customer and publicly funded projects (APPLAUSE)



Technology: High Power Electronics

IGBT (transistors) and Operational Amplifiers

Markets

- Automotive – e-mobility
- Industrial
- Electricity

Technology

- 2019 Investment in ATE (automatic test equipment) and probe card for high power test
Life test equipment for high power devices
- 2020 Further expansion

Based on customer and publicly funded projects (GaNScan)

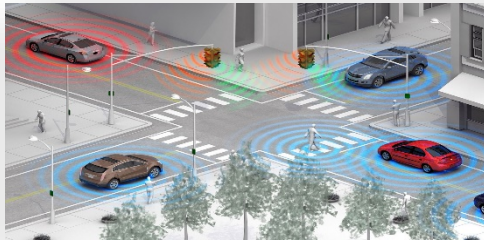


Summary

- RoodMicrotec selected the growing markets and is focussing on them



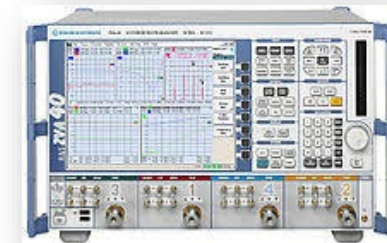
- RoodMicrotec serves growing applications and customers in these markets

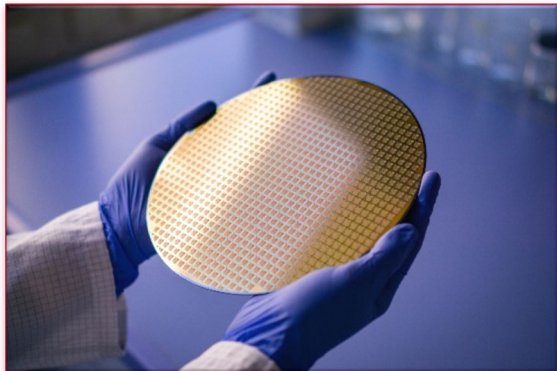


Source:
mein-roboterarm.de



- RoodMicrotec invests in future technologies for these applications





Annual Report 2018

Financials

2018 Highlights – Financial



Revenue

(x 1,000 €)

2018 Compared to
13,425 2017 **+11%**

Net result

(x 1,000 €)

2018 Compared to
125 2017 **+169**

EBITDA

(x 1,000 €)

2018 Compared to
1,383 2017 **+46%**

Net debt

(x 1,000 €)

2018 Compared to
915 2017 **-37%**

Balance sheet

Total (x 1,000 €)

2018 Compared to
13,6 2017 **+4,3%**

Equity

2018 Compared to
5,209 2017 **+9%**

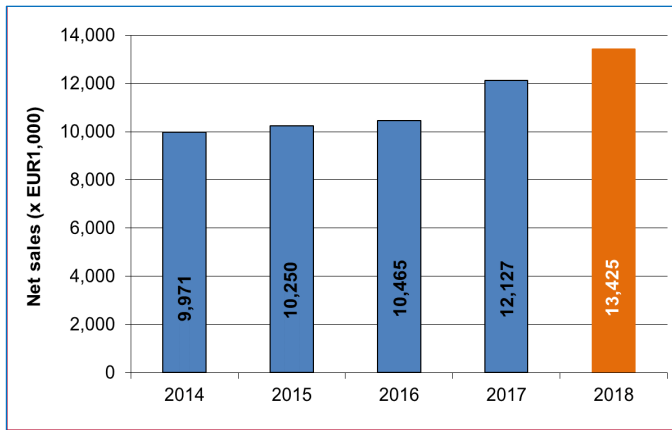
Non current liabilities

2018 Compared to
5,907 2017 **+6%**

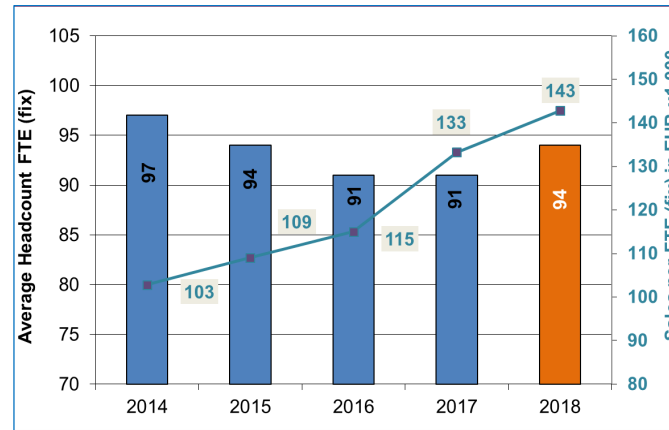
Current liabilities

2018 Compared to
2,490 2017 **-9%**

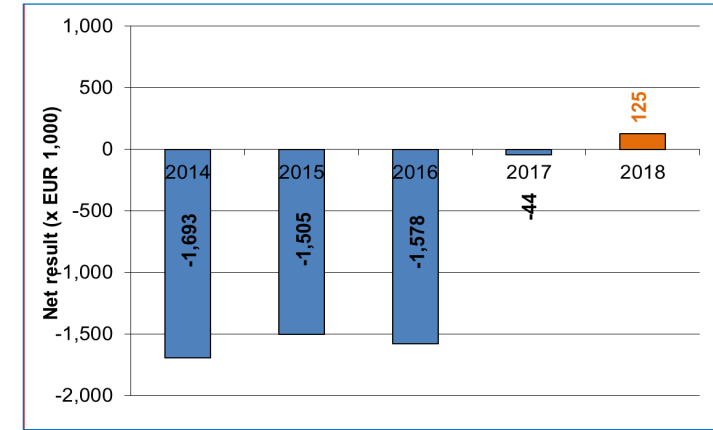
2018 Highlights – Financial



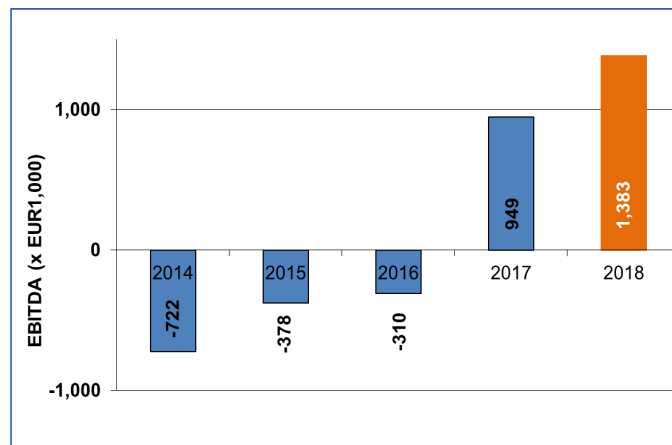
Net sales



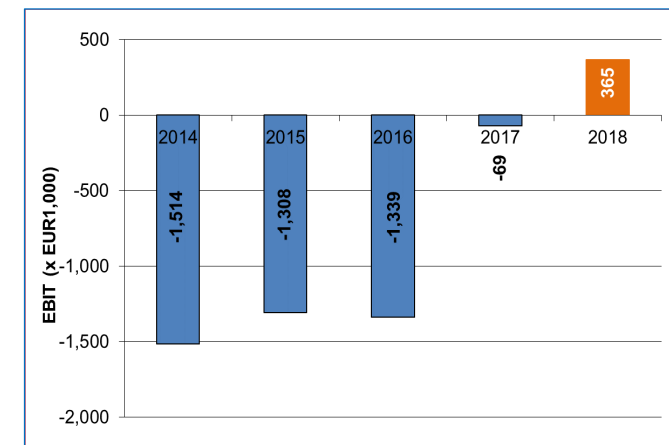
Sales per employee and head count



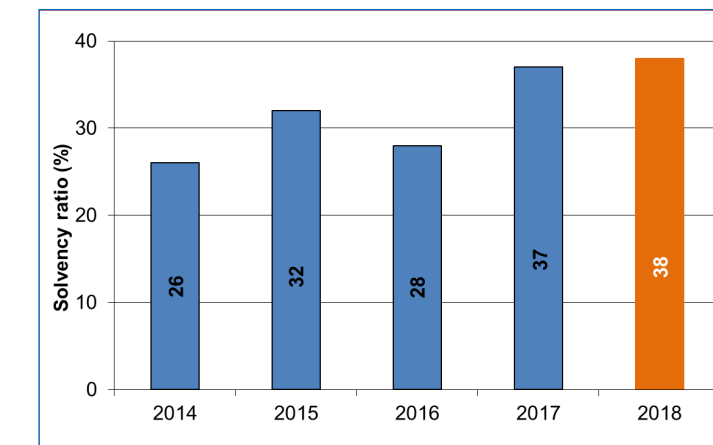
Net result



EBITDA



EBIT



Solvency

Statement of Profit or Loss

(x EUR 1,000)	Notes	2018	2017
<u>Net sales</u>	<u>1</u>	<u>13,425</u>	<u>12,127</u>
<u>Cost of sales</u>	<u>2</u>	<u>-2,545</u>	<u>-1,970</u>
<u>Gross profit</u>		<u>10,880</u>	<u>10,157</u>
<u>Personnel expenses</u>	<u>3</u>	<u>-6,555</u>	<u>-6,105</u>
<u>Other operating expenses</u>	<u>4</u>	<u>-2,942</u>	<u>-2,703</u>
<u>Termination benefit costs</u>	<u>5</u>	<u>-0</u>	<u>-400</u>
<u>Total operating expenses</u>		<u>-9,497</u>	<u>-9,208</u>
<u>EBITDA</u>		<u>1,383</u>	<u>949</u>
<u>Depreciation and amortisation</u>	<u>6</u>	<u>- 1,018</u>	<u>- 1,018</u>
<u>EBIT</u>		<u>365</u>	<u>-69</u>
<u>Financial expenses</u>	<u>7</u>	<u>-241</u>	<u>-258</u>
<u>Profit (loss) before taxes</u>		<u>124</u>	<u>-327</u>
<u>Taxes</u>	<u>8</u>	<u>1</u>	<u>283</u>
<u>Net profit (loss)</u>		<u>125</u>	<u>-44</u>

Operating Expenses

x EUR 1,000	2018	% of revenue	2017	% of revenue
Personnel expenses	6,555	48.8%	6,105	50.3%
Other operating expenses	2,942	21.9%	2,703	22.3%
Termination benefit costs	0	0.0%	400	3.3%
Total operating expenses	9,497	70.7%	9,208	75.9%

- Total operating expenses increased
 - Personnel expenses increased by EUR 0.45 million;
 - Other operating expenses increased by EUR 0.25 million;
Affected by one-time costs of EUR 0.39 million:
 - ❑ Legal proceeding
 - ❑ VAT corrections

Statement of Financial Position



(x EUR 1,000)	31-12-2018	31-12-2017 ¹
Assets		
Property, plant and equipment	5,303	6,023
Intangible assets	2,379	2,428
Deferred tax assets	1,420	1,284
Financial assets	81	138
Non-current assets	9,183	9,873
Inventories	593	581
Trade and other receivables	2,092	1,980
Cash and cash equivalents	1,738	617
Current assets	4,423	3,178
Total assets	13,606	13,051

¹ Two life insurance policies of EUR 365,000 were reclassified from financial assets to defined benefit obligation.

Statement of Financial Position



(x EUR 1,000)	31-12-2018	31-12-2017 ¹
Equity and liabilities		
Issued share capital	8,006	7,339
Share premium	20,517	19,906
Revaluation reserve	1,943	2,216
Retained earnings	-27,751	-27,188
Equity, attributable to equity holders of the parent	2,715	2,273
Non-controlling interests	2,494	2,494
Total equity	5,209	4,767
Loans and borrowings	2,426	2,880
Defined benefit obligation	3,374	2,534
Provisions	107	144
Non-current liabilities	5,907	5,558
Loans and borrowings	227	188
Trade and other payables	2,205	2,480
Current tax liabilities	58	58
Current liabilities	2,490	2,726
Total equity and liabilities	13,606	13,051

¹ Two life insurance policies of EUR 365,000 were reclassified from financial assets to defined benefit obligation.

Consolidated Statement of Comprehensive Income



(x EUR 1,000)	2018	2017
Net profit (loss)	125	-44
Items that will not be reclassified to profit and loss:		
Remeasurement of defined benefit obligations	-1,055	-286
Remeasurement of defined benefit obligations – DTL	32	-16
Revaluation of land and buildings	-	586
Revaluation of land and buildings - DTL	-	-133
Sale of revalued land – DTL	71	-
	-	
Total comprehensive income	-827	107

Total comprehensive income attributable to:

Equity holders of the company	-827	107
Non-controlling interests	-	-
Total comprehensive income	-827	107

Cash Flow Statement

(X EUR 1,000)	2018	2017
EBITDA	1,383	949
Adjustments for:		
- Movements in net defined benefit obligations and provisions	-303	-141
- Share based payments	20	-1
- Accrued interest	-8	-25
Changes in working capital		
- Inventories	-12	-107
- Trade and other receivables	-121	-268
- Trade and other current liabilities	-236	409
Cash generated from operating activities	723	816
Interest paid	-160	-188
Net cash from operating activities	563	628
Cash flows from investing activities		
Investments in property, plant and equipment	-446	-1,127
Disposal of property, plant and equipment	326	-
Investments in intangible assets	-130	-72
Net investments in financial assets	-	4
Net cash from investing activities	-250	-1.195
Cash flows from financing activities		
Proceeds from issuance of share capital	1,258	608
Proceeds from borrowings	-	-
Repayment of borrowings	-450	-113
Net cash flow from financing activities	808	495
Net cash flow	1,121	-72

Events after balance sheet date

- Exercise of warrants Series III that resulted in an increase of 2,117,535 shares (exercise price: EUR 0.21) on 15 January 2019.
- In March 2019 the final installment of EUR 225,000 of the secured loan is repaid.
- On 21st May, the court gave a verdict in the legal proceedings as announced in a press release on the 26th April 2018. The claim for damage from the debtor against RoodMicrotec is set to 5,225 Euro by the court. RoodMicrotec already included a provision of EUR 130,000 in the books of 2018 which is now released.

Outlook

- Our growth of 11% in 2018 was in line with the European growth of 12%, global growth ended at 13.7%.
- For 2019, the semiconductor market is expected to slow down but to come back in 2020.
 - WSTS predicts a decrease of 3.0% globally for 2019 (Source: WSTS press release 20 February 2019).
 - Various analysts forecast the semiconductor market growth/decrease from -10% to +2.6% for 2019 (Source: Semiconductor Intelligence publication dated March 21, 2019).
- RoodMicrotec expects a continuing revenue increase over the next years and expects to report yearly improving positive net results. With a softer market and geopolitical uncertainties revenue for 2020 is expected to be in the range of EUR 16 to EUR 18 million.
- First quarter sales in 2019 was 10% lower compared to Q1-2018. This is due the cancellation of one big project by the end customer of our customer as well as the softer market and the geopolitical uncertainties.

Questions, other items and any other business



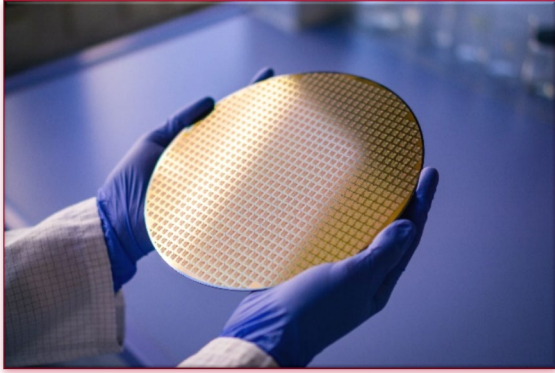
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**Thank you for your participation
and your support!**