

A woman with long dark hair is wearing a VR headset and looking at a large digital display. The display shows a complex network of white lines on a dark blue background, resembling a data visualization or a futuristic interface. The scene is lit with blue light, creating a high-tech atmosphere.

# Bringing tomorrow's electronics to life

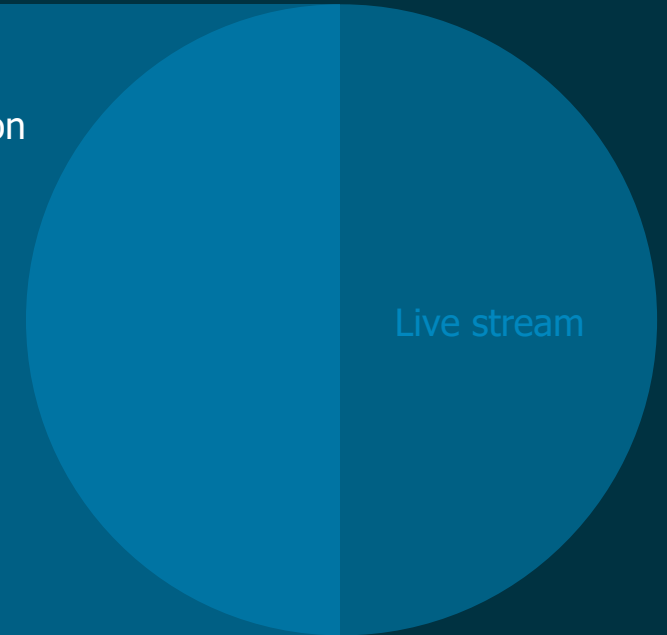
Through continued profitable and sustainable growth

**Capital Markets Day / September 5, 2022**

**MYCRONIC**

# Agenda

- 13:00 Opening: Sven Chetkovich
- 13:05 Mycronic Group strategy and financial targets: Anders Lindqvist, Pierre Brorsson
- 13:25 Sustainability: Lena Båvegård, Kristina Svanteson
- 13:40 Pattern Generators: Charlott Samuelsson, Mikael Wahlsten
- 14:00 High Flex: Clemens Jargon
- 14:20 Break
- 14:35 High Volume: Ivan Li (online)
- 14:55 Global Technologies: Jochen Kleinertz, Michael Chalsen
- 15:15 Q&A



- 15:30 Production tour, three parallel groups
  - High Flex demo, 20 minutes
  - High Flex production, 20 minutes
  - Pattern Generators production, 20 minutes
- 16:30 End of Capital Markets Day





# Mycronic Group strategy and financial targets

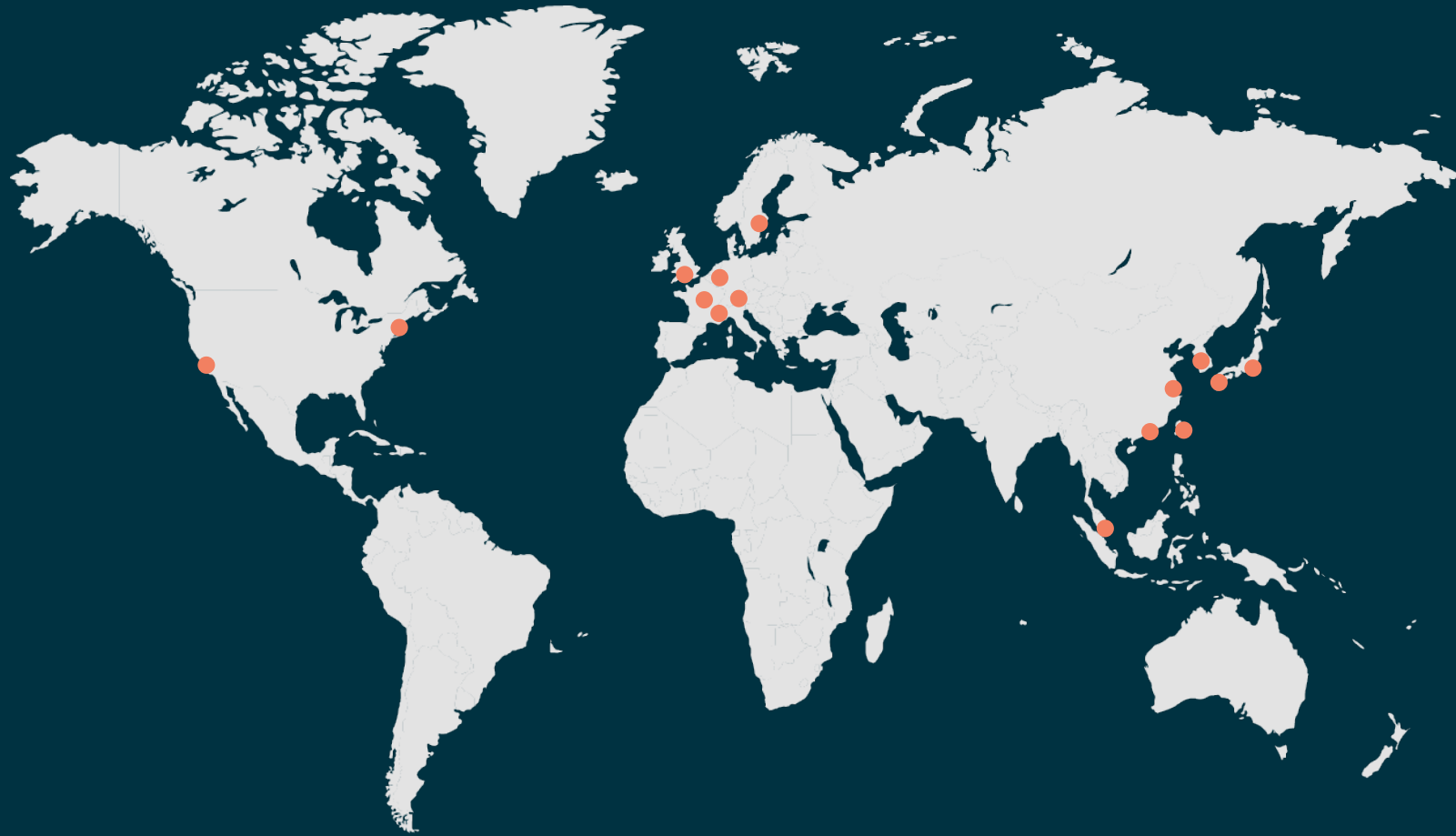
---

Anders Lindqvist, President & CEO

Pierre Brorsson, CFO & Sr VP Corporate Development



# Worldwide **footprint**



**More than 40 years**  
of experience in innovation

Mycronic is represented  
**in more than 50 countries**

The power of innovation  
**is proven by more than 500 patents**

**More than 2,000 employees**  
in 12 countries

More than 28,000 production systems  
**at more than 5,500 customers**



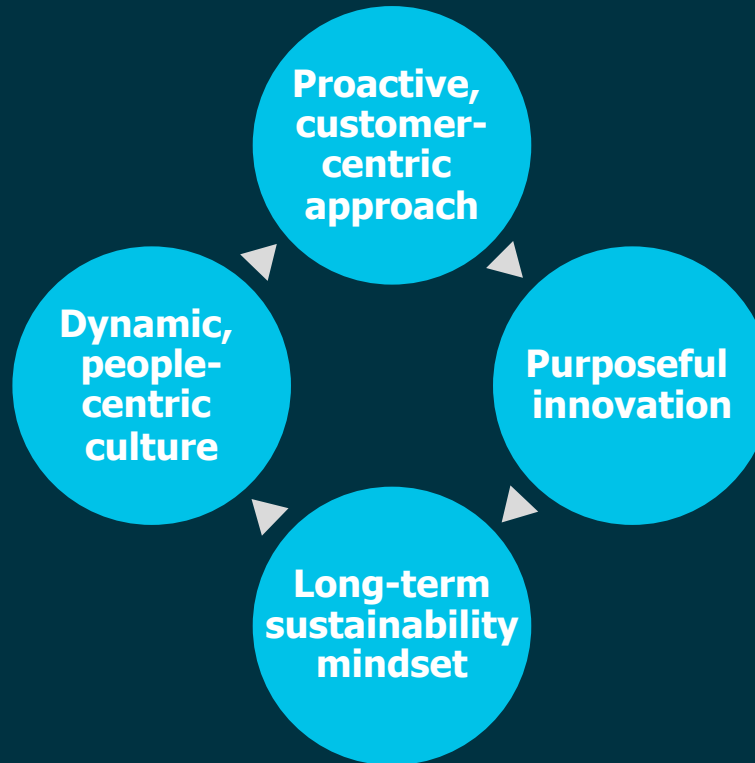
# To be the most trusted partner to the creators of tomorrow's electronics

## Who we are

### Market leading solutions provider

- for electronics production
- in selected niches
- with high degree of recurring revenue

## Our principles



## Our ambition

### Sustainable profitable growth

- Continued high focus on growth
- Ensuring profitability along the way

# Mycronic's four divisions

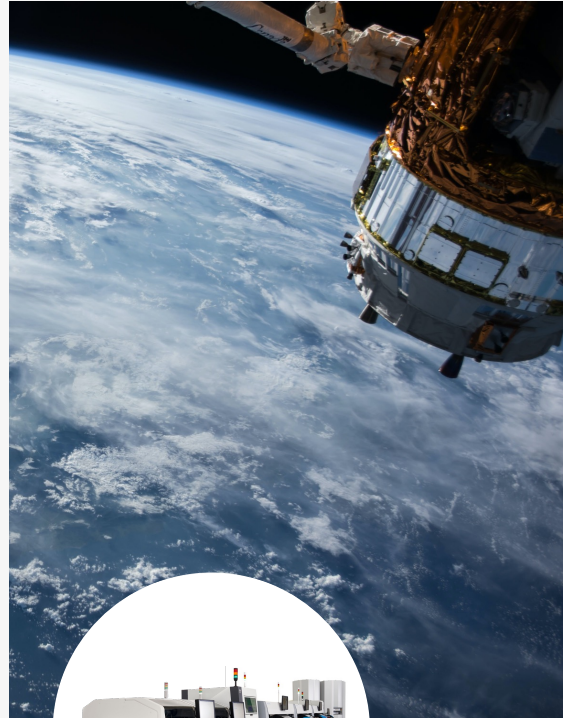
## Pattern Generators

Display, Semiconductor



## High Flex

Medical, Industrial, Aerospace & Defense



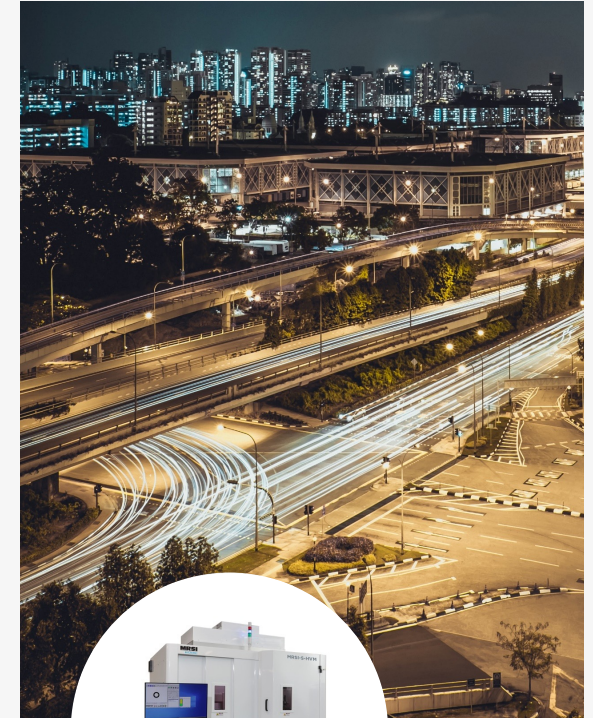
## High Volume

Mobile phones, Computer, Semiconductor, Automotive, Consumer



## Global Technologies

Telecom/Datacom, Aerospace & Defense  
Automotive, Medical, Semiconductor





# Mycronic's **four divisions** – with clear divisional strategies

## Pattern Generators

Display, Semiconductor



**Number one** mask writer company in selected segments



## High Flex

Medical, Industrial, Aerospace & Defense



**Number one** high flex solutions provider for PCB assembly



## High Volume

Mobile phones, Computer, Semiconductor, Automotive, Consumer



**Number one** high volume assembly solutions provider for electronics production with core in dispensing



## Global Technologies

Telecom/Datacom, Aerospace & Defense  
Automotive, Medical, Semiconductor



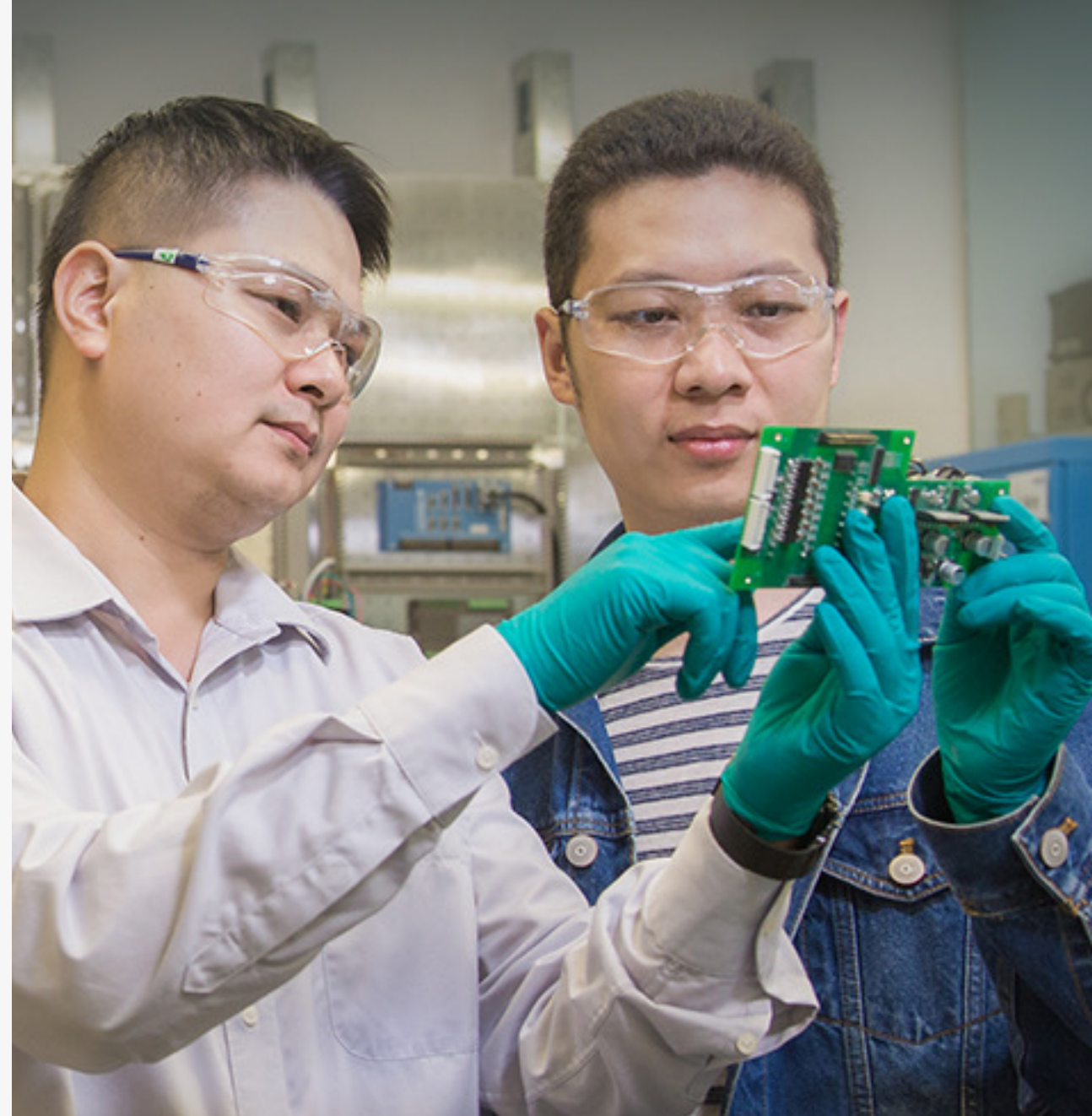
**Technology and market** leader in attractive electronics niches



# Realizing the full potential of Axxon

## Listing on the Shanghai stock exchange

- Strengthens Axxon's brand and market leadership position as the number one electronics dispensing company in China and the world
- Enables the construction of incentive schemes in order to become a more attractive employer in a highly competitive labor market
- Creates an advantage when growing through acquisitions, by being able to offer listed shares as part of the purchase consideration
- Makes Axxon a more attractive supplier and corporate citizen in China





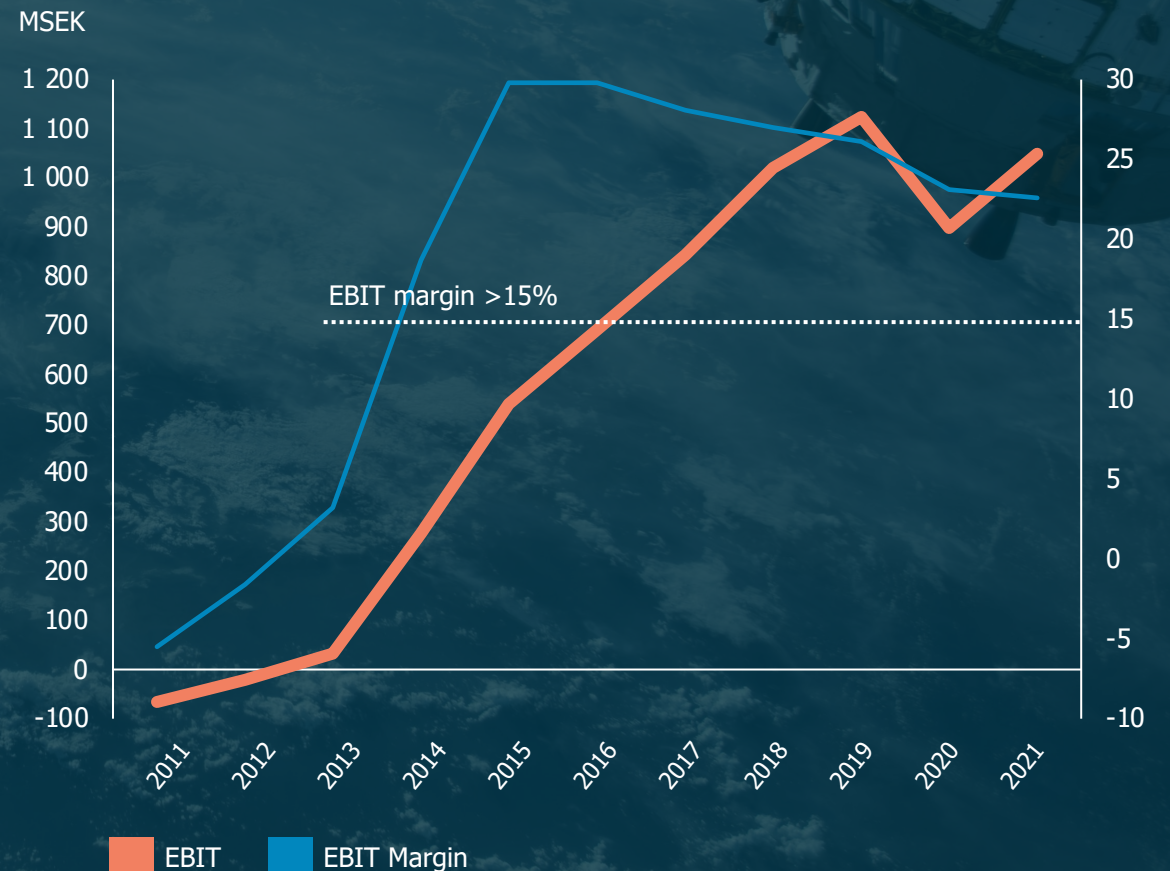
# Financial performance and previous **targets**

Net debt  
<3x EBITDA

## Strong 10-year net sales development



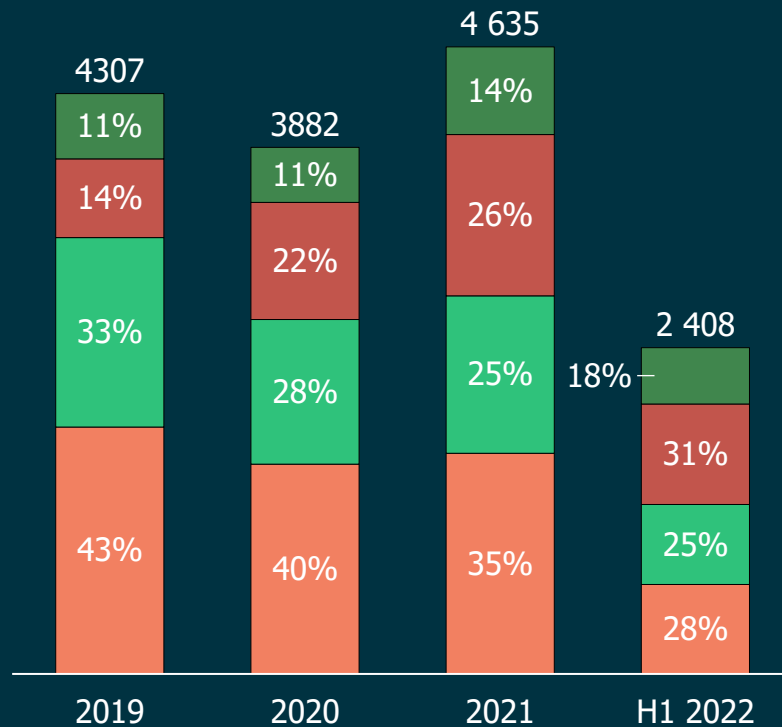
## Profitability above financial target since 2013



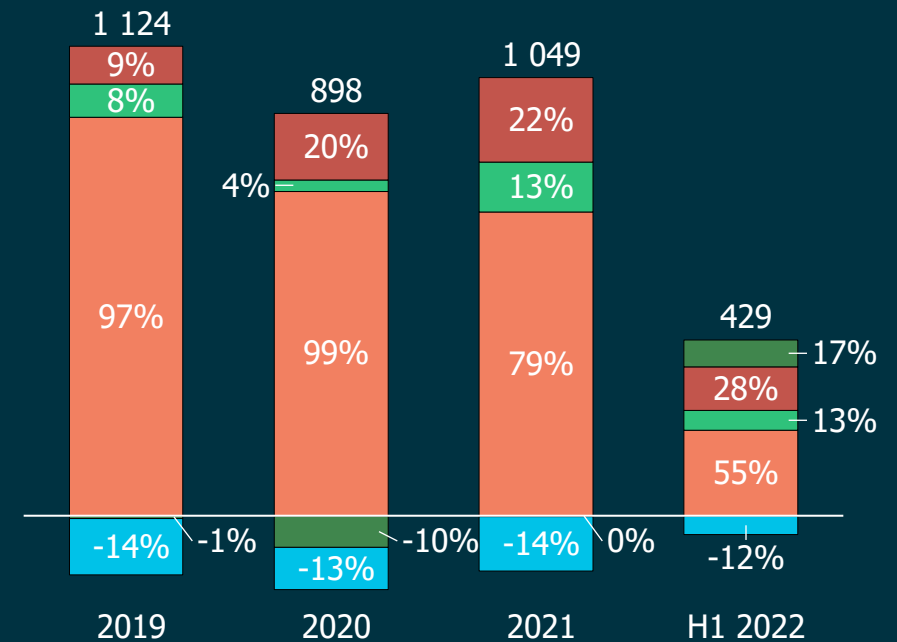
# Towards broader financial contributions

Dependance on Pattern Generators decreasing

## Net sales



## EBIT



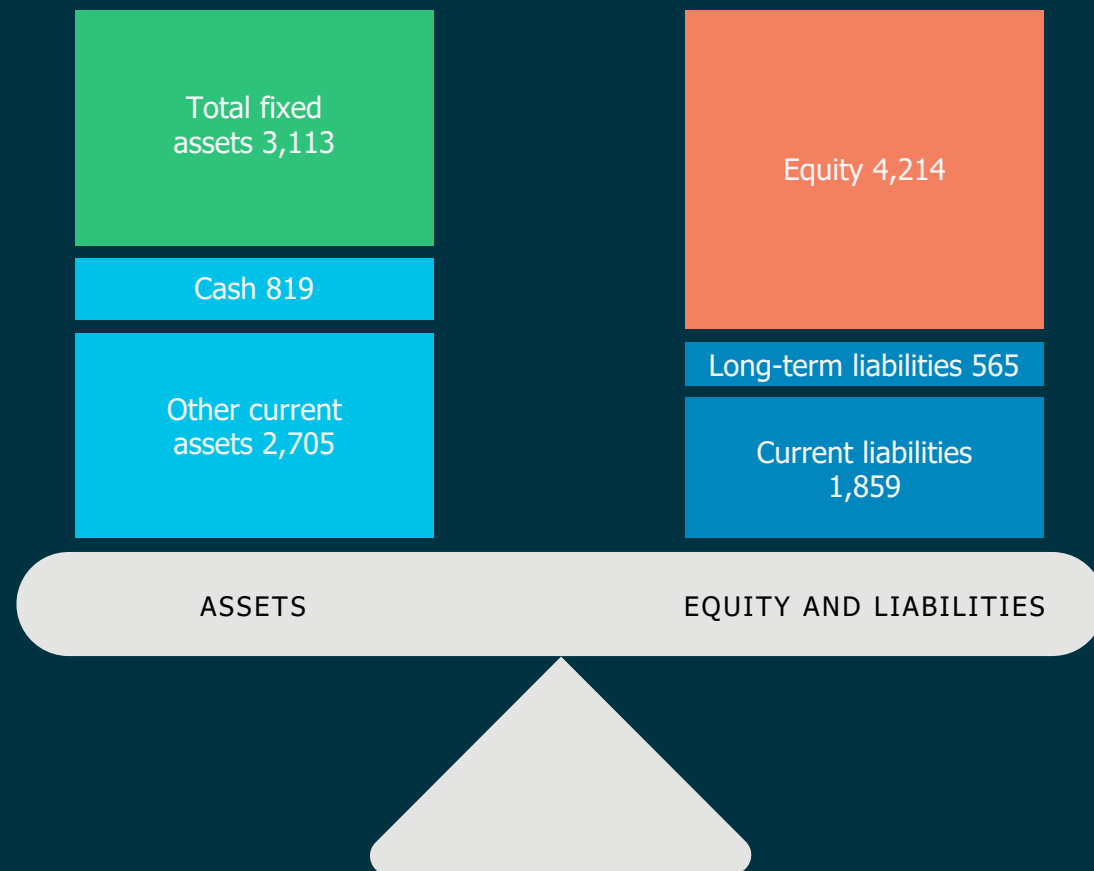
- Global Technologies
- High Flex
- High Volume
- Pattern Generators
- Group functions etc



# Strong balance sheet

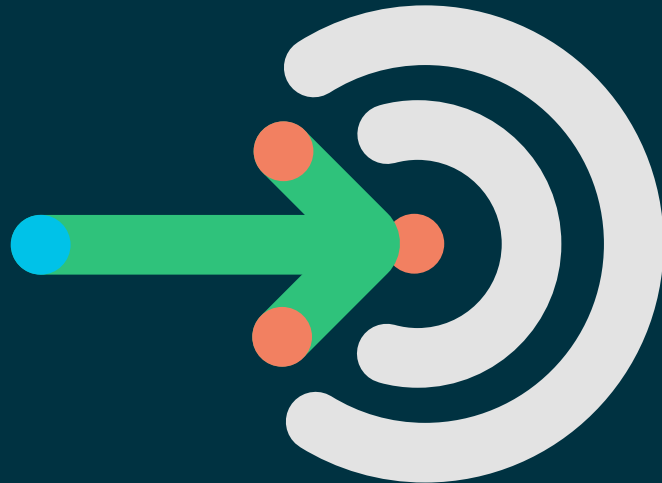
Solid foundation to manage risks and seize opportunities

- Net cash position of 505 MSEK\*
- Equity/assets ratio of 63,5%\*
- Credit facilities of 2 BSEK



\*On June 30, 2022

# Double sales, double profits at half the carbon footprint



**Net sales 10 BSEK**  
**EBIT 2 BSEK**  
**50% CO<sub>2</sub> reduction**

## New financial and sustainability targets

To be achieved by 2027-2030

**Net sales** will reach SEK 10 billion

2x

**EBIT** will exceed SEK 2 billion

2x

Reduce own **CO<sub>2</sub> emissions** by 50%<sup>1</sup>

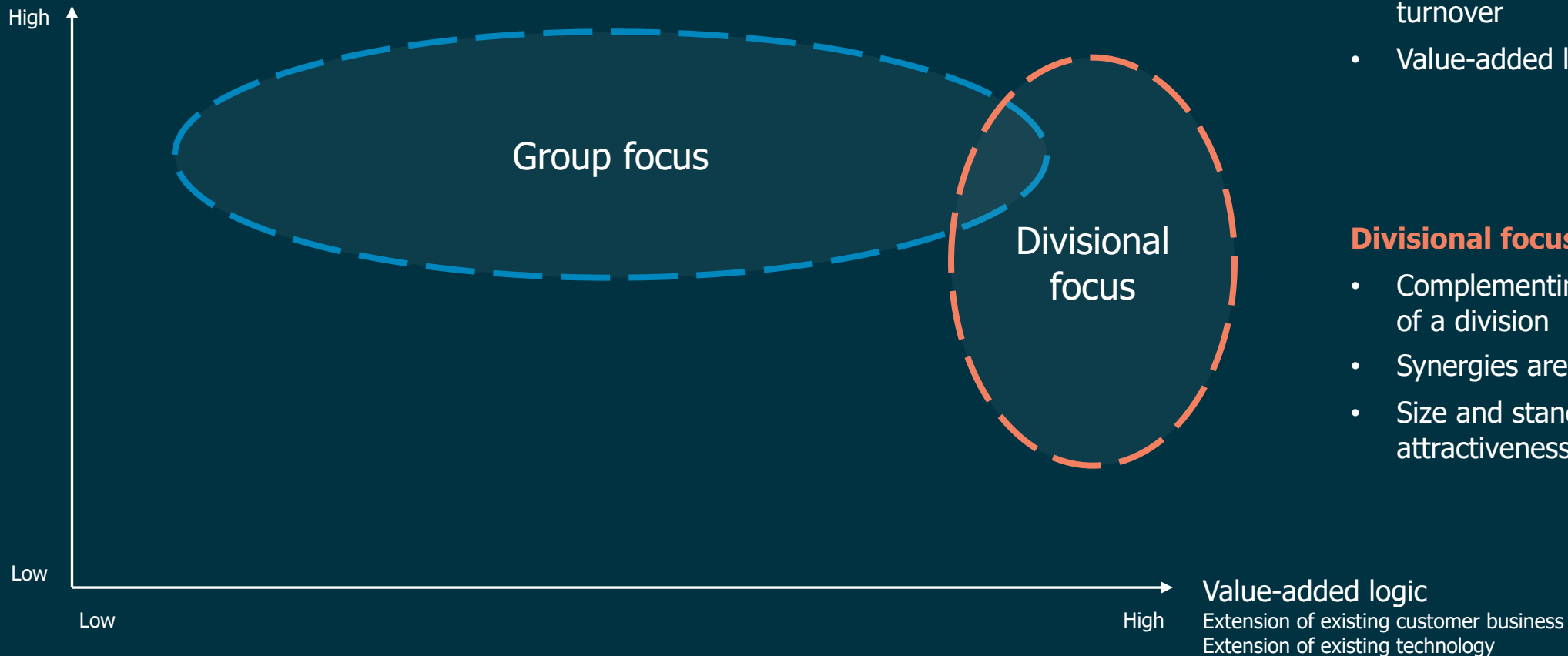
1/2

<sup>1</sup>Compared to baseline year 2020

# M&A strategy

## Stand-alone attractiveness

Market size, future growth, profit pool, technology, recurring revenues, target company financials, target market share, etc



## Group focus characteristics:

- Future growth supported by underlying trends
- Addressing niches with good expected profit pool
- Target size >25 MEUR annual turnover
- Value-added logic less important

## Divisional focus characteristics:

- Complementing the current offer of a division
- Synergies are very important
- Size and stand-alone attractiveness are less important





# Sustainability

---

Lena Båvegård, Sr VP Global Functions  
Kristina Svanteson, Sustainability Manager



# Our commitment

## Long-term sustainability mindset

### Innovation for sustainability

Enable our customers to achieve their sustainability ambitions, through product innovation

### Climate impact from own operations

Cut own CO<sub>2</sub> emissions by 50% to 2030 compared to 2020

### Future engineers through diversity

Foster diversity, equality and inclusiveness in the communities where we act

### Other sustainability topics

- Environmental responsibility
- Social responsibility
- Responsible Business

Set Science Based Targets





# Roadmap to 2030

The journey has started



# Actions on our journey



# Sustainability increasingly a **competitive factor**



Regulatory (r)evolution with distinct increase of requirements



Electronics industry to manage environmental and social challenges



Electronics enabling the green transition, leading to business opportunities



# Our way **forward**

- Implement our sustainability road map for 2030, enabled through engaged and committed organization
- Set Science Based Targets, to future-proof our growth
- Prepare for new regulations (CSRD, EU Taxonomy, Due Diligence Directive...), to ensure our competitiveness
- Continuous strong focus on innovation, to drive the transition to a sustainable electronics industry



Committed to **innovation**

# Division Pattern Generators

---

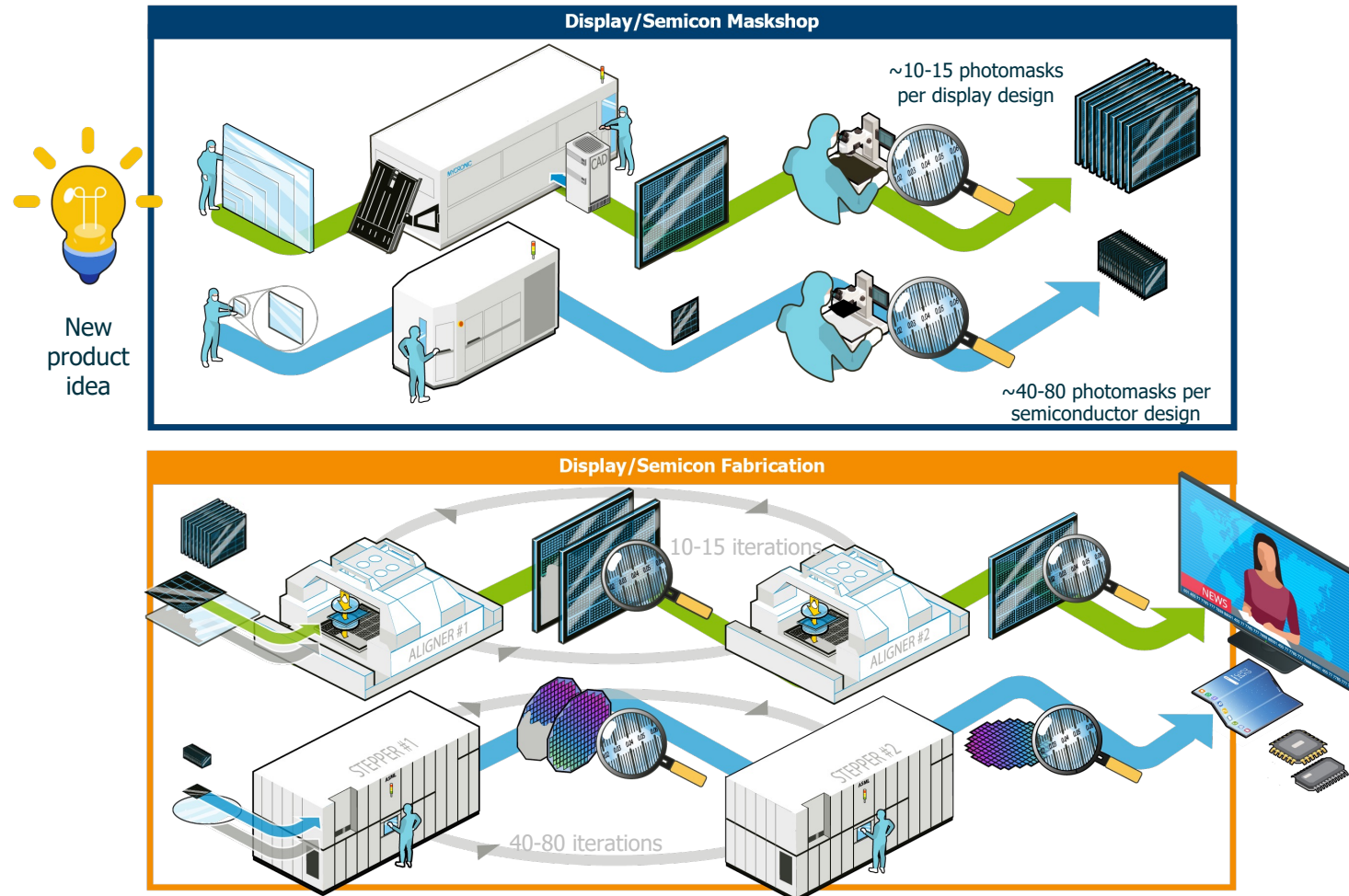
Charlott Samuelsson, Sr VP Pattern Generators

Mikael Wahlsten, Head of Product Strategy and Development, Pattern Generators



# The photomask

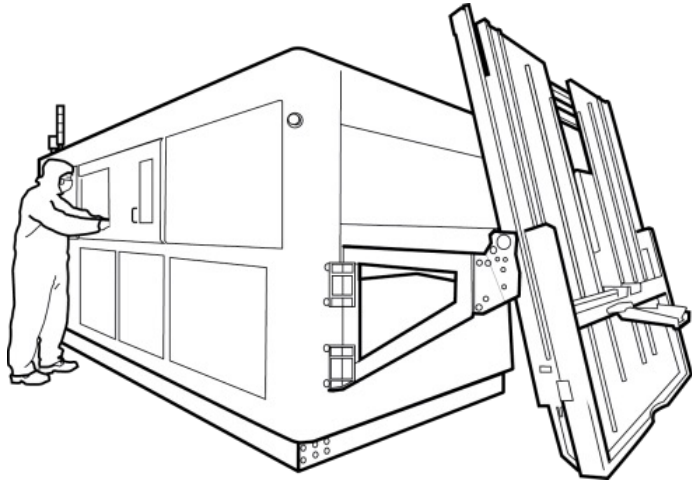
The link between design and mass production of electronics



# Lithography is highly cost effective for advanced electronics

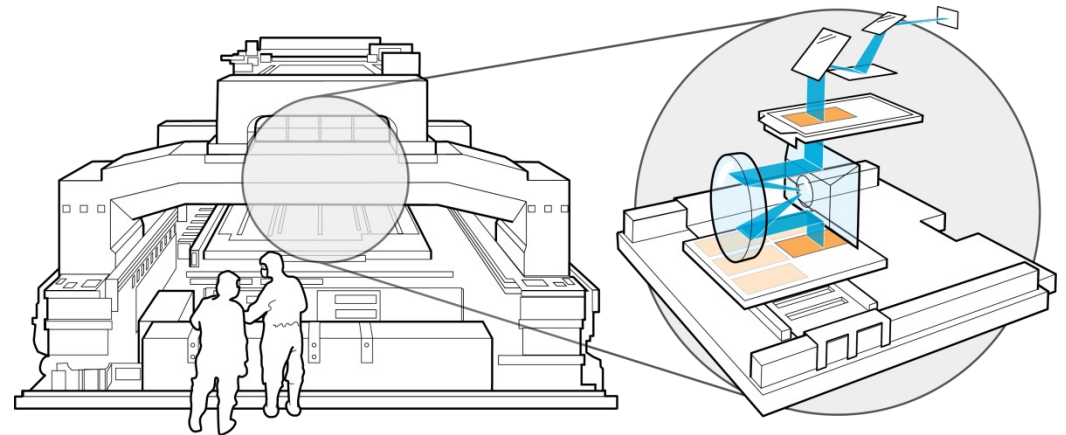
The mask writer is a truly strategic product

## Mask writer – direct writes the photomask



- 24-48 hours writing time
- ~25 Terabyte data

## Aligner/Stepper – copies the photomask



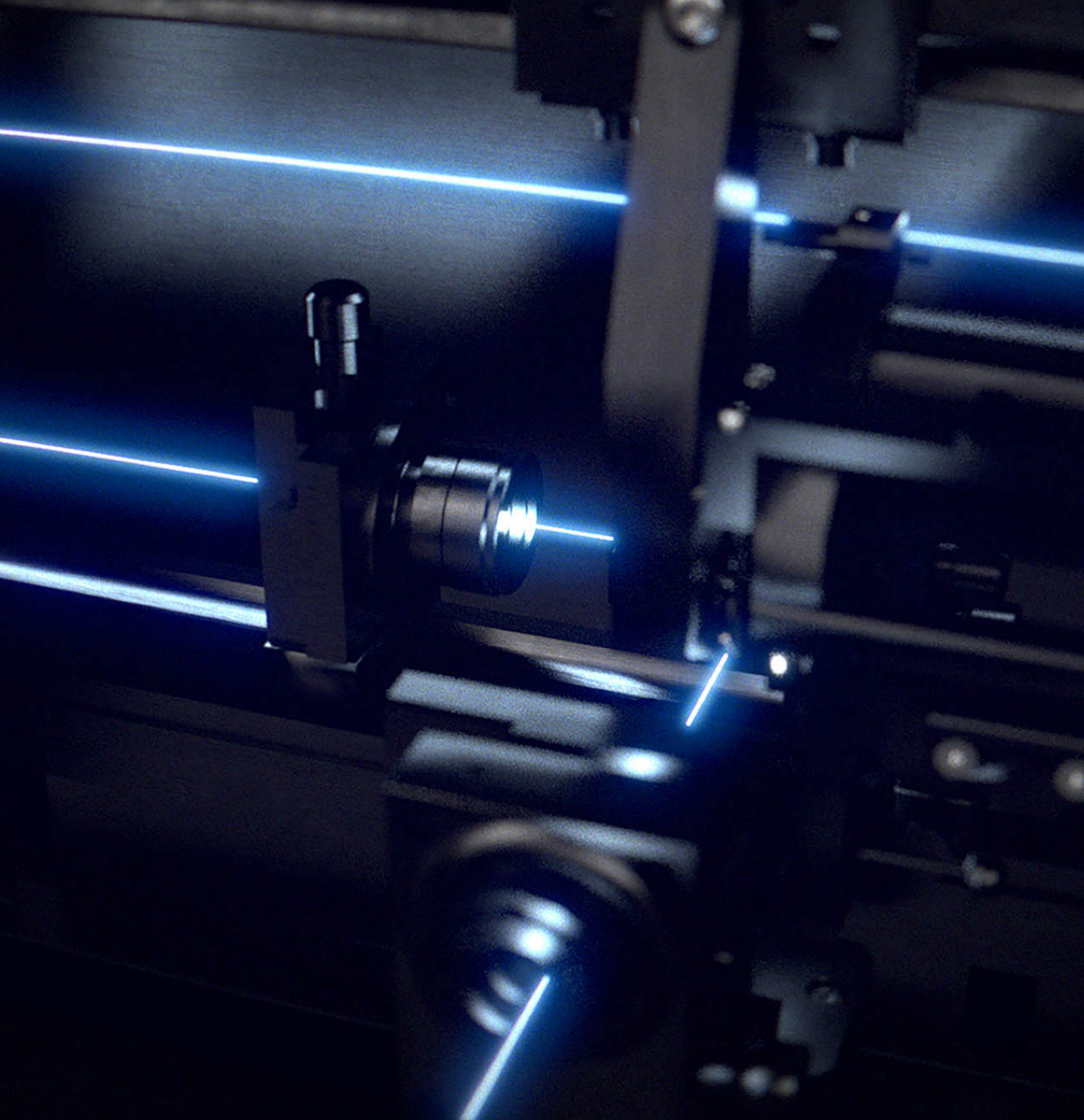
- ~20 seconds to copy the photomask
- ~25 Terabyte data

### Technology very suitable for high volume manufacturing:

- When all in place there is low risk for problems or disturbances during production
- Cost scales very well with volume
- Proven technology developed and fine-tuned over decades

### The mask writer is a truly strategic product:

- 60 mask writers support a 150 BUSD display industry
- 400 mask writers support a 560 BUSD semiconductor industry
- Few but typically large companies constitute the customer base



## Division **Pattern Generators**

**A leading supplier of laser-based mask writers  
for the display and semiconductor industries**

Net sales 2021

**SEK 1,645 million of which 37% aftermarket**

Customers

**Captive and merchant global photomask makers**

Organization

**300 employees**

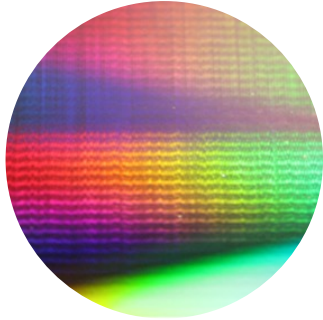
Geographical presence

**Japan, South Korea, USA, China and Taiwan**



# Mycronic has unique skills in photomasks

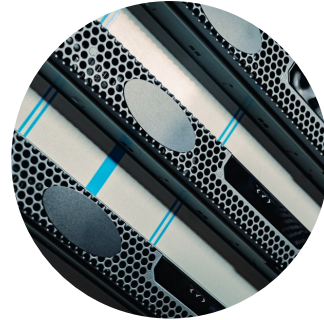
Accumulated competence from mid 1990 creates continued innovations



## Extreme platform stability

- Solving the “Mura” challenge with advanced hardware design and software solution
- Managing the extreme stability requirements for long write times
- Handling photomasks up to 1,800 x 2,000 mm without introducing damages

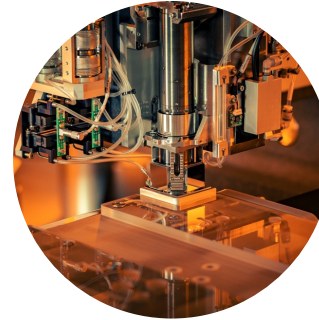
*Mura: Image irregularities caused by small but systematic deviations*



## Deep industry understanding

- Long and close collaboration with world-leading customers
- High yield by advanced data management and design for highest cleanliness
- In-depth understanding of the production environment for displays as well as semiconductors

*Photo: Courtesy of SKE Electronics*



## Wide technology portfolio

- Technology and platform for pattern generation developed and refined over 30 year across many applications
- Leading edge technology and competencies including mechanics, software, optics, electronics & system design



## People and competence

- Large pool of skilled and experienced people across all functions ensuring efficiency and quality
- Strong local presence close to the customers securing good support and close customer relation

# Display photomask industry trends

Mask writers indispensable for the display industry

## Key drivers



Display size, form factor, functionality and power consumption



Higher quality displays and transition to OLED also for larger displays



Displays in new applications and differentiation

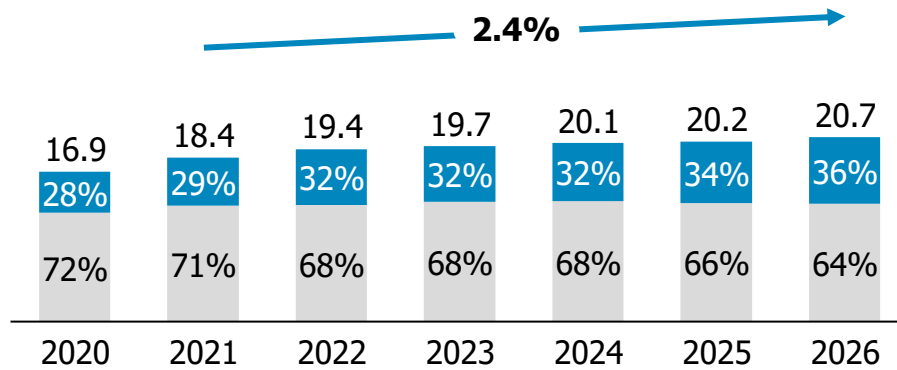
## Positive impact on photomask segment

- Trend towards more photomasks per design
- OLED drives more advanced photomasks
- Differentiation drives photomask volumes
- Power efficient technologies require more photomasks

# Display photomask industry trends

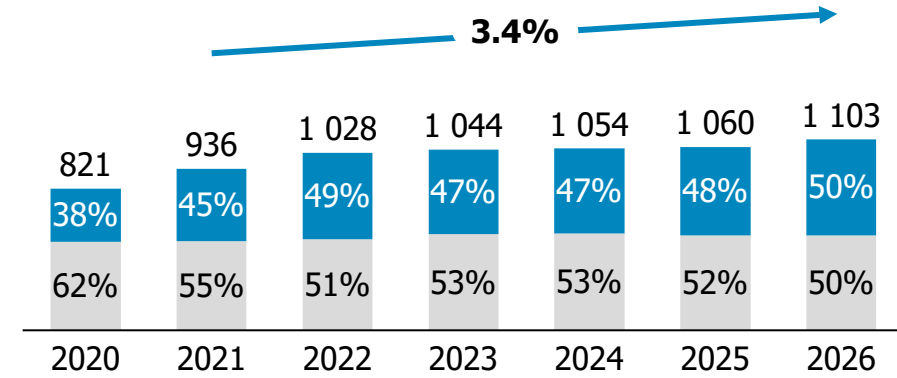
Mask writers indispensable for the display industry

**Area of display photomasks**  
(Thousands of m<sup>2</sup>)



■ OLED  
■ LCD

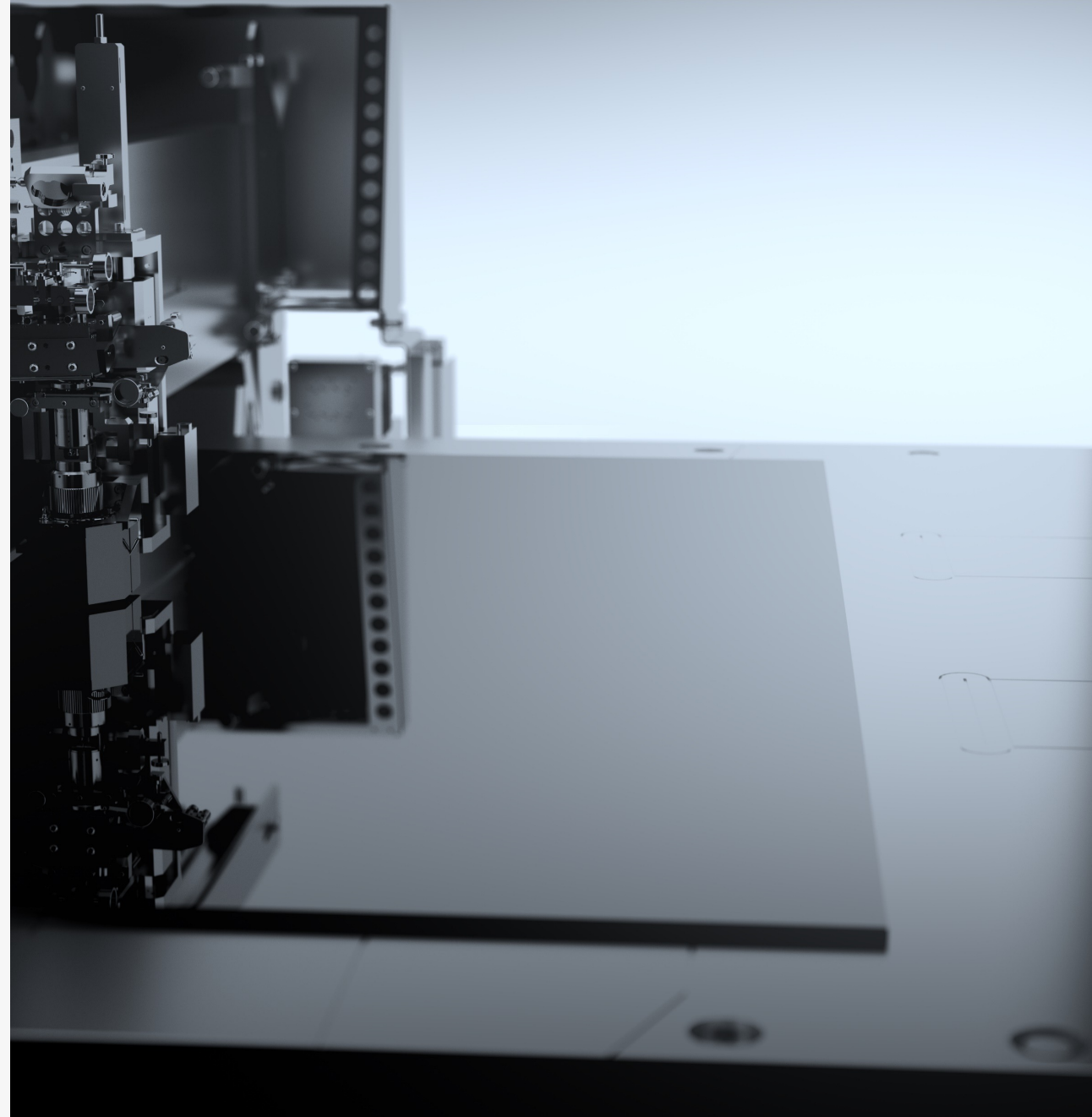
**Display photomasks segment**  
(MUSD)





# Mask writers enabling the display industry

- Full portfolio of mask writers for display applications
  - Prexision 80 and Prexision 800 for top critical applications
  - Prexision 8/10 to address the advanced segment
  - Prexision Lite 8 to address the commodity segment
  - Trade-in offering to support generation shift
- Prexision MMS offering advanced position measurement to secure photomask quality
- Incremental development strategy to secure increased capability with maintained stability
- Long term development roadmap
  - Development done in close collaboration with customers and industry partners
- Actively develop, maintain and support a modern installed base



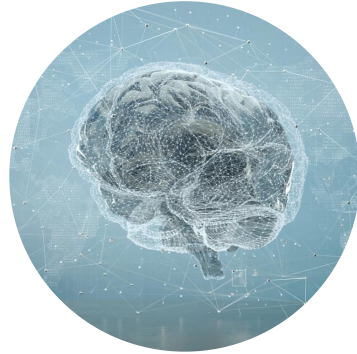
# Semiconductor photomask industry trends

Mask writers indispensable for the semiconductor industry

## Key drivers



Electrification of everything

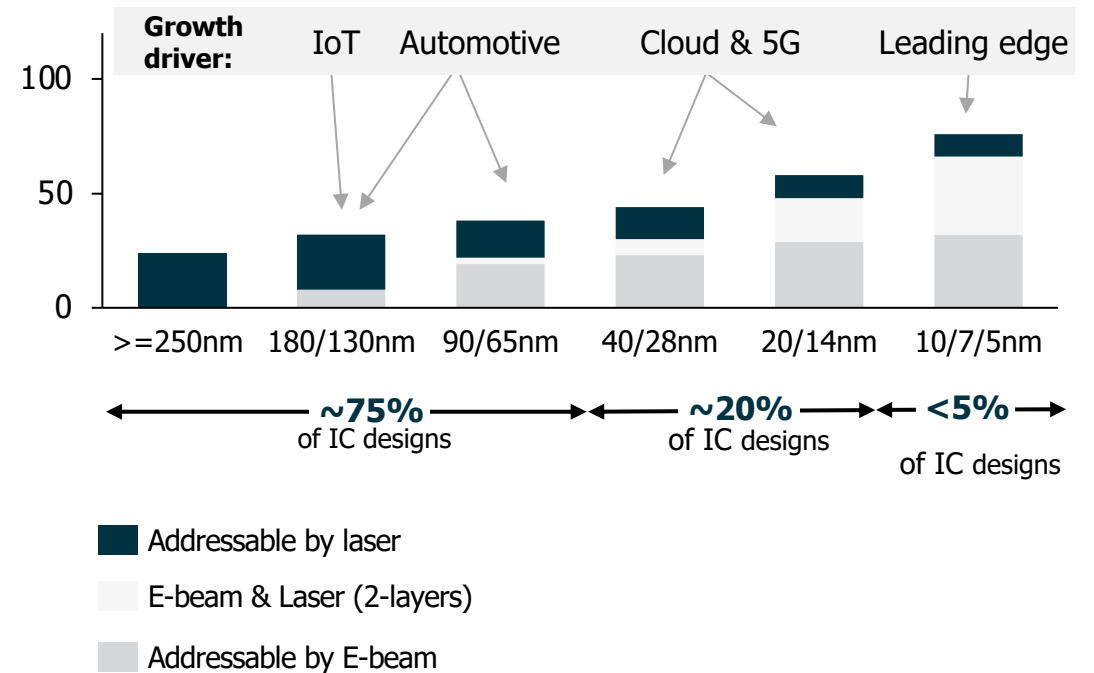


AI, Big Data, cloud and edge computing solutions



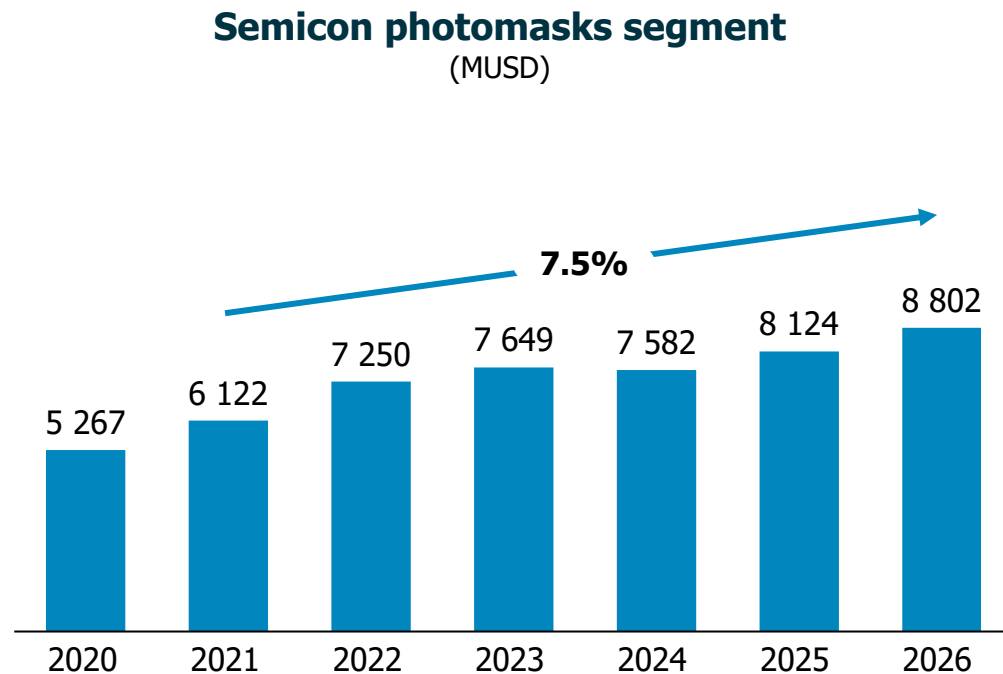
Communication and 5G

Typical #masks per design



# Semiconductor photomask industry trends

Mask writers indispensable for the semiconductor industry



## Positive momentum in semicon photomask industry

- Market growth across design nodes
  - New China investments
  - Investments by leading edge players
- Majority of value growth in high end
- The large volume remains at mature nodes



# An industry leader for laser mask writers

- SLX mask writer for semiconductor applications
  - Critical layers down to around 90nm node
  - Second layers writing capability for high end photomask
  - Lowered carbon emissions by new energy efficient lasers
- Good market momentum driven by
  - Capacity expansion, replacing legacy writers and strategic investments
- Capitalize on synergies with display mask writers
  - Shared platform and technology
  - Shared resources and service organization
  - Future development needs in synergy with display needs
- Long term commitment to the industry
  - Ambitious roadmap supporting customers with continued innovation and cost-effective production solutions
  - Explore additional growth opportunities based on the SLX platform



# Aftermarket business

A robust, growing profitable base – enabling long term business perspective

- Premium customer-centric support through a global, highly skilled service organization close to customers serving both semiconductor and display mask writers
- Recurring all-inclusive MYCare service contracts
- Attractive trade-in opportunities for installed base
- Value adding aftermarket offering for sustainability during product use
  - Solid State Laser to significantly reduce CO<sub>2</sub> emissions
  - Digitalization in offerings and service



Installed base of systems

**140**

AM Sales part of total sales 2021:

**37%**

**>98%**

of all systems in use on MYCare Service Contract or Warranty

# Division **Pattern Generators**

## **Display – Mask writers enabling the display industry**

- Incremental development and technology readiness to push high end
- Trade-in program to support customers through generation shifts

## **Semiconductor – An industry leader for laser mask writers**

- Accelerate development to capture opportunities for the SLX platform
- Technology leadership in semiconductor packaging

## **Aftermarket - A robust, growing profitable base**

- Premium customer experience
- Long-term partner with future-proof technology and sustainable offerings



**Number one**  
mask writer  
company in  
selected segments



A microscopic view of a printed circuit board (PCB) with a probe tip positioned over a component. The image is dark and blue-toned, showing intricate details of the board's surface and the probe's tip.

# Division **High Flex**

---

Clemens Jargon

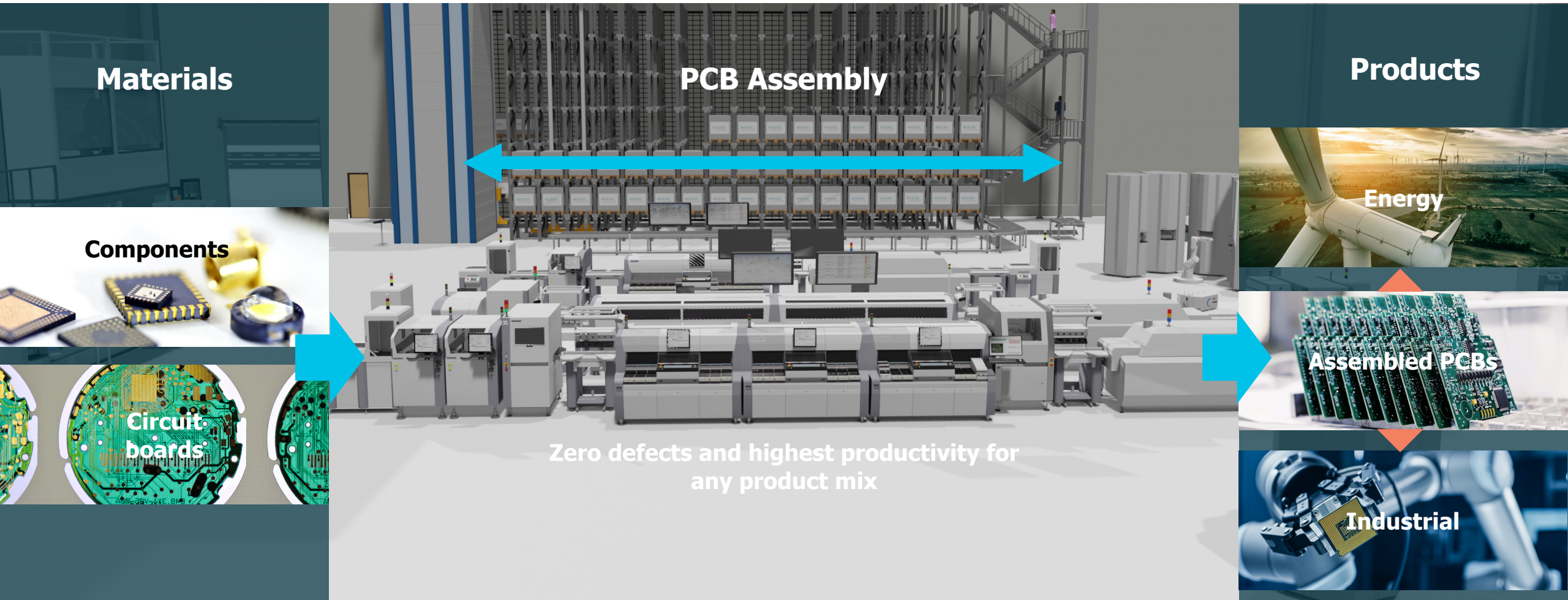






# Our place in the value chain

Production equipment for assembly of PCBs in electronics manufacturing





# Putting PCB assembly manufacturers in control

Zero defects and highest productivity for any product mix

## Factory connectivity

Modern and open interfaces to seamlessly integrate PCB assembly solutions to the Smart Factory.

## Zero defect printing

Closed loop to achieve 100% control of the printing process and to automatically adjust and repair the printing result.

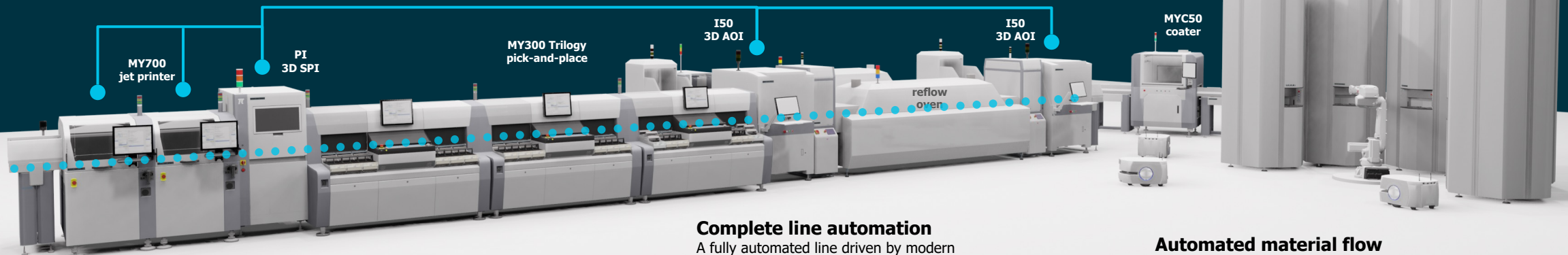
## Full process control

Complete process control with high first pass yield and zero defects leaving the assembly line.

## Complete dispensing and conformal coating solutions

Best-in-class tools for electronics protection, to include curing, transport, inspection

## Intelligent component storage



## A digital user experience

A digitalized environment where monitoring systems and operators on the floor have full transparency, a real time view, online performance and factory output.

## Complete line automation

A fully automated line driven by modern M2M protocols with a tight software integration to the Smart Factory.

## Automated material flow

A seamless and timely flow of components, PCBs and feeders to and from the assembly line supported by robotics.



REDUCE WORKING CAPITAL



INCREASE FIRST PASS YIELD



MAXIMIZE UTILIZATION



IMPROVE DELIVERY PERFORMANCE



BOOST PRODUCTION OUTPUT

# Jet printing

## What does it do

High-speed, high-accuracy on-the fly dispensing of solder paste and other adhesives on to printed circuit boards.

## What does it solve

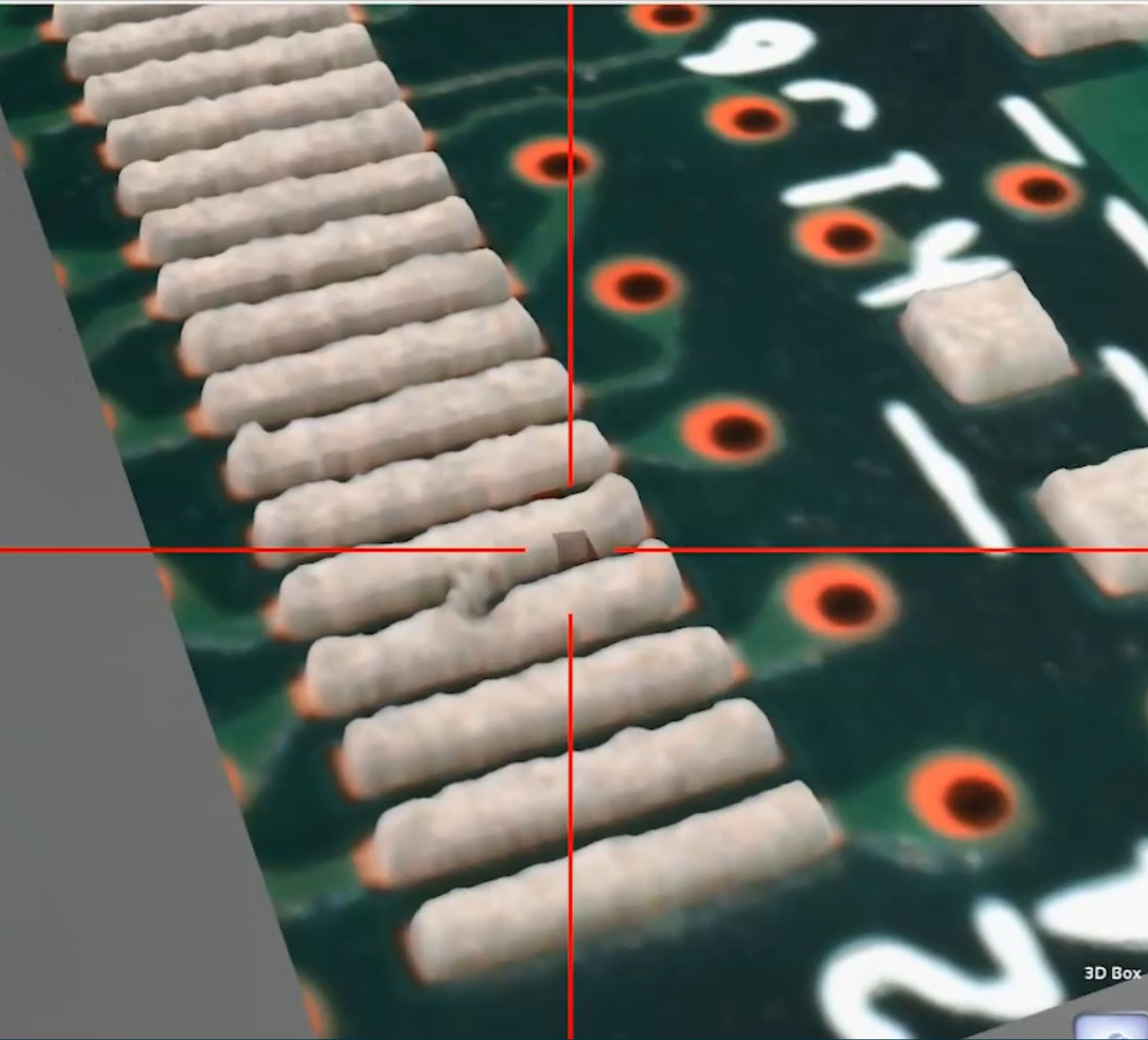
- High-quality solder joints
- Board revisions on-the-fly
- Zero changeover time between jobs
- Consistent print result over time

## Customers

- Electronic manufacturers with frequent job changeovers and new product introductions (NPI).
- High volume manufacturers seeking to solve solder paste dispensing on challenging board designs.



**MYPro MY700 – Versatile high-speed jet printing platform**



**MYPro PI – Accurate solder paste inspection made simple**

# Solder paste inspection

## What does it do

High-precision 3D inspection of the solder paste print pattern on printed circuit boards.

## What does it solve

- Eliminates errors
- Accurate and consistent volume measurement
- Auto-programming

## Customers

- Manufacturers of high-reliability electronics in segments such as automotive and aerospace.
- Electronic manufacturers with a need to secure yield in PCB assembly.



# Component placement

## What does it do

High-accuracy mounting of electronic components on printed circuit boards.

## What does it solve

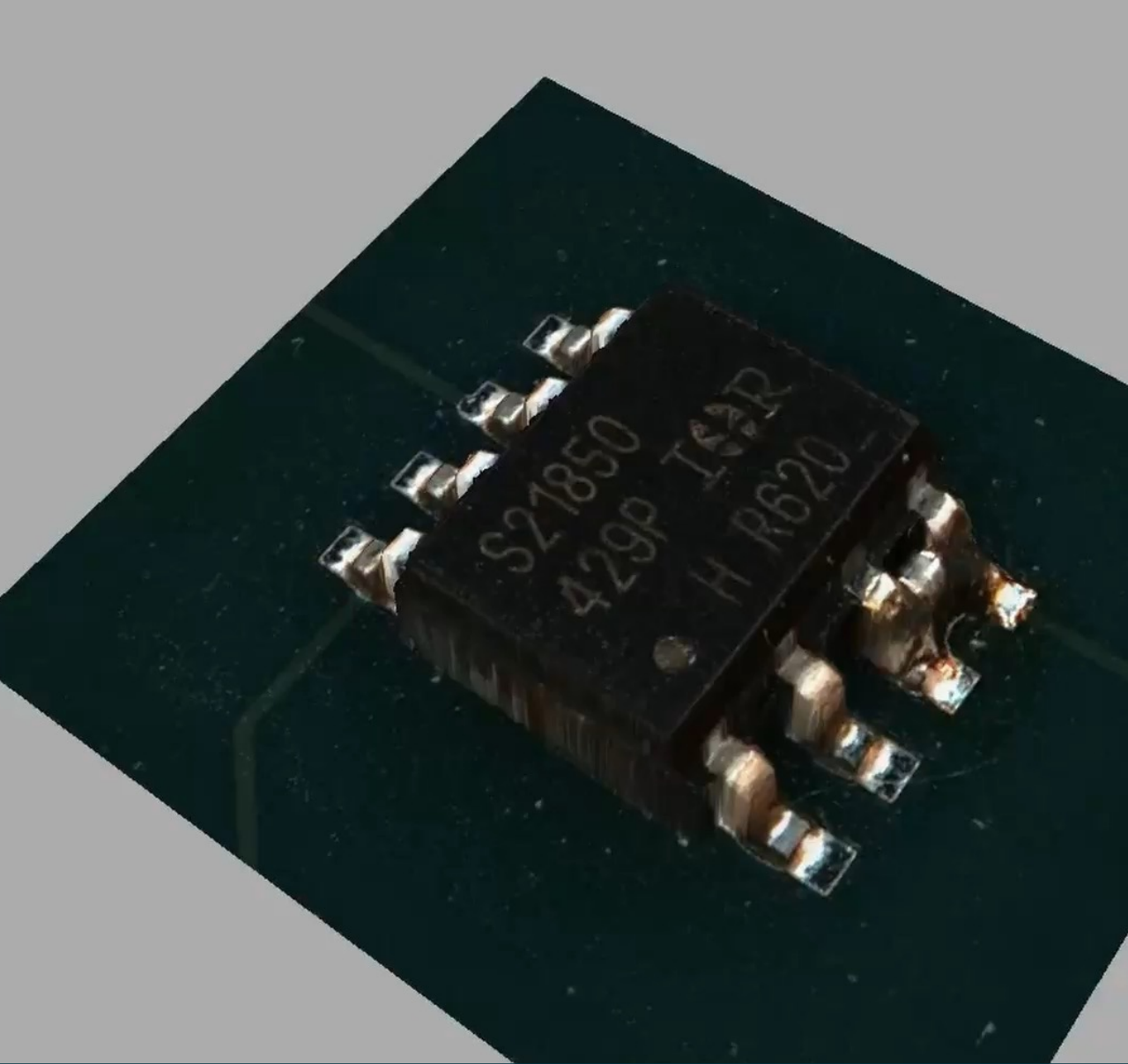
- Mount any component on any board
- All-in-one capability
- Low changeover cost
- High equipment utilization in high-mix
- Efficient production down to batch size one

## Customers

- Electronic manufacturers of high-value, high-quality electronics with frequent changeovers and new product introductions (NPIs).



**MYPro MY300 – Flexible pick-and-place for any batch size**



**MYPro I50 - Put your inspection on autopilot**

# Component inspection

## What does it do

3D inspection of components and solder joints, with a comprehensive defect coverage on assembled printed circuit boards before or after the reflow oven.

## What does it solve

- Secures production quality
- Improves first pass yield
- Identifies process issues
- Robust and easy programming supported by AI

## Customers

- Electronic manufacturers with high-quality requirements, e.g. manufacturers of high-reliability electronics in segments such as automotive and aerospace.



# Material storage

## What does it do

Automated and safe storage of electronic components on reels.

## What does it solve

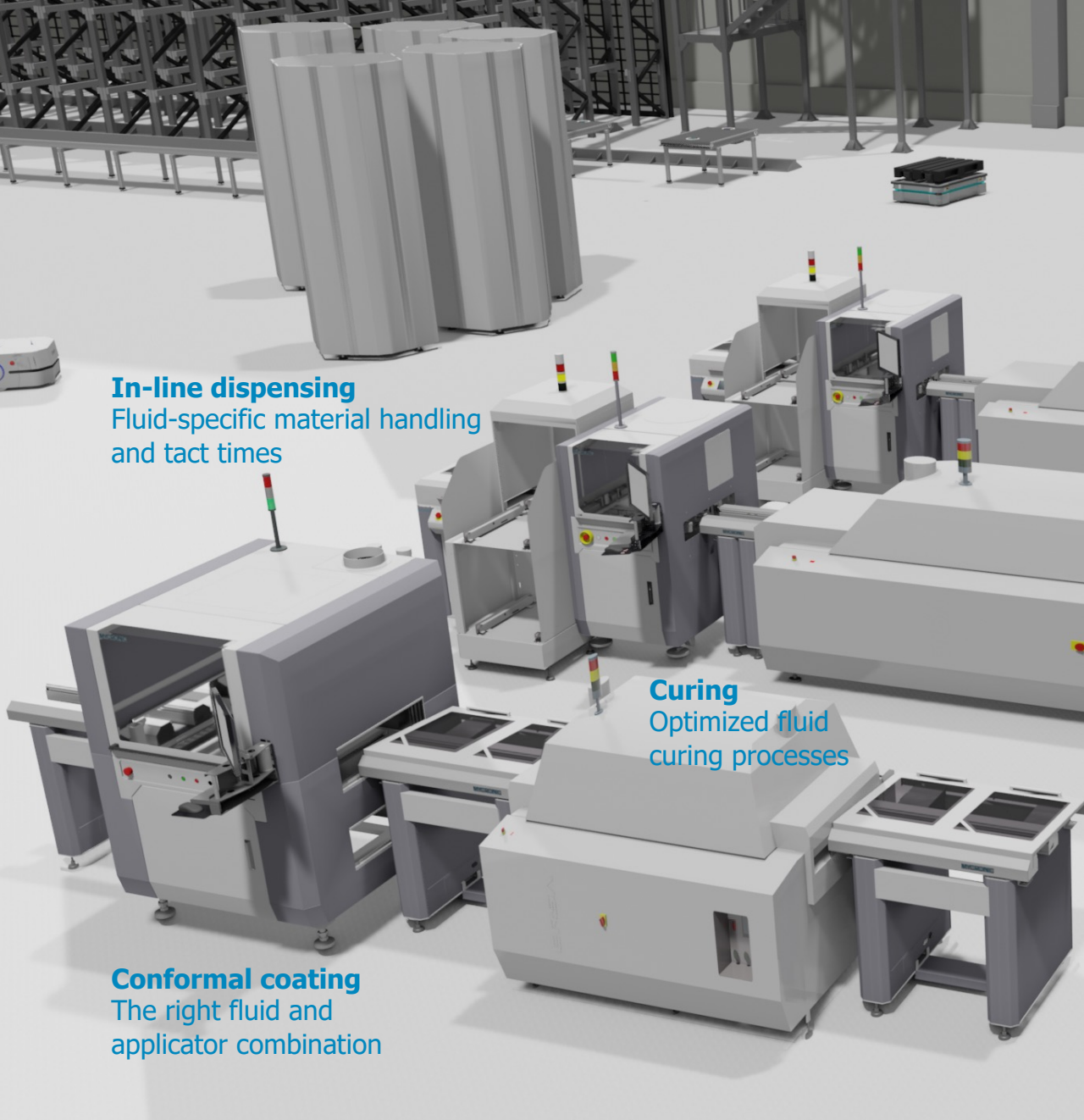
- Improves production efficiency
- Automates the material flow to and from the line
- Reduces risk of misplaced components in factory
- Controlled environment for sensitive components

## Customers

- Volume manufacturers looking for an automated buffer storage solution near the production lines.
- Small to mid-sized electronic manufacturers in need of an intelligent material handling solution for the most frequently used parts.



**MYTower – Intelligent and safe storage of components**



### **In-line dispensing**

Fluid-specific material handling  
and tact times

### **Curing**

Optimized fluid  
curing processes

### **Conformal coating**

The right fluid and  
applicator combination

# Process expertise for ruggedized electronics

Solve any dispensing or coating challenge with a comprehensive range of in-line, tabletop and process control solutions tailored for your application.

## **We can offer**

1. Leading technologies and expertise for any dispensing or conformal coating application
2. Flexible configurations with a broad offering of valve technologies and systems

Mycronic is a leading supplier of dispensing and coating solutions to the electronics industry with many of tier 1 manufacturers as customers.





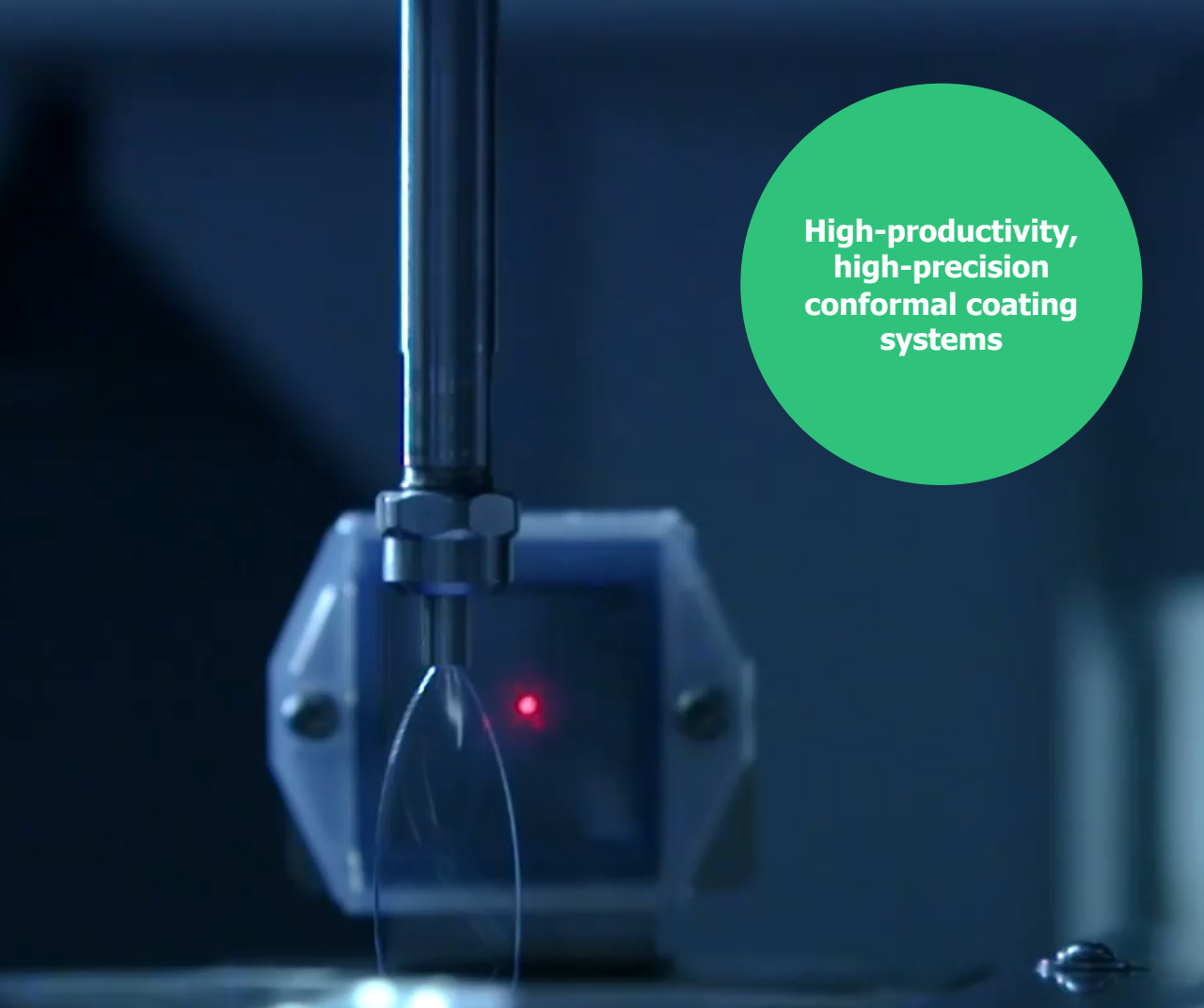
# Protect your electronics

## For a ruggedized world

Precise and flexible  
dispensing systems

### **MYSmart™ series in-line dispensers**

The MYSmart series offers a wide range of in-line dispense solutions together with a comprehensive portfolio of valve technologies. Proven in the most advanced production environments, make it possible to handle a vast array of current and emerging products, assembly fluids and package types.



High-productivity,  
high-precision  
conformal coating  
systems

### **MYSmart™ series in-line coating**

Automate complex coating processes, monitor process parameters and switch spray patterns without interruption. The MYC50 gives you powerful, software-driven process flows that ensure years of productivity for even the most complex printed circuit boards.



# Equipment market for PCB assembly

- Market size is estimated to USD 6 200 million, of which more than half is related to pick-and-place machines.
- Market drivers along with a forecasted long-term growth of the electronics industry indicates a stable market development for flexible electronics assembly equipment.
- A highly competitive landscape with plenty of capital equipment suppliers.

## Market drivers

- **Factory return on investment (ROI)**
- **Agile production**
- **Factory automation**
- **Electronics reliability**

<b>ASM</b>	<b>Yamaha</b>	<b>Nordson Asymtek</b>	
<b>Fuji</b>	<b>Hanwha Techwin</b>	<b>Juki</b>	<b>Viscom</b>
	<b>Saki</b>	<b>Panasonic</b>	<b>Koh Young</b>

- Mycronic have a unique market position being a one-stop shop for flexible full line assembly solutions.



# Our customers

Electronic manufacturers of PCB assemblies in need of **flexible production solutions** combining capabilities

- Mount any component on any board
- Zero changeover time in high-mix environments
- Zero defects
- Highest first pass yield

Leading global electronic manufacturers looking for **unique process capabilities** and **technologies** to

- Achieve high-quality solder joints
- Ruggedize electronics
- Improve process control
- Automate material handling









# Division **High Flex**

- Grow within home turf
- Extend business into new markets
- Broaden aftermarket - accelerating customers to success
- Sustainable profitability



**Number one** high  
flex solution  
provider for PCB  
assembly



**New product mixes**

**New innovations**

**New perspectives**

“Our vision is to enable the zero-defect electronics assembly factory with the highest possible utilization – for any product mix.”






# Division High Volume

---



A composite image of Earth from space. The Earth is shown in the center, with a bright light source on the left side, creating a lens flare effect. The background is a dark, starry space with a faint nebula on the left. The text "From a future you can't see" is overlaid at the bottom.

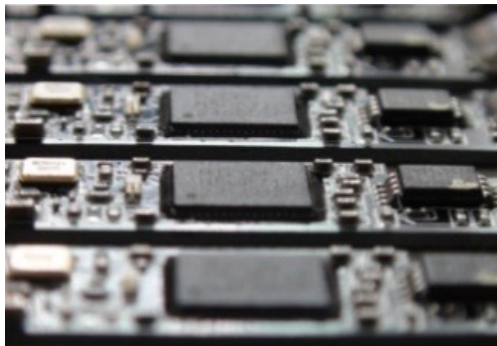
From a future you can't see



# High Volume division principal target industries

Full potential development across different industries

## Consumer Electronics



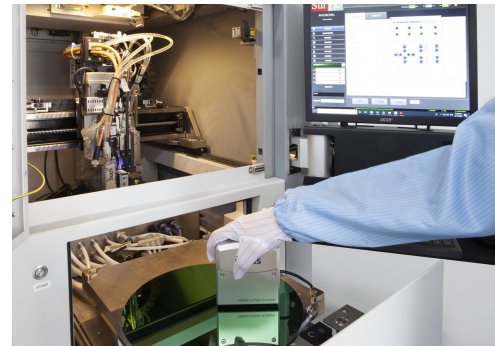
Consolidate leading position in China and expand overseas

## Automotive



Capitalize on the electrification trend

## Semiconductor



Launch robust products into several attractive segments

## Final Assembly

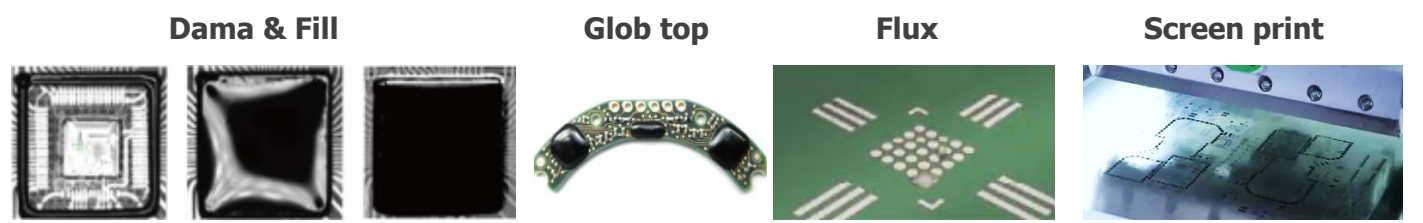
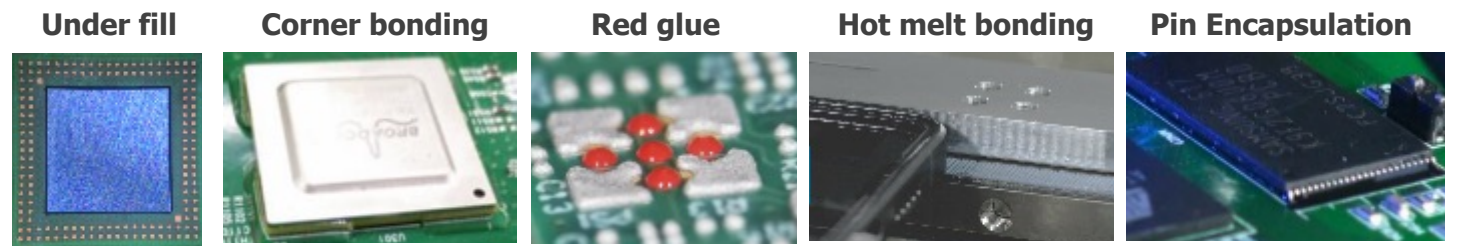


Offer final assembly solutions to existing PCB assembly key accounts

# PCB Assembly



Au77s      Au99M      Au99C      Au99L      ASF100      AV100      CC850





# Consumer Electronics industry

Expand leading technology and solutions in PCB assembly dispensing & screen printing in China and overseas



Our customers

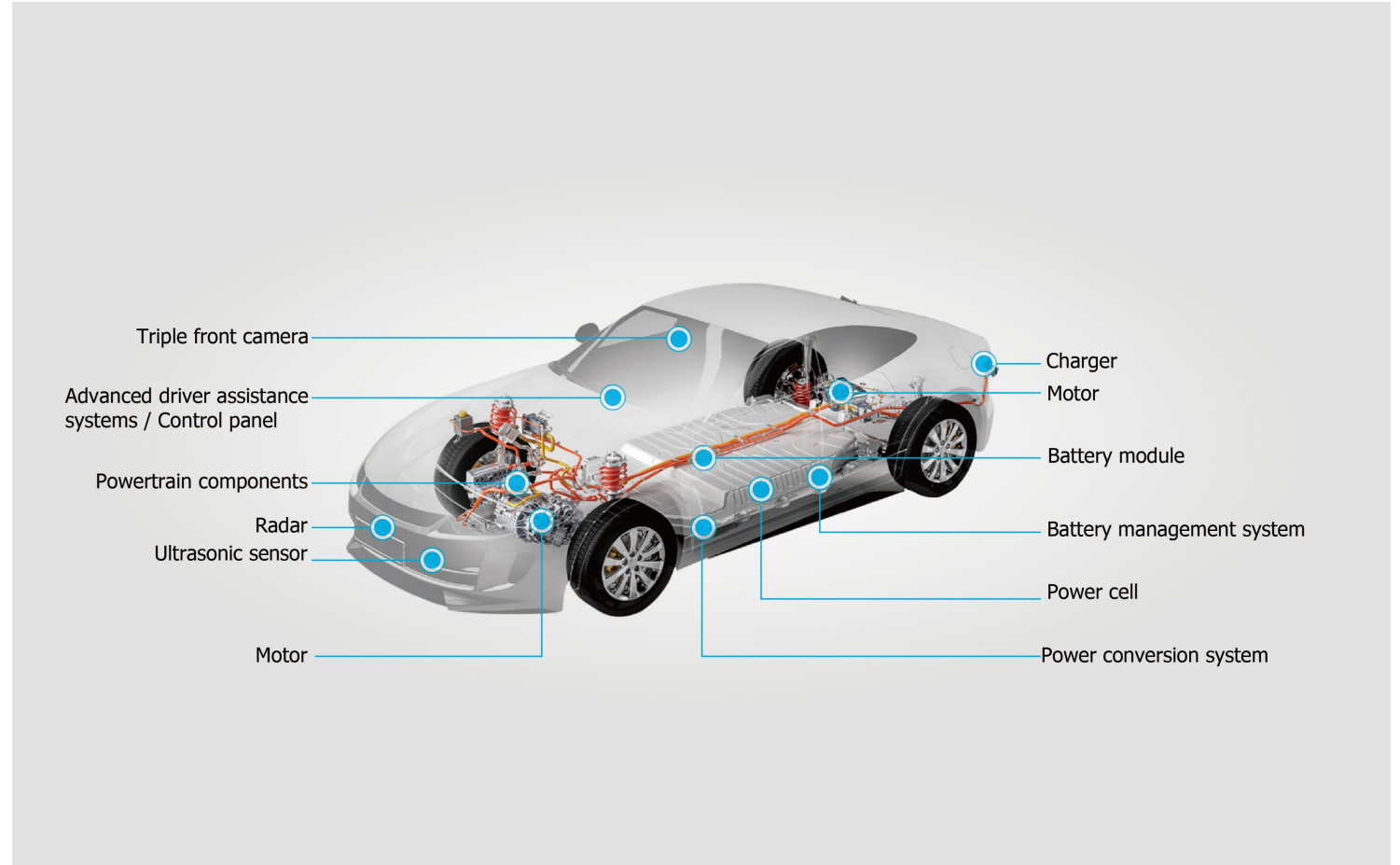
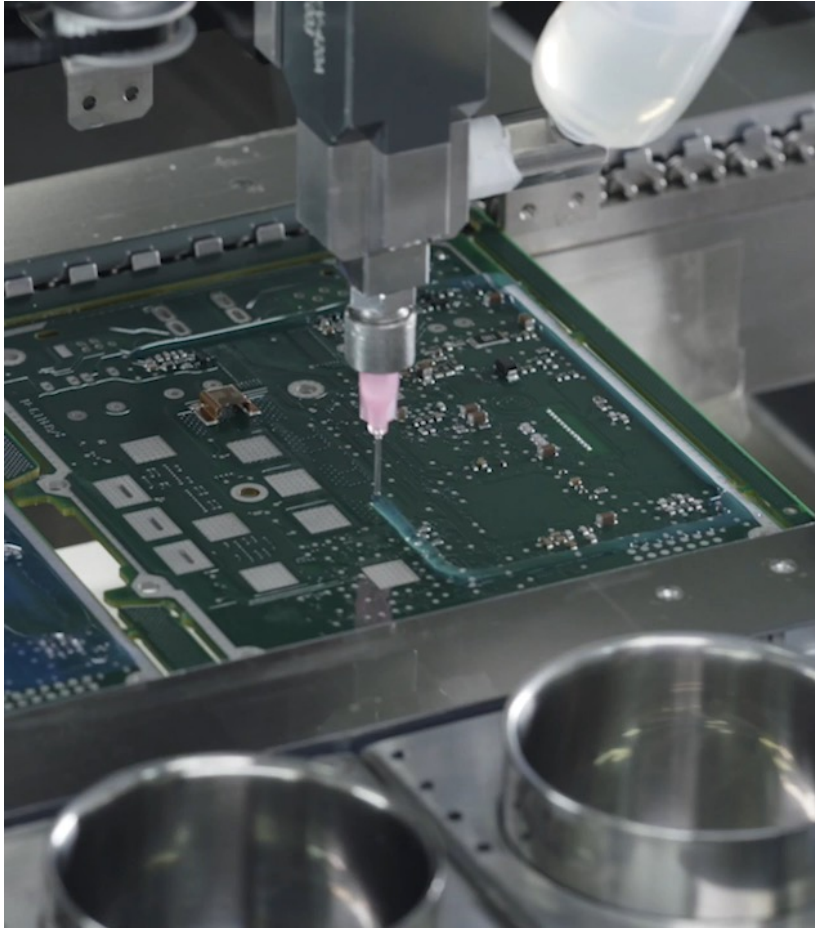
**TOP 10**  
Smartphone  
manufacturers

**TOP 10**  
Electronic  
Manufacturing  
Service  
(EMS)

**TOP 5**  
Original Design  
manufacturer  
(ODM)

# Automotive industry

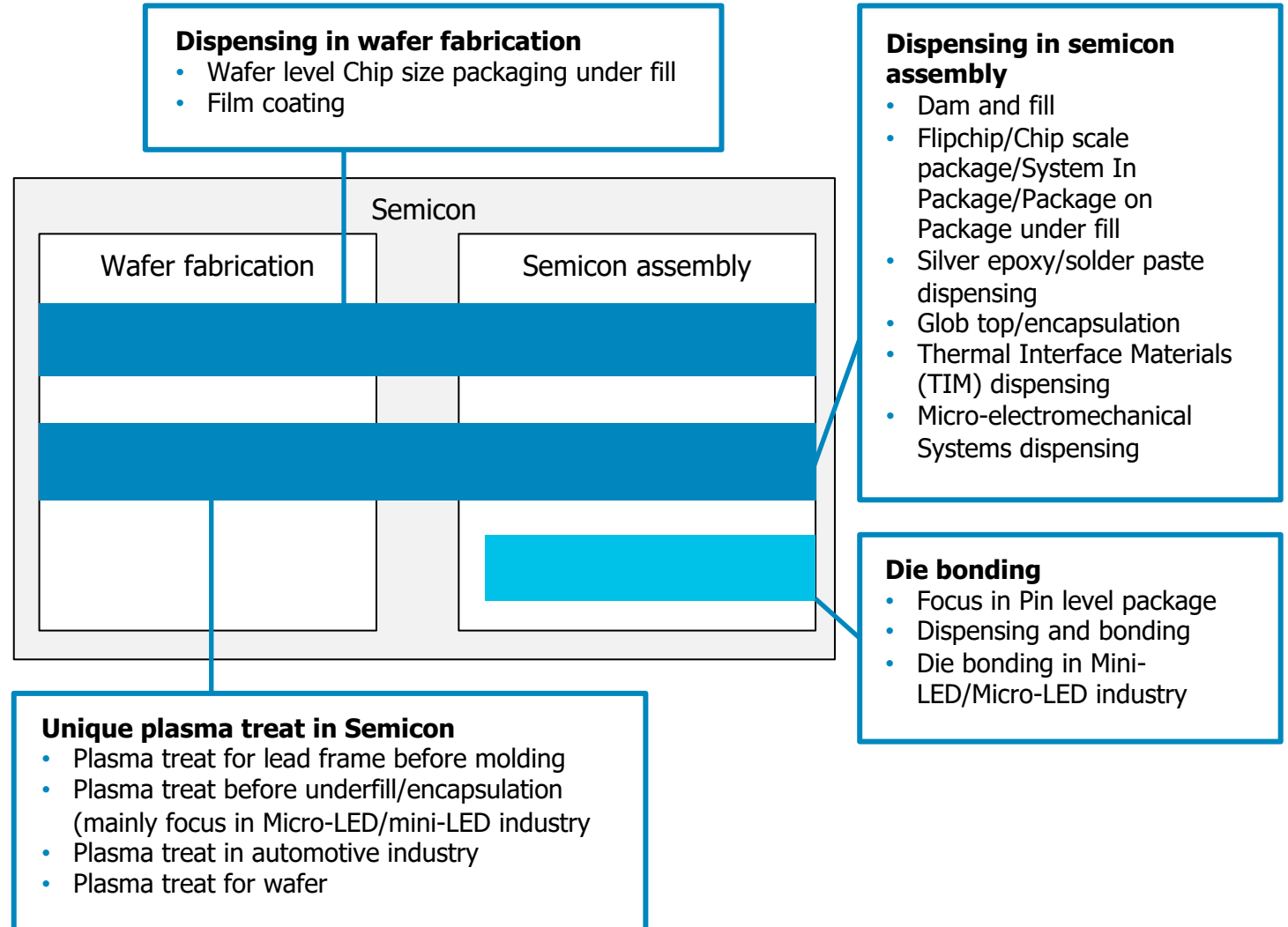
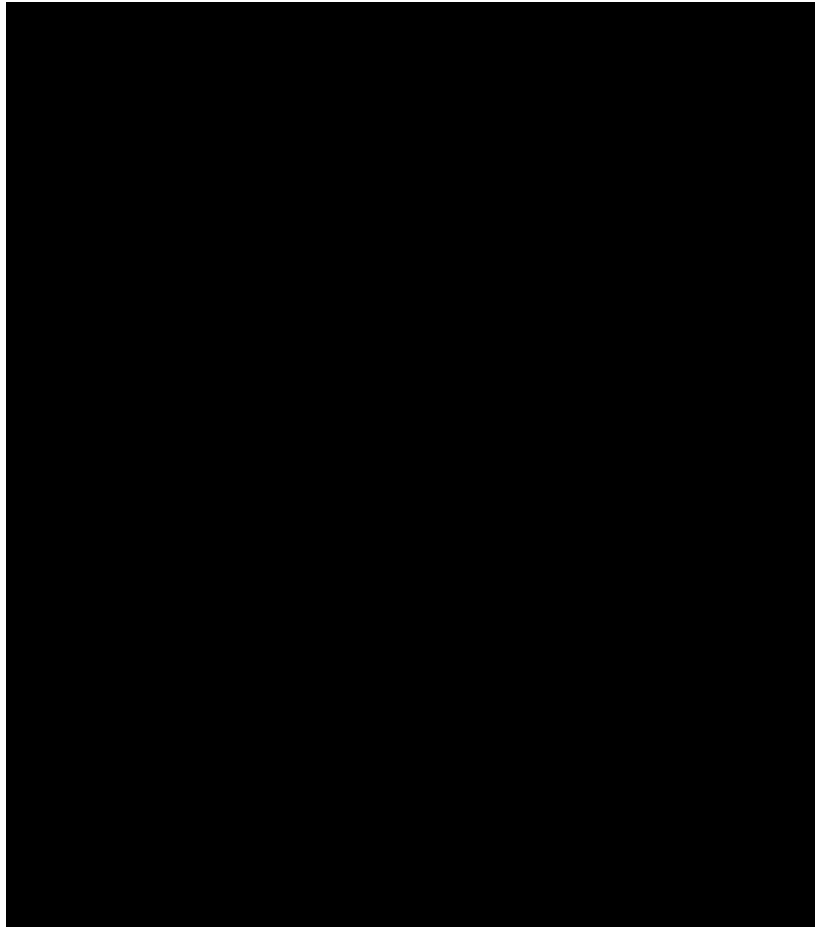
Continue to increase market share in the automotive related industry





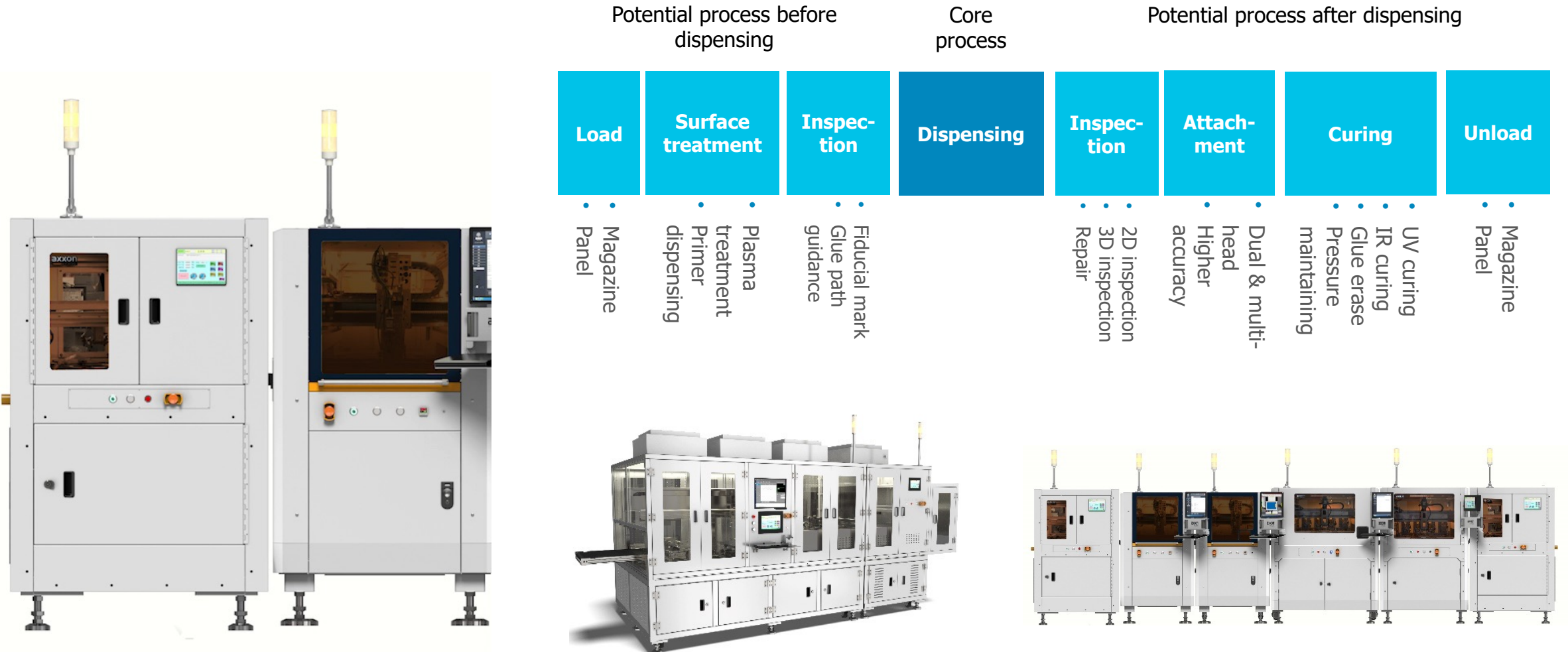
# Semiconductor industry

Launch robust products into several attractive segments



# Final assembly industry

Provide total automation solutions beyond dispensing

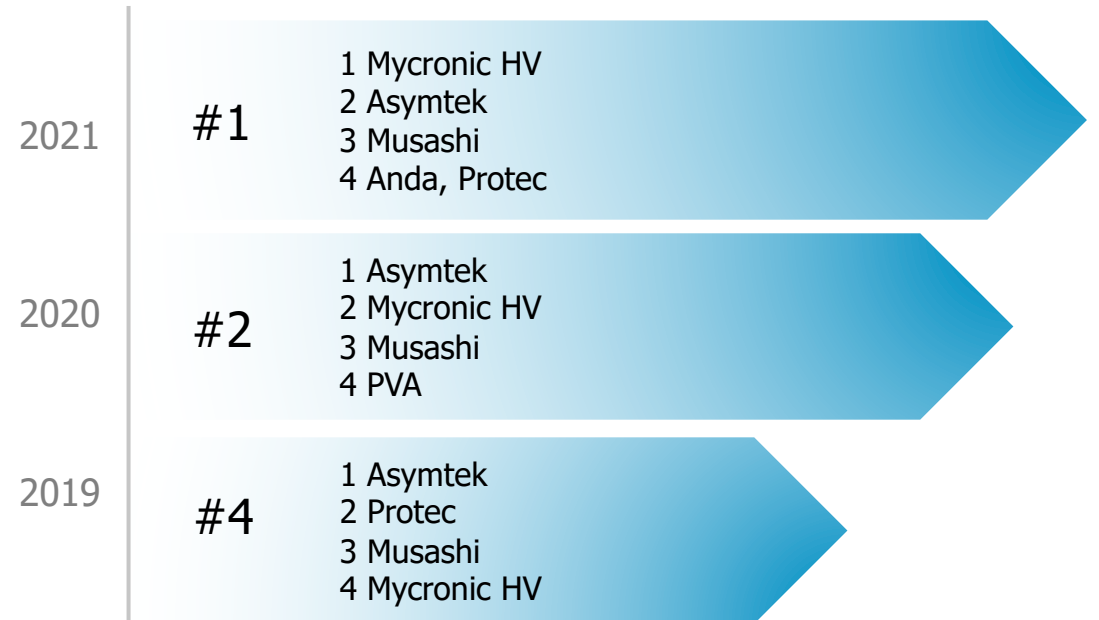
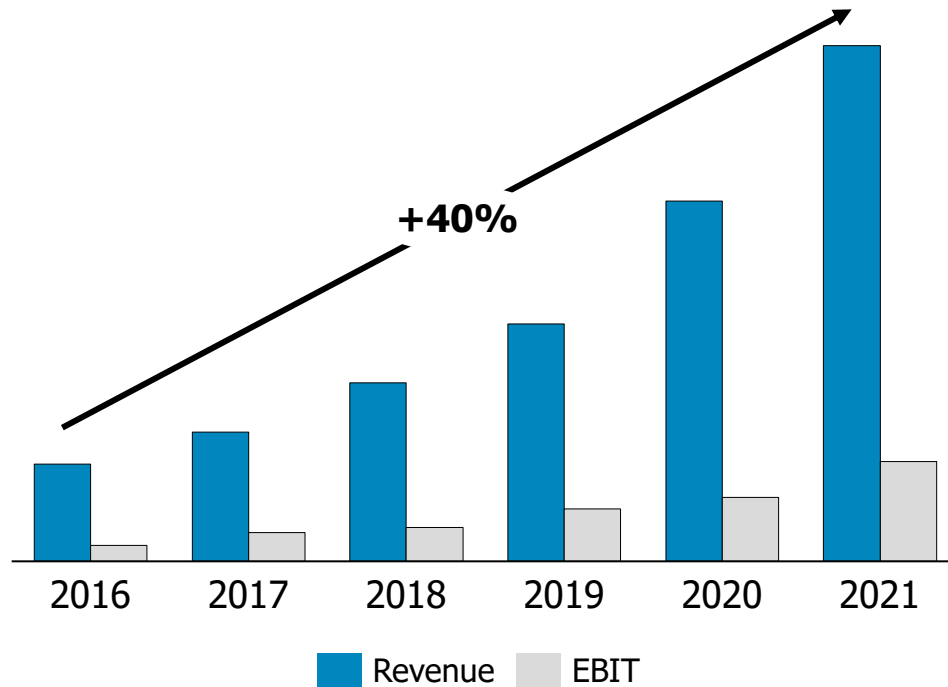




# High Volume revenue and market share expansion

Ensure dispensing market leader position

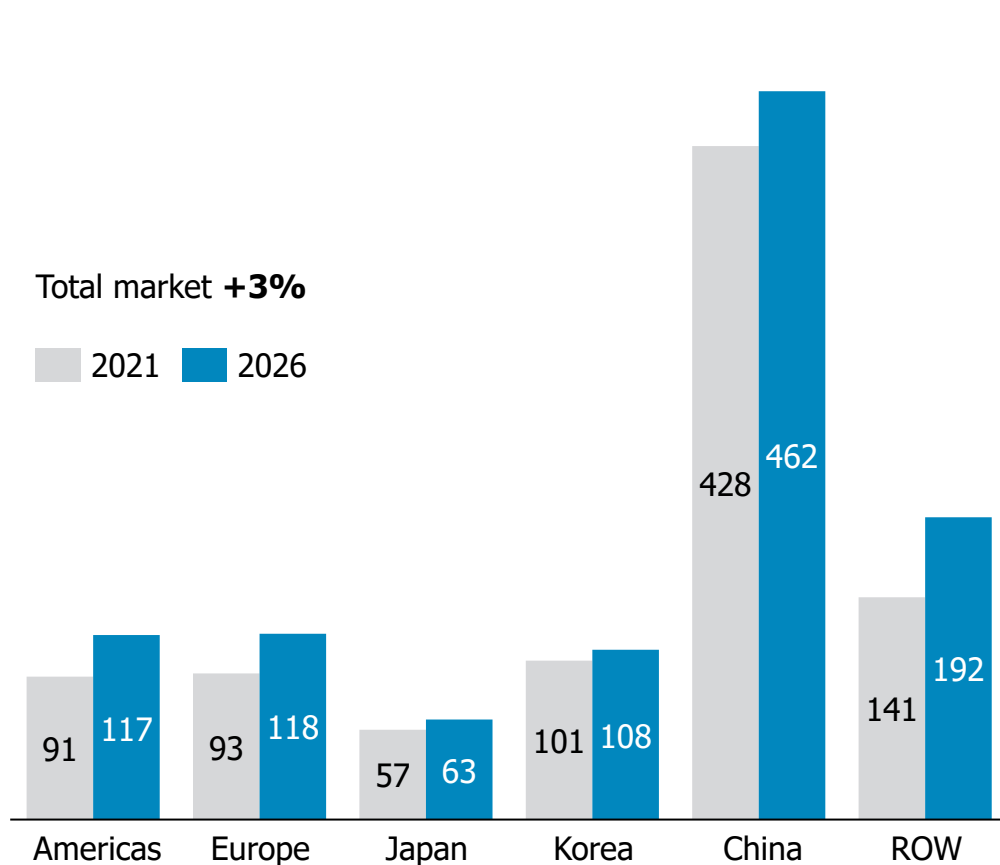
From 2016 to 2021, High Volume achieved >40% CAGR and aims for the next wave of profitable growth



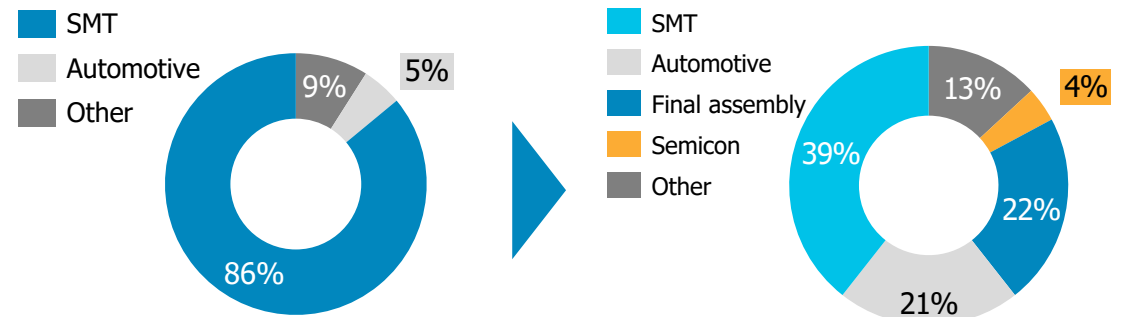
# Global dispensing market keeps growing

Targeted segment >80% total global electronics dispensing market

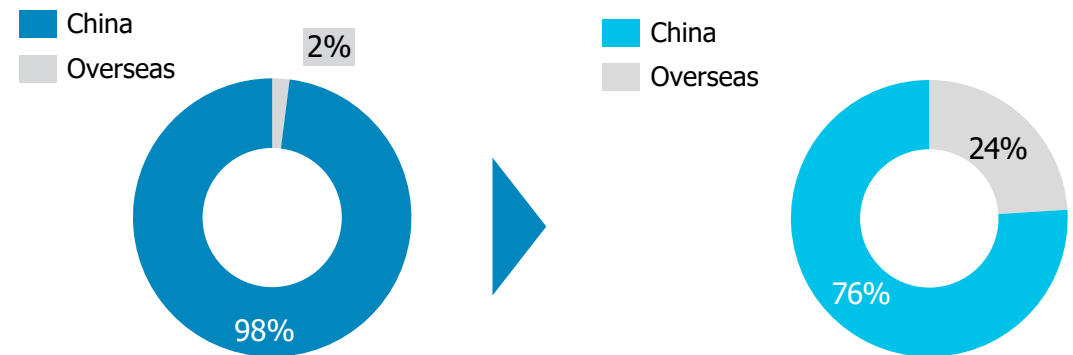
Electronics dispensing market growth (910 MUSD)



Industry distribution development 2016-2021



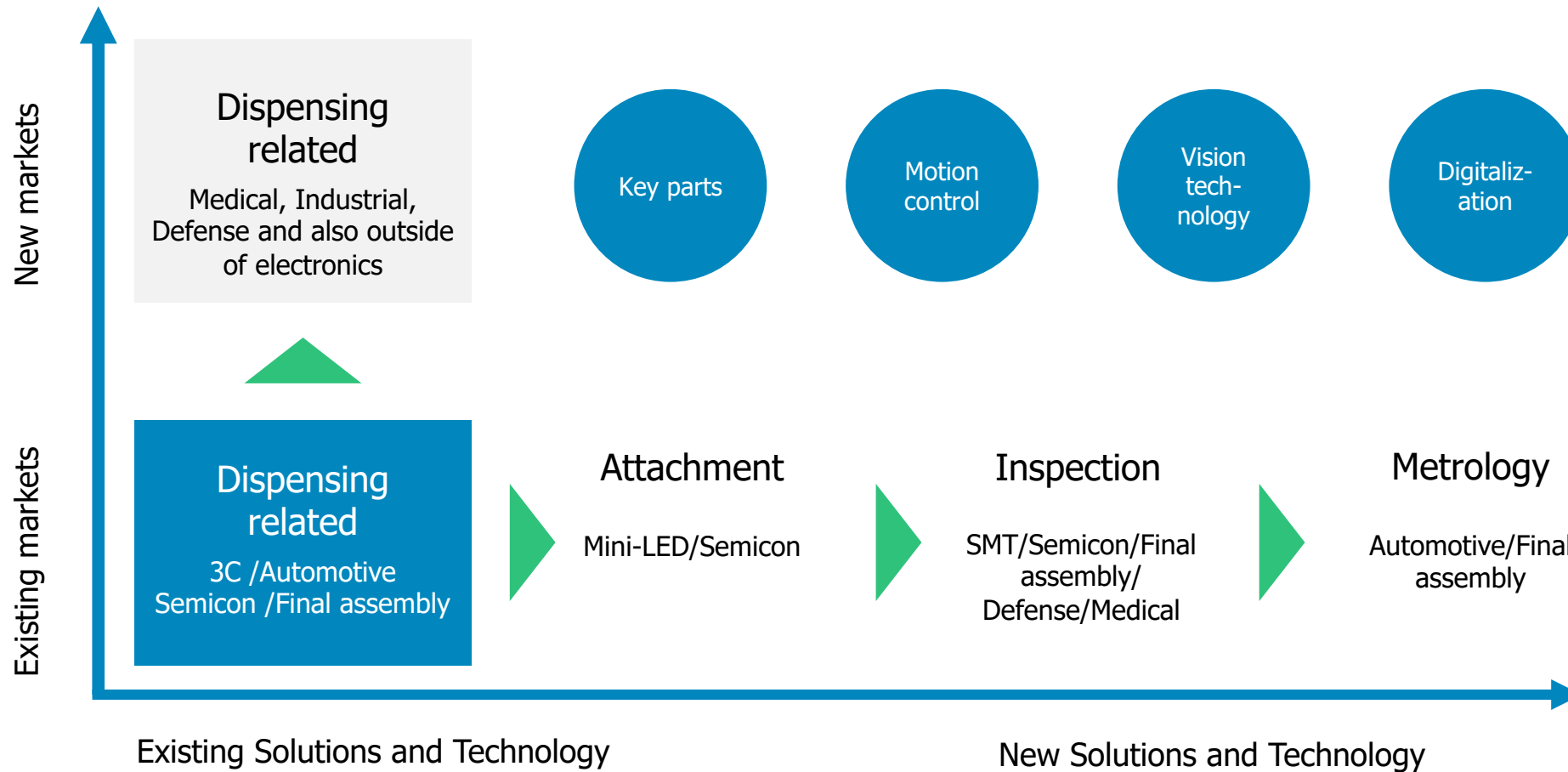
Region distribution development 2016-2021





# Next wave of profitable growth

Continuous R&D investment and M&A to ensure high margin & high growth in the future



With a growing share of overseas net sales, High volume encourages a diverse and inclusive recruitment strategy, especially regarding female career and leadership development.

# Division **High Volume**

- Dispensing – consolidate local leadership and expand overseas
- Semicon – launch robust products into several attractive segments
- Automotive – capitalize on the electrification trend
- Grow overseas markets
- Next wave of profitable growth



**Number one** high volume assembly solutions provider for electronics production with core in dispensing






# Division **Global Technologies**

---

Michael Chalsen, Sr VP Global Technologies

Jochen Kleinertz, Head of atg Luther & Maelzer



# PCB test – atg L&M

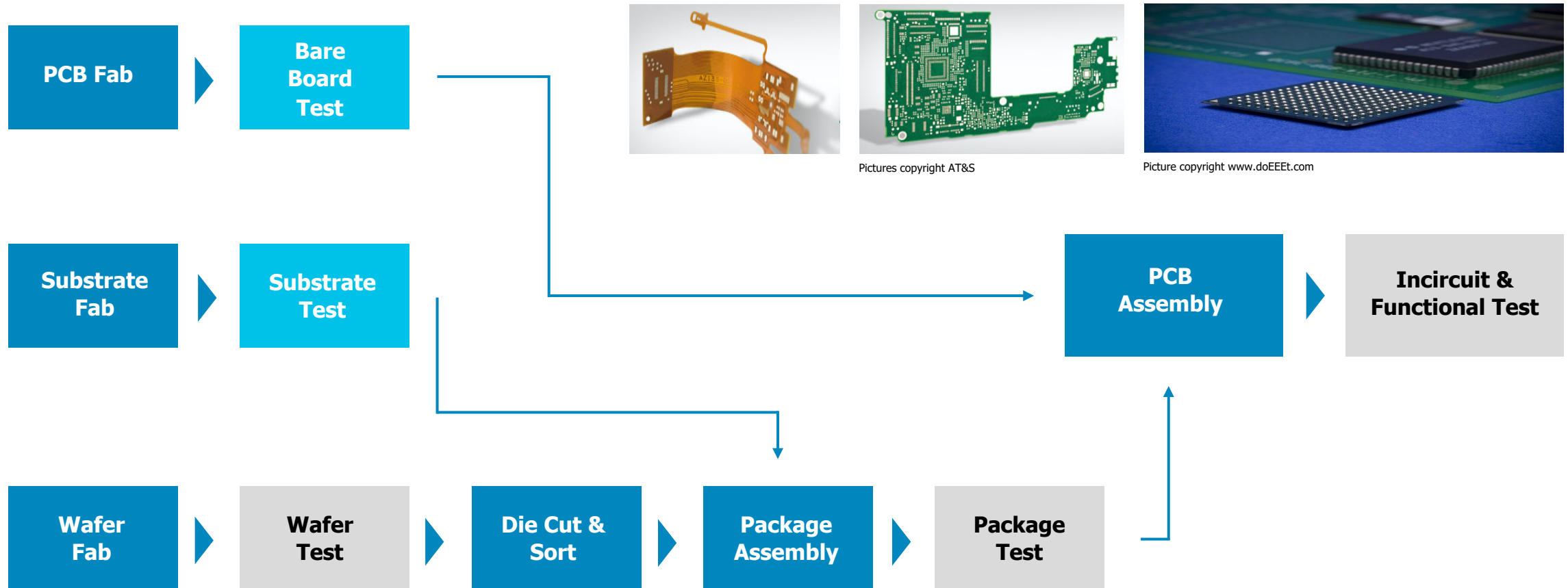
---

Jochen Kleinertz, Head of atg Luther & Maelzer



# Atg L&M's Place in the Value Chain

Systems for the electrical test of unpopulated PCBs and Substrates



# Providing our customers with world class test solutions



**Flying Probe systems  
for PCB test**



**Flying Probe systems  
for Substrate test**



**Fixture based systems for PCB  
test (high volume)**

**Covering a wide range of products and applications for all main industries**



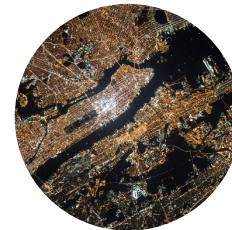
Consume Products



Defense and Aerospace



Automotive



Infrastructure



Industrial



Medical



# Atg L&M a global leading provider for Electrical Test

## Flying Probe Systems

### Key features

- Unique technology providing the highest throughput
- Possibility to test larger areas efficiently
- Up to 24 test heads (versus max 8 of our competitors)
- Fully automated and integrated systems
- Advanced test methods - a unique feature of atg's test systems
- Substrate tests on small structures

### Application

- Low cost per test, high flexibility and decreased time to market makes solution attractive for prototype, sample, and low volume test
- High throughput of new generation allows test of even larger volumes, replacing some fixture-based test
- 16+ test head systems especially for server-board production volumes





ASa

Made in Germany





# Atg L&M a global leading provider for Electrical Test

Fixture based Systems for PCB Test (high volume)

## Key features

- Flexibility to use either dedicated or universal fixtures, allowing choice of most cost-efficient solution
- Highly accurate micro alignment
- Step & repeat functionality, e.g. capable of stepping micro-LED PCBs
- High degree of parallelization maximizing throughput
- Kelvin-test capability

## Application

- Efficient testing of high volumes
- Flexibility and low fixture cost makes the system especially attractive to test houses and high mix customers
- Suitable for highly complex applications like micro-LED





LUTHER & MAELZER

Made in Germany



# Enabling our Customers' Success

## ATG L&M's Focus



### High Performance Test Systems & Software

- Superior throughput and precision enabled by proprietary Multi Rail technology



### Addressing Customers' Application Needs

- Supporting state of the art manufacturing environments: system automation, data integration, machine control
- Offering measurement technology and applications which address customer requirements efficiently
- Customizing high-end solutions



### Deep, Long-lasting Customer Relationships

- Average relationship length of top 20 customers is 22 years
- Decades of experience in the industry and thorough understanding of customer needs



### Global Footprint For World Class Service

- Highly responsive maintenance and repair organization: clear benefit to our customers
- Subsidiaries in the USA, Mainland China and Taiwan and an international network of partners



### Sustainability

- Delivering products and services in a long-term sustainable way, respecting our society, the environment and our employees

# Growing Market Opportunity in the PCB Testing Market

Increasing PCB Complexity and High Cost of Failure Driving Growth and Demand for PCB Test Equipment

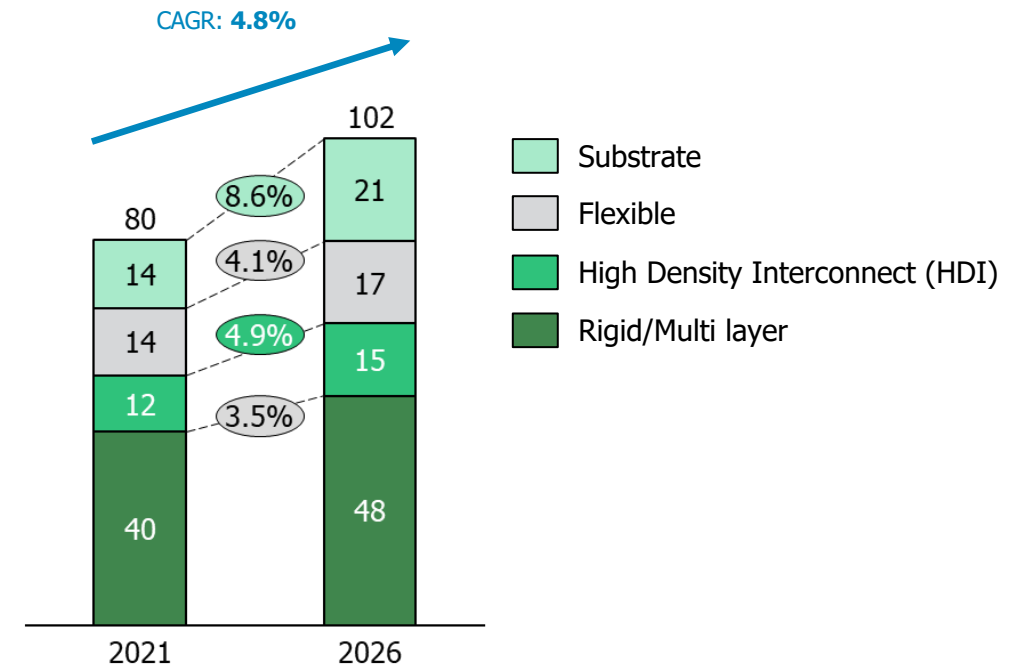
## Growth Drivers

- Growing PCB demand
- Increasing PCB and device complexity
- PCB innovations require higher-speed test systems and larger test area sizes
- Higher quality standards require more comprehensive test, consequences of PCB failure can be reputationally damaging, expensive, and potentially dangerous for the end user
- Current trends favor use of Flying Probe test system

## Key Players



## PCB Market Size



Source: Prismark, February 2022



# Die bonding - MRSI

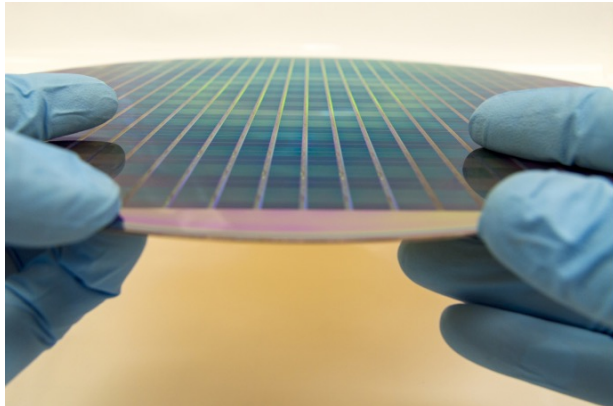
---

Michael Chalsen, Sr VP Global Technologies



# Technology Explained – What is a die bonder?

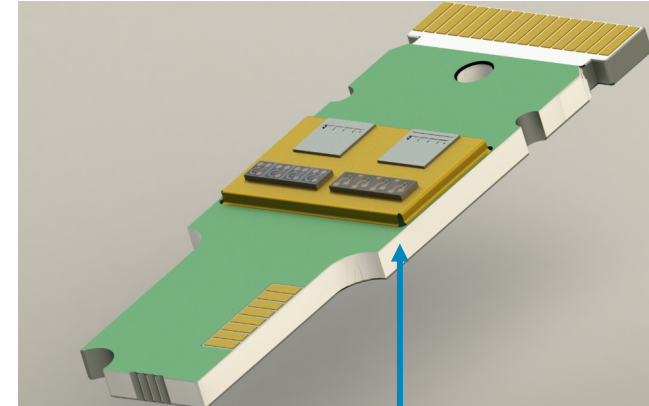
- MRSI designs and manufactures high precision die bonders
- The die bonder picks and places tiny dies or chips together and attaches onto a wafer/substrate/PCB to form an **intricate package** of parts connected electronically and/or optically (lens attach)
- Our customers use our die bonders to assemble **electronic and photonic packages**, to enable them to build their products.



Each square on the wafer is a tiny chip or die



Inside our machine where packages are assembled



Tiny chips are bonded to a package

# Data/Telecom

Enabling Bandwidth Improvement

## Market

Data/Telecom

5G Wireless



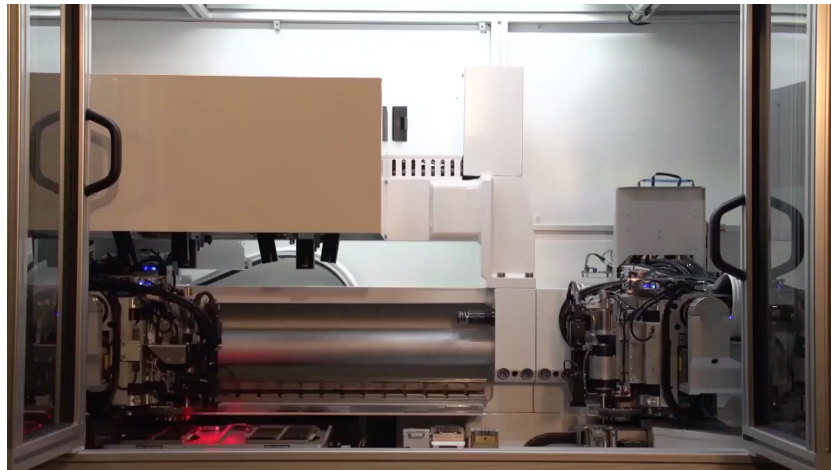
Datacenter



## MRSI Product

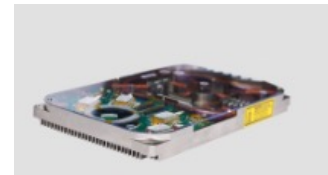
MRSI High Speed solutions for high volume manufacturing.

Example application: Attachment of laser onto submount.



## Customer Products

Optical components



## End User (Customer's Customer)

Datacenters



Wireless Players

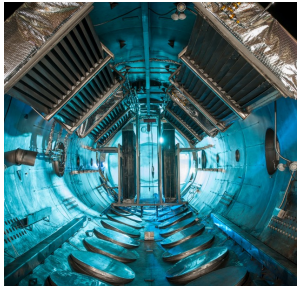


# Aerospace & Defense, Medical

Enabling reliability of key components in critical applications

## Market

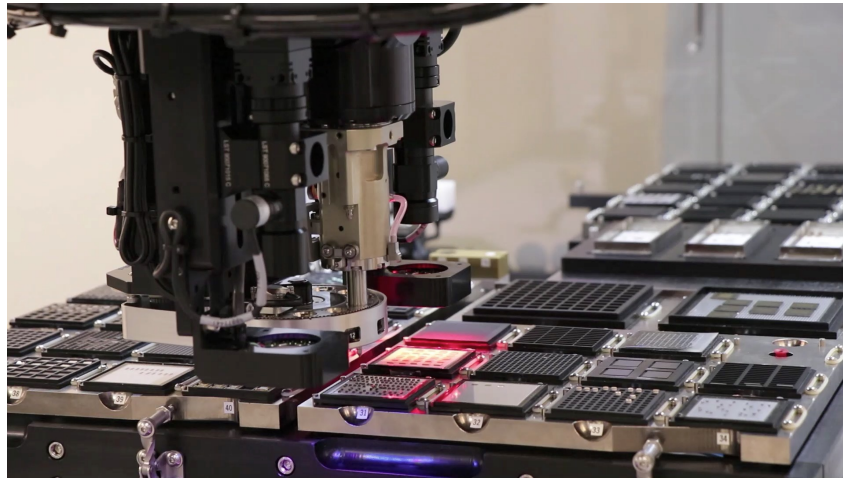
**Aerospace & Defense, Medical**



## MRSI Product

High Flexibility solutions.

Example application: Attachment of chips to substrate.



## Customer Products

**Satellites, Radars, Medical sensors**



## End User (Customer's Customer)

**US/worldwide governments**



**Hospitals, Care centers**





# Emerging Markets

Enabling new functionality in fast growing segments

## Market

Emerging markets

**Lidar/VR/AR  
Automotive**



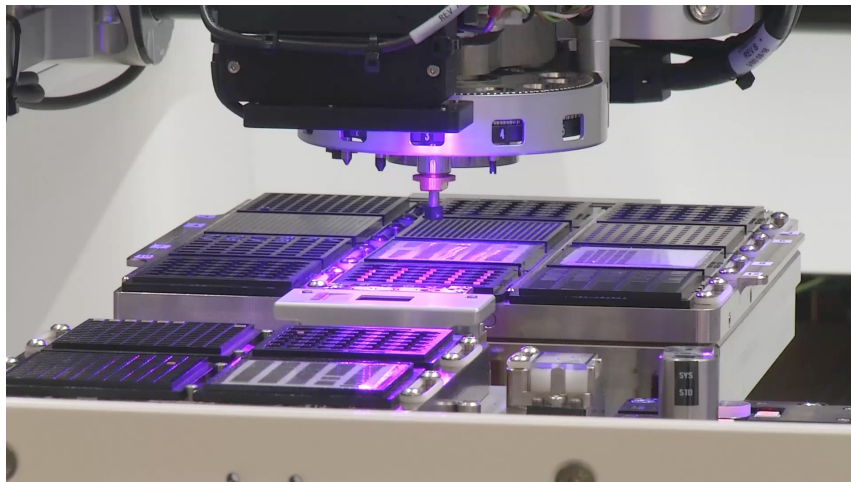
**Consumer**



## MRSI Product

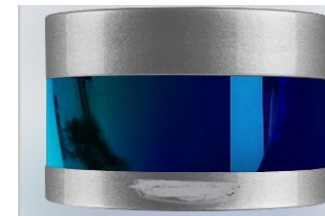
High Speed solutions for high volume manufacturing.

Example application: Attachment of laser to substrate.



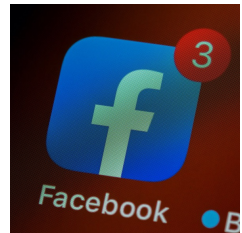
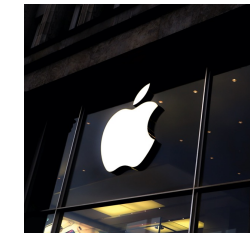
## Customer Products

**LiDAR, Smart Devices,  
VR & AR**



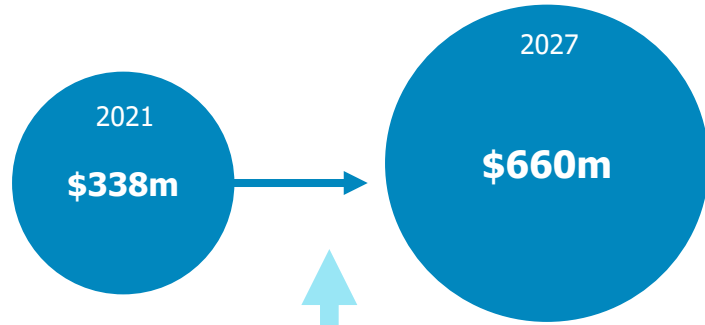
## End User (Customer's Customer)

**Automotive  
Groups, Consumer  
Groups**



# Market Size, Growth, Drivers, Competition

## 1. Die Bonding Market TAM



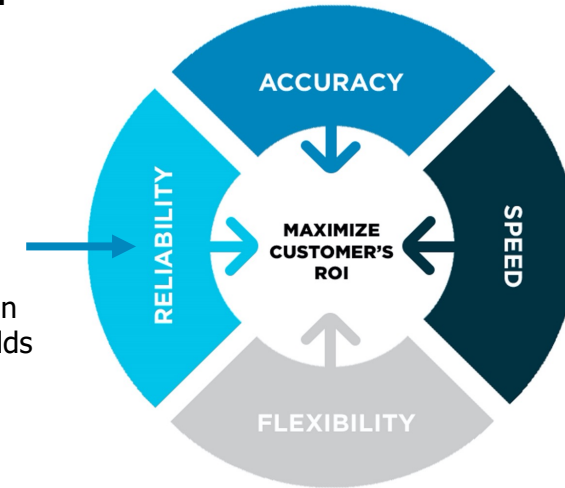
## 2. Driver

- Mega trends - data centers, 5G/6G, EV, AI, IoT, global supply chain shifting
- Post Covid-19 era supports the higher demand for networking bandwidth
- The continued need for miniaturization of products for all markets
- Increased complexity and higher precision for cost effective manufacturing
- Flexible machines for "Flex" volume manufacturing

## 3. Competition



Is the leading player in offering these value-adds for our customers



Besi



# Division **Global Technologies**

- Seize expansion opportunities and improve profitability in die bonding
- Continue to build on strengths in PCB test
- Expand the Global Technologies portfolio (M&A)
  - Niche, highly profitable, production equipment manufacturers
  - Driven by sustainable long-term trends



**Technology and market** leader in attractive electronics niches



A dark blue, semi-transparent background featuring a satellite in the upper right corner and a view of Earth's surface with clouds and landmasses. The text 'Q&A' is centered in a large, white, sans-serif font.

# Q&A