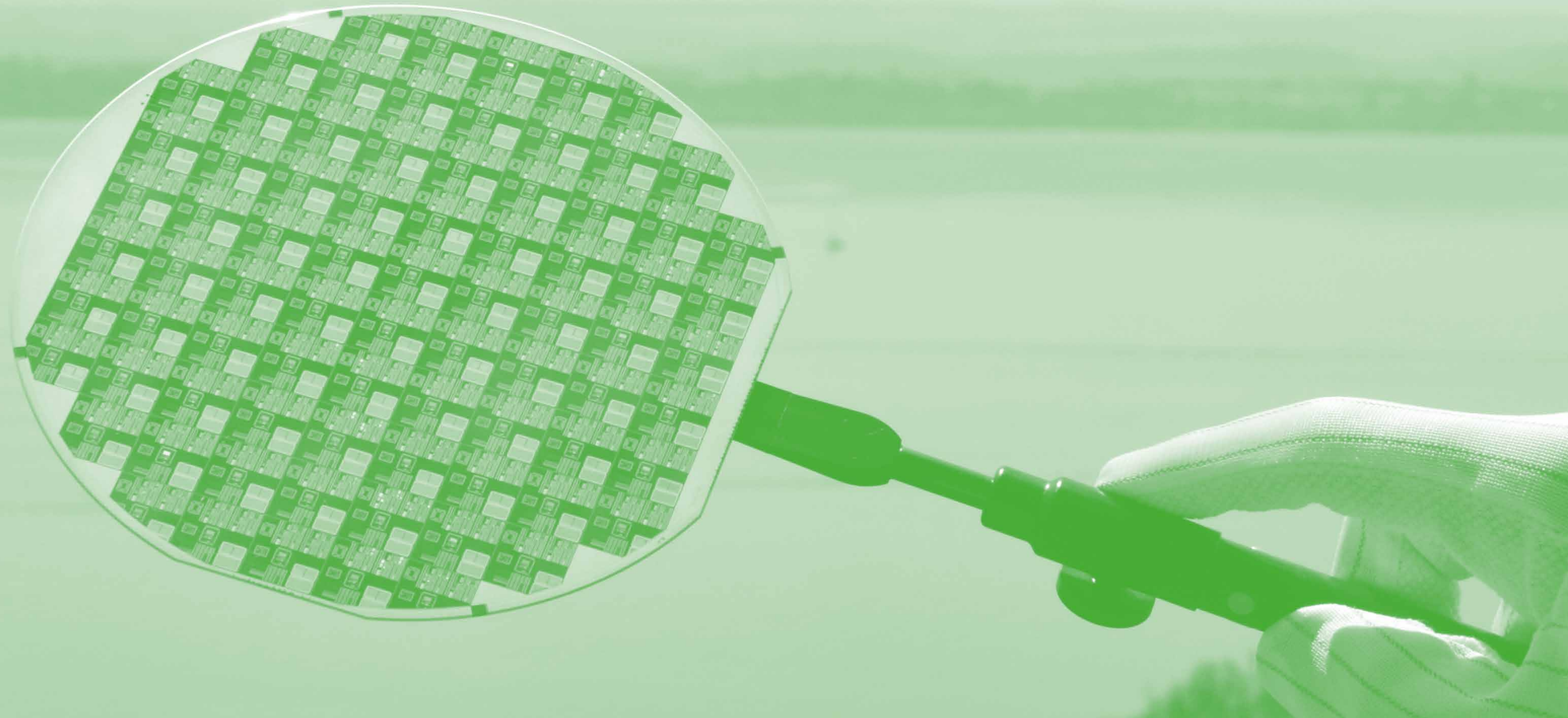




Turnkey solutions ?  
The good news, is you have options



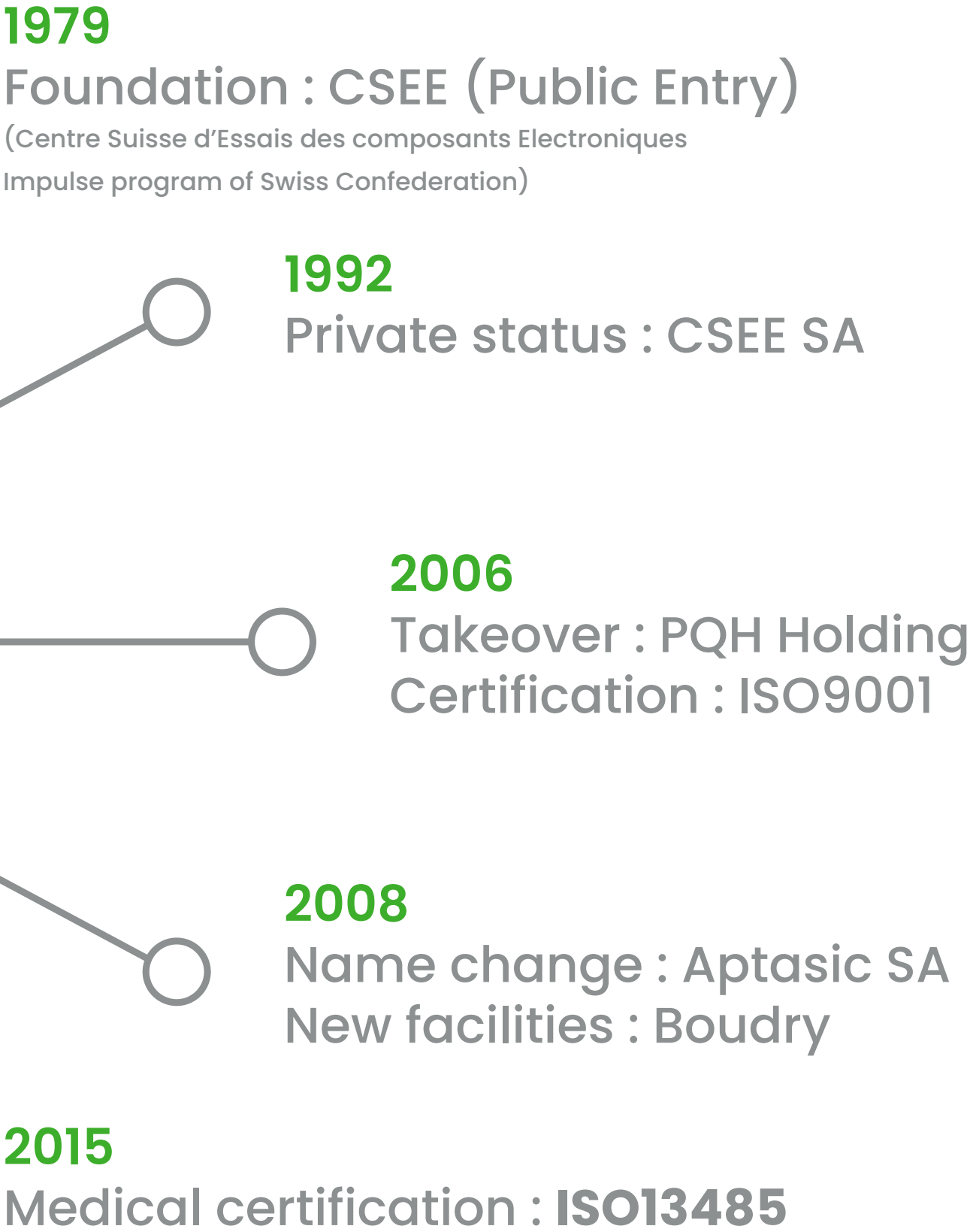
# PRESENTATION OUTLINE

1. **Company**  
Evolution, location, statements, activities
2. **Supply Chain**  
Introduction, description
3. **Equipment**  
Clean room and modern equipment
4. **References and sucess stories**



COMPANY

# EVOLUTION



COMPANY

# LOCATION

Boudry (NE)  
Switzerland

## Major features

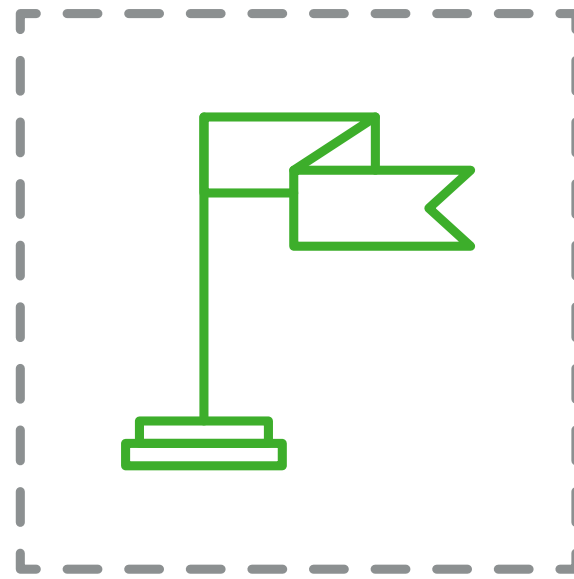
Building surface 1'400m<sup>2</sup>

Clean room:

- 400m<sup>2</sup>
- Class 10K (ISO8)

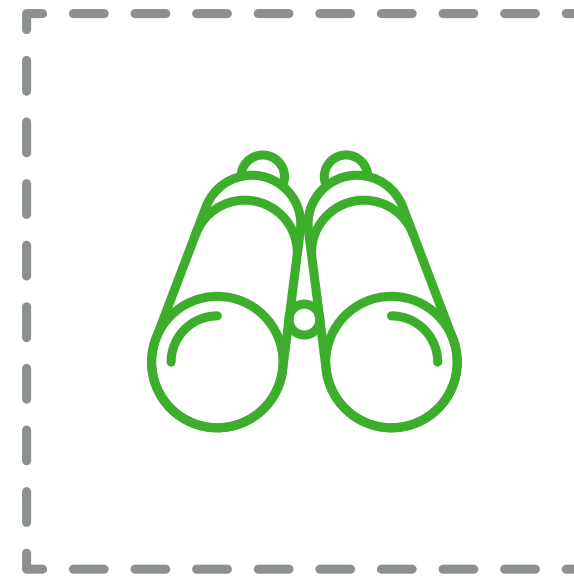


# STATEMENTS



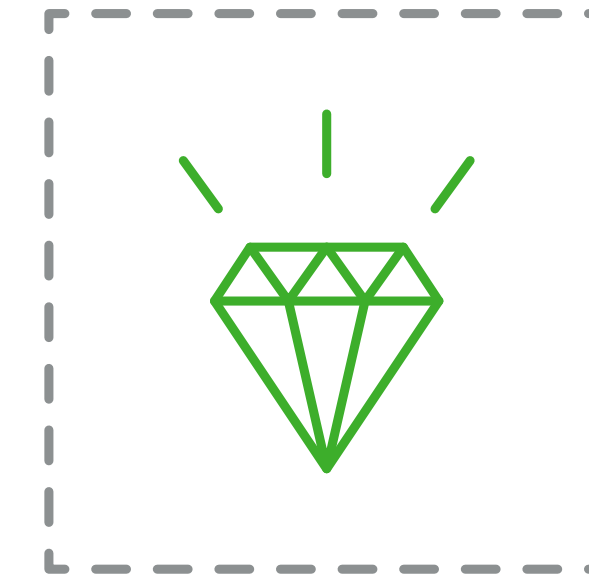
## MISSION

Offer our customers, as main contractor, **easy access** to state-of-the-art foundries, assembly houses, production processes, technologies and consulting in the **semiconductor industry**



## VISION

Enable our customers **first time right** production ramp-up, supporting smooth supply chain integration (from design to good packaged devices ready for use)

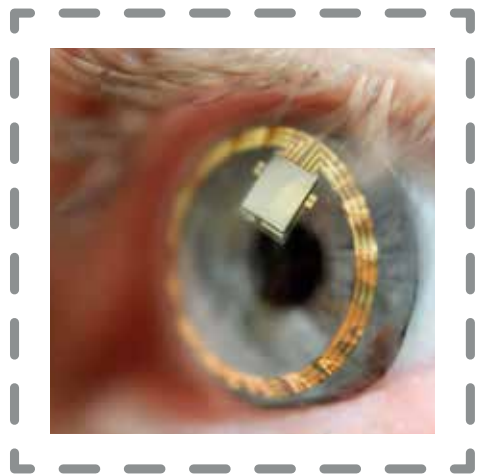


## VALUES

Because we strongly believe **we can smooth the ASIC's industrialization** process

COMPANY

# ACTIVITIES



MEDICAL

Implantable, diagnostic  
and treatment devices



GREEN-TECH

Photovoltaic panels



AEROSPACE & MILITARY

Sensors and converters



INDUSTRIAL

Sensors, actuators, security,  
encryption



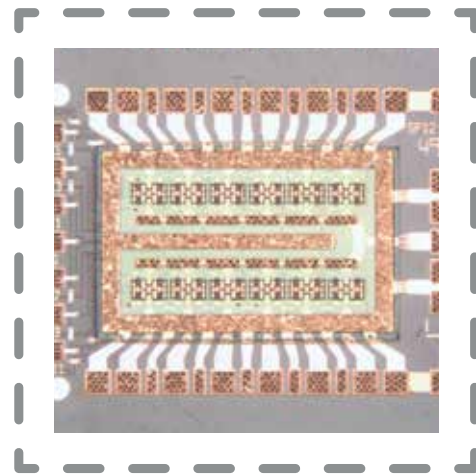
DIGITAL

RF-ID, optoelectronic,  
digital



IMAGING

X-Ray sensors, imagers



MEMS

Membrane sensors,  
switches



COMPANY

# COMPETENCIES

## Project management

- Comprehensive test solutions

## SW development

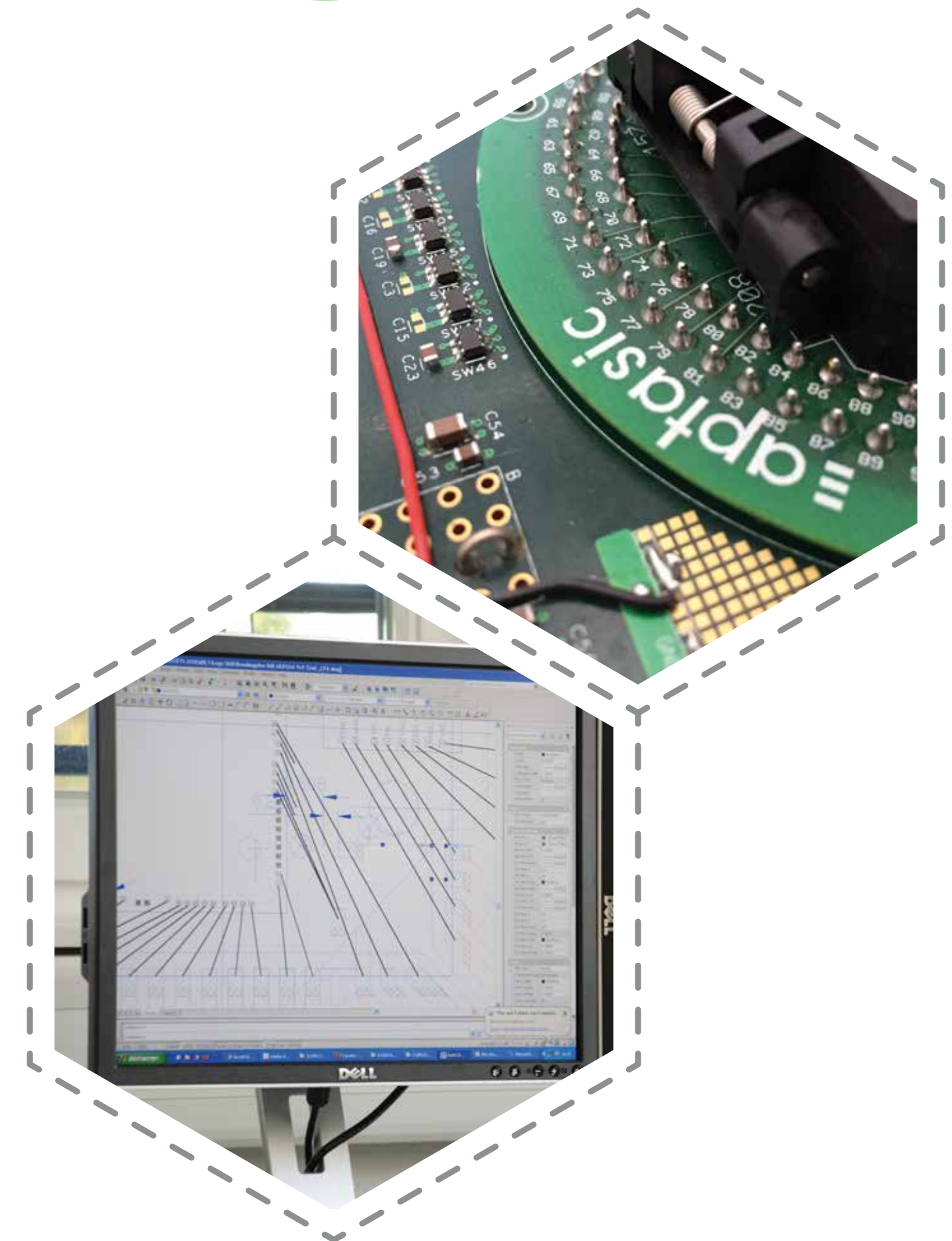
- Test program coding

## HW development

- Load-Board
- Probe-Cards, PCB-Adapters

## Screening flows and qualifications

- JEDEC
- MIL 883



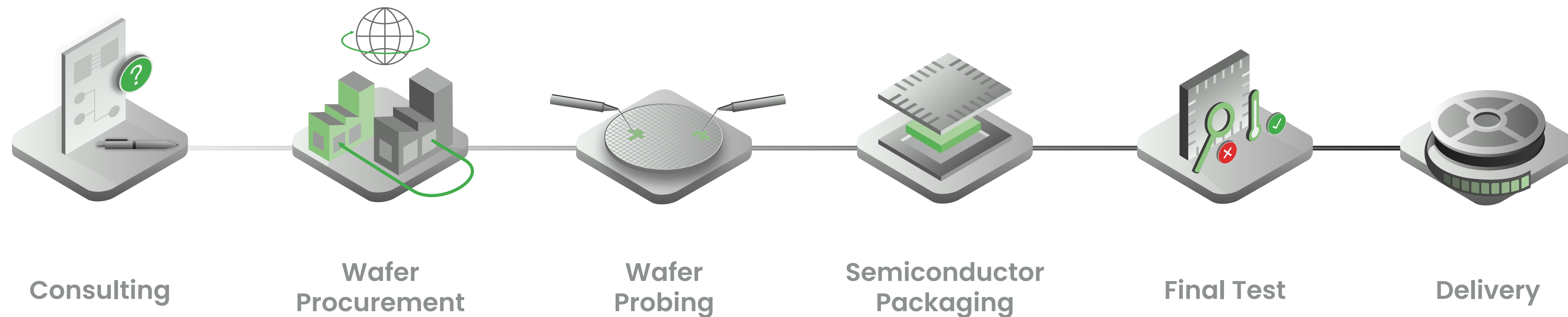
# SUPPLY CHAIN INTRODUCTION

Turnkey solutions to efficiently handle the ASIC supply chain :

- 100+ projects over the last 5 years
- Test programs development :
  - Analog/mixed signal (AMS), digital scan test, memory BIST, radio frequency (RF)
  - Experienced/knowledgeable engineers providing best services in ASIC test

Multi-site wafer probing at cold/room/hot ( $-40^{\circ}\text{C}$  /  $150^{\circ}\text{C}$ )

Parallel package test at cold/room/hot ( $-40^{\circ}\text{C}$  /  $150^{\circ}\text{C}$ )





COMPANY

# BUSINESS MODEL

## FLEXIBLE BUSINESS MODEL ACCORDING TO YOUR NEEDS

### Turnkey

Full ASIC Supply Chain

→ From Consulting to Delivery

### Contractor

ASIC Supply Chain

→ From Wafer Procurement  
to Delivery

### On Demand

Based on your specific needs

→ From Consulting to Delivery,  
including Screening &  
Qualification services

# CONSULTING



## WE CAN ADVISE FOR BETTER RESULTS

### Needs

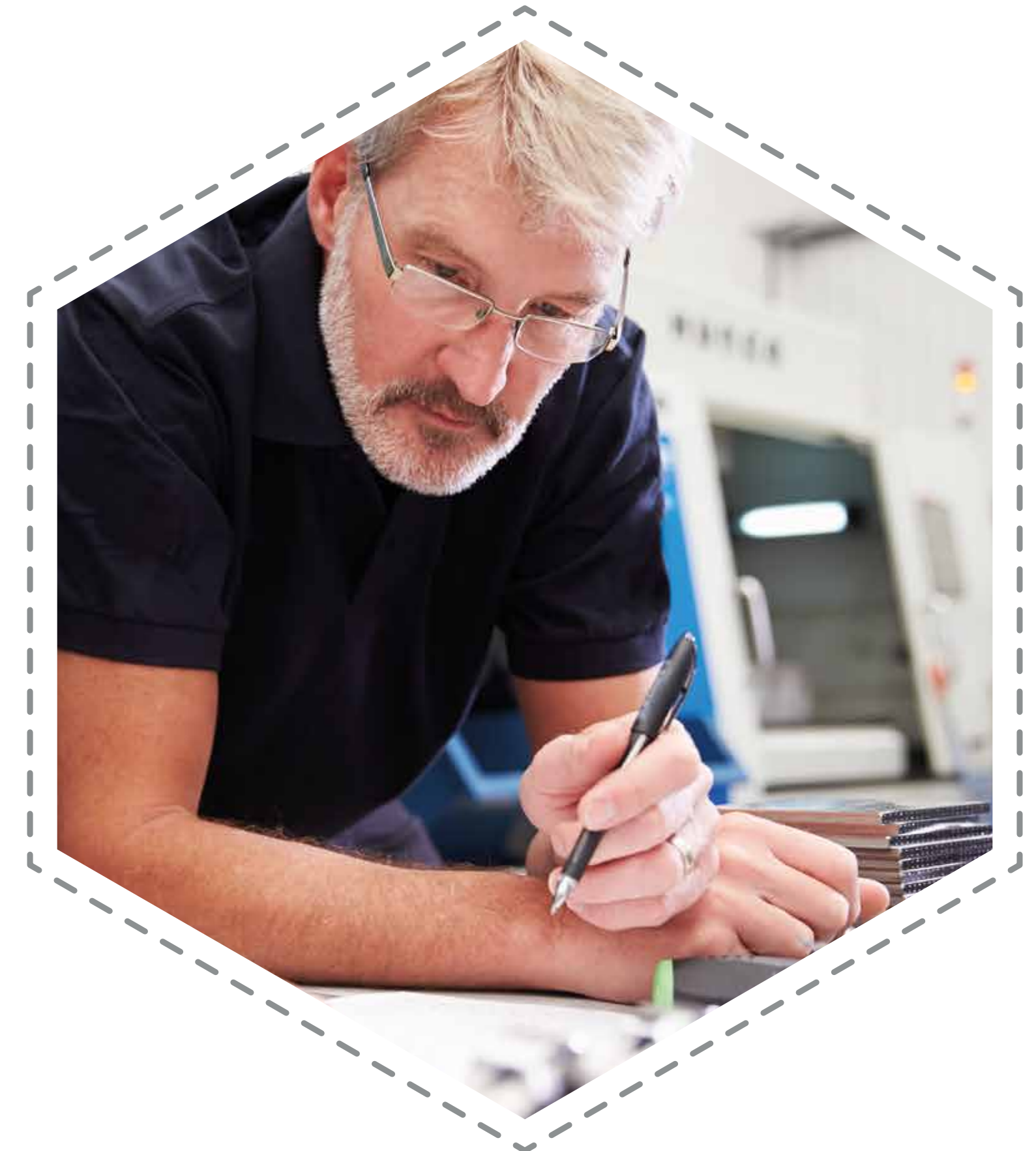
- ICs that are easy to test
- Increase accessibility / observability
- Ensure predictable ICs response

### Targets

- Reduce test cost of complex ICs
- Reduce test development time
- Facilitate testing at system level
- Improve product quality
- Shorten time to market

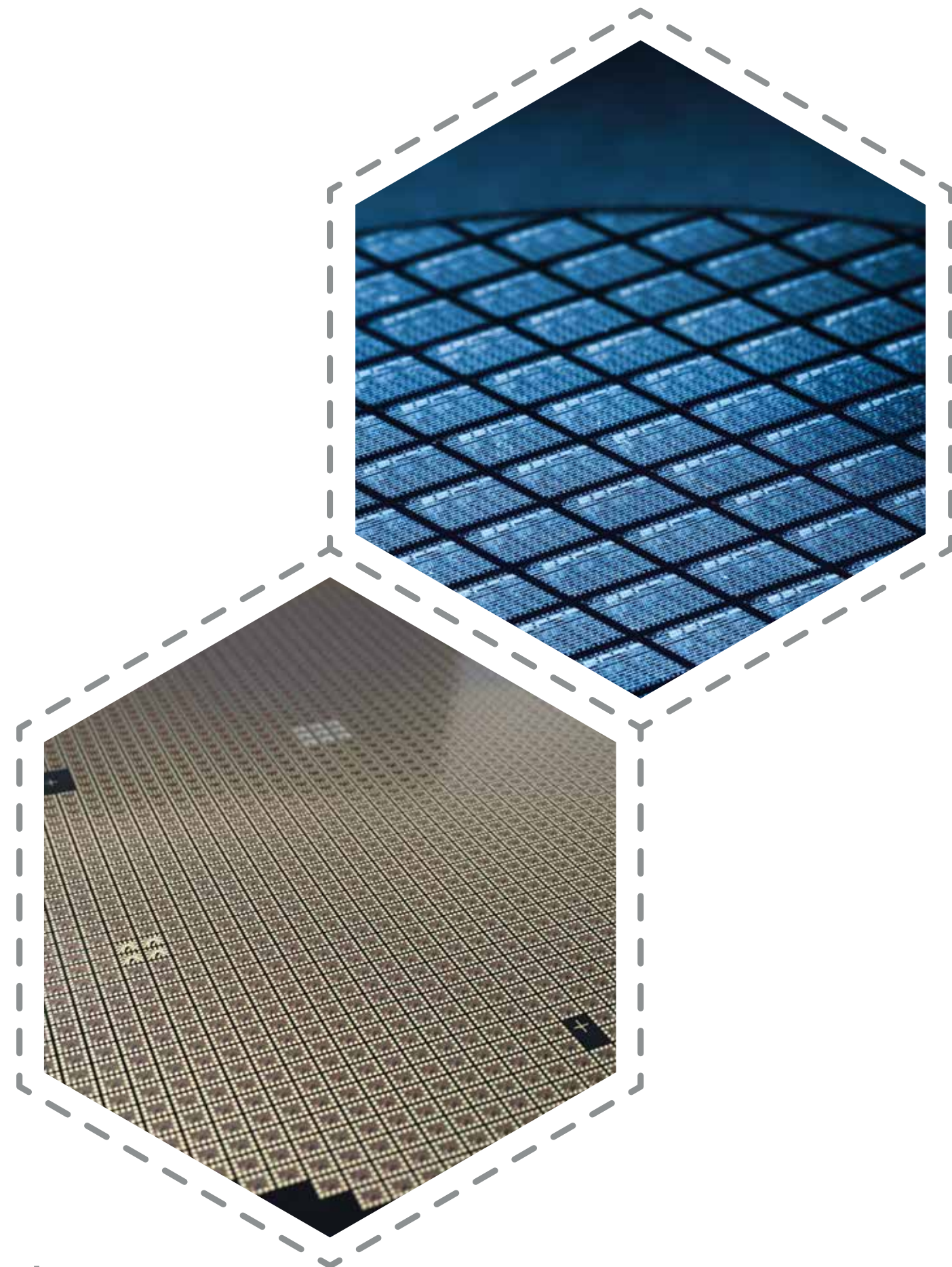
### Methods

- Design for Testability
- Design for Assembly
- Design for Manufacturability





# WAFER PROCUREMENT



## DIRECT SOURCING FROM FOUNDRIES

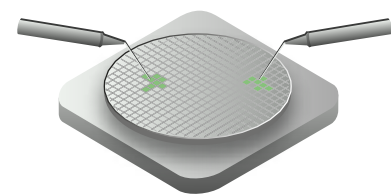
### Mature network of suppliers

Aptasic has established privileged contacts with the most important foundries to supply wafers from 1 um node to sub-micron technologies.

Our back-end network of OSAT support us for advanced packaging from low volume to mass production.



# WAFER PROBING



PROVIDING ELECTRICAL TEST  
FROM COLD TO HOT

## Multi-site wafer probing

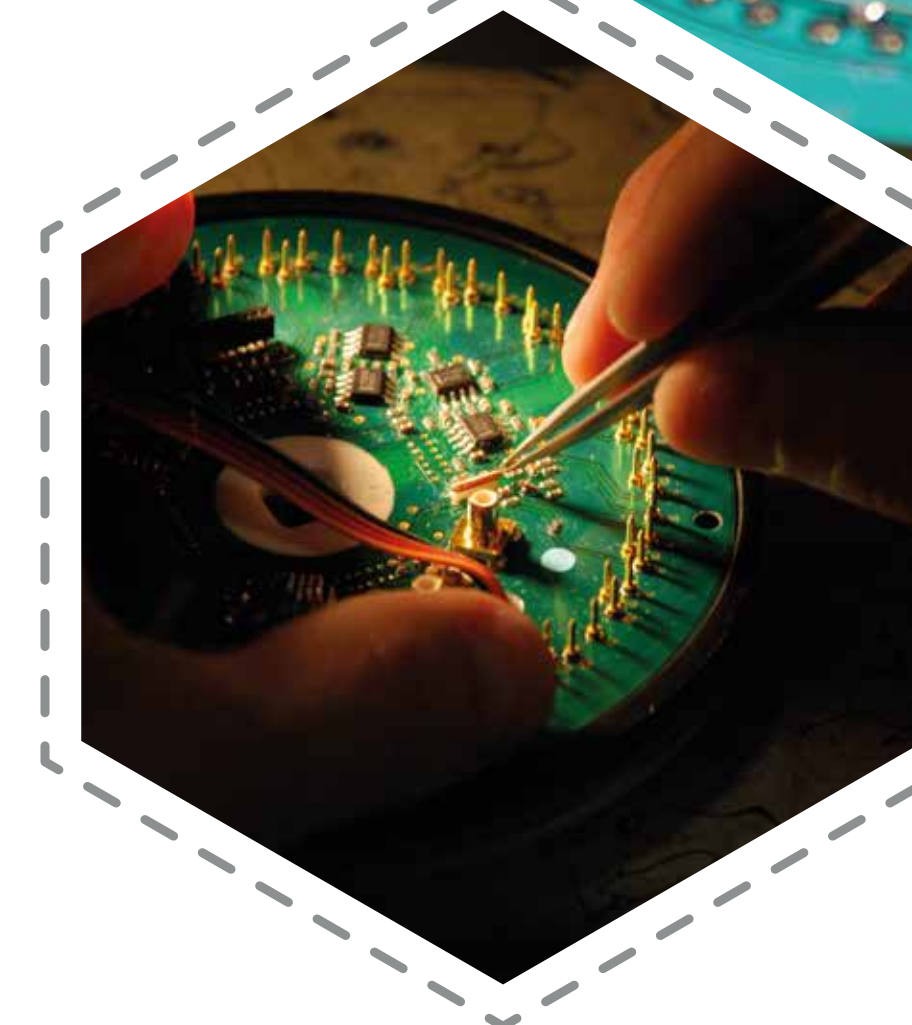
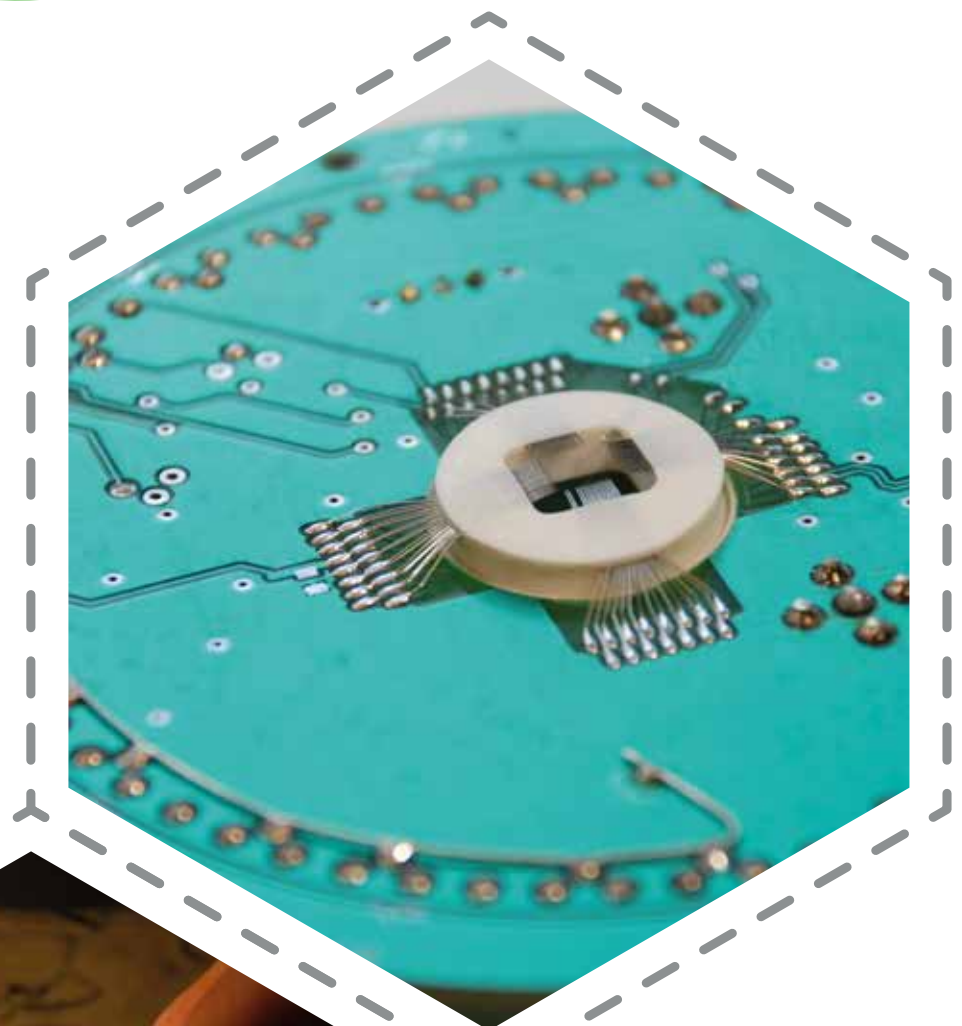
- 4" to 12" wafer diameter
- Cantilever and vertical probing

## Test can be performed at

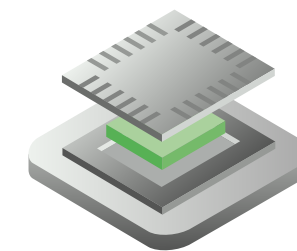
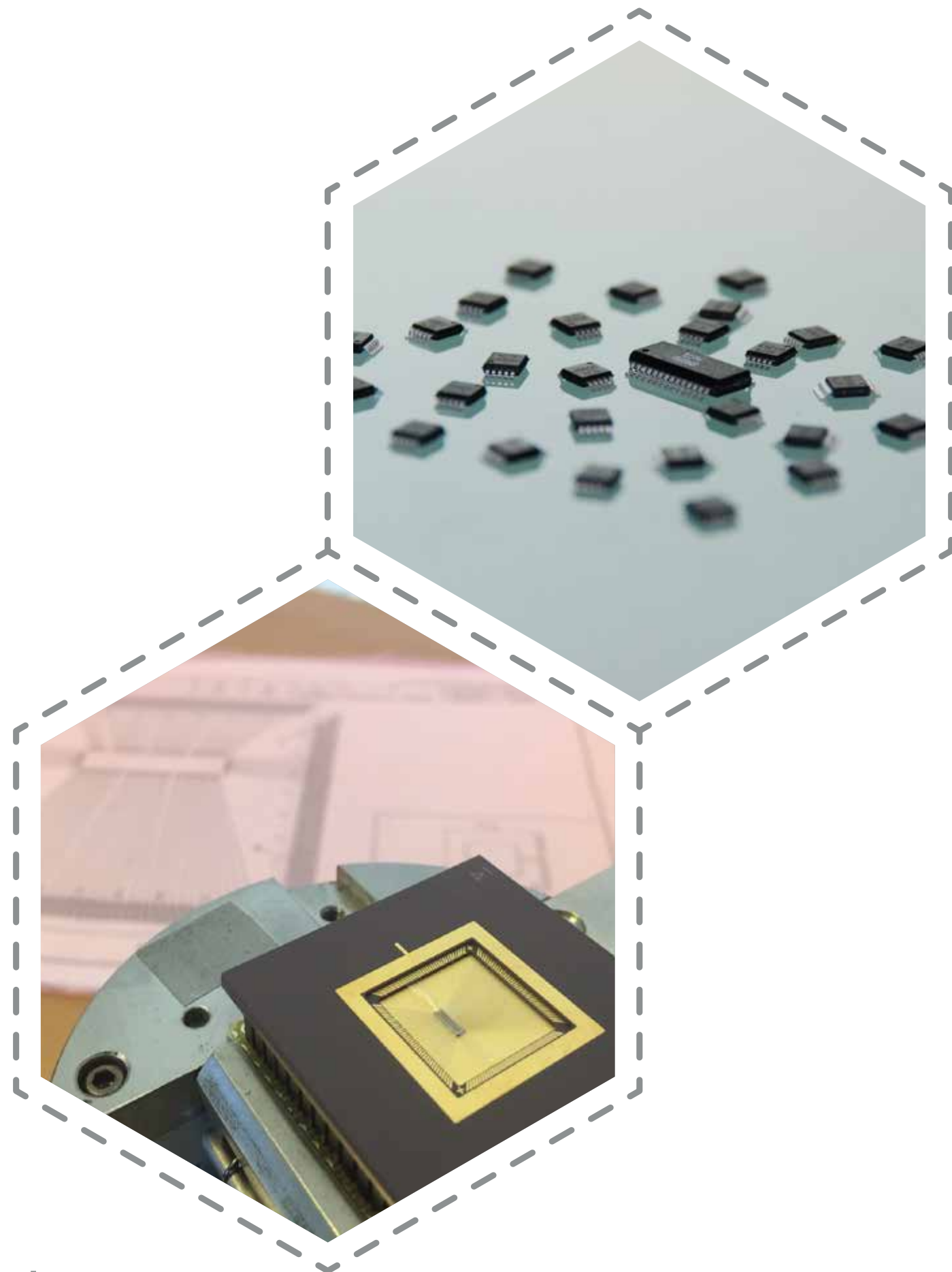
- Cold / Ambient / Hot
- Ranging from -40°C to 200°C

## Dedicated hardware implementation

- DUT probe-cards
- Load-boards standards and custom



# SEMICONDUCTOR PACKAGING



## PROVIDING FIRST CLASS PACKAGING AND HOUSING

### Packages for prototyping

- Open package families (ProtoPack™ technology)

### Packages for low volume to mass production

- Laminate substrate packages
- Discrete package families
- Ceramic packages
- Standard package families
- Specific packages
- Multi die packages

### Specific custom package development

- Wafer Level Chip Scale (WLCS)



# FINAL TEST



## FINAL TEST TO ENSURE THE ASIC QUALITY

Aptasic performs the final test on packages offering a temperature range **from -40°C to 150 °C**.

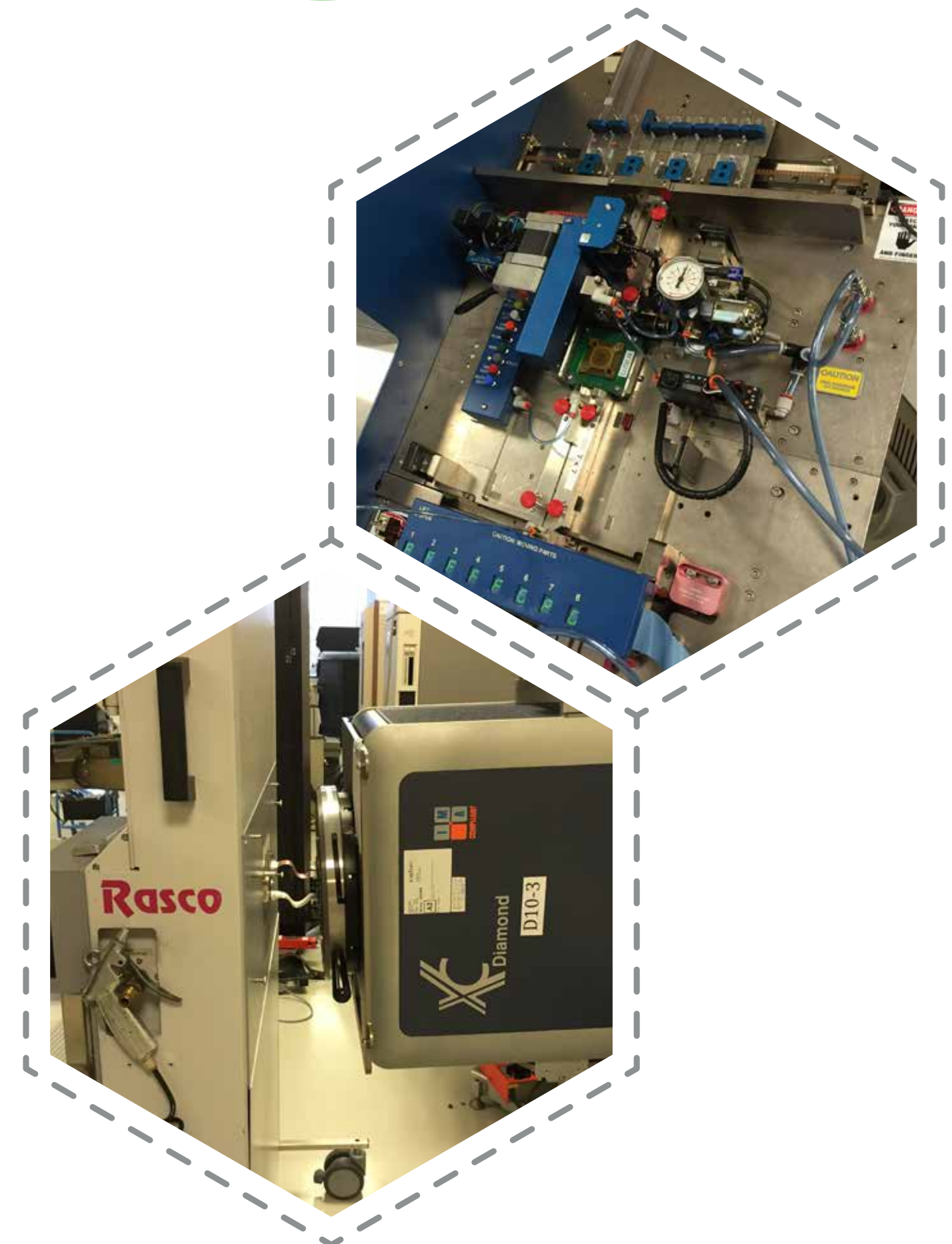
Our handlers are equipped for parallel test up to 4 sites and multiple binning options.

### Dedicated hardware implementation

- DUT handler-cards
- Load-boards

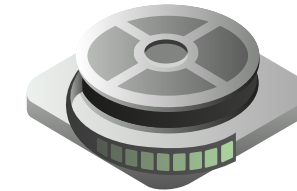
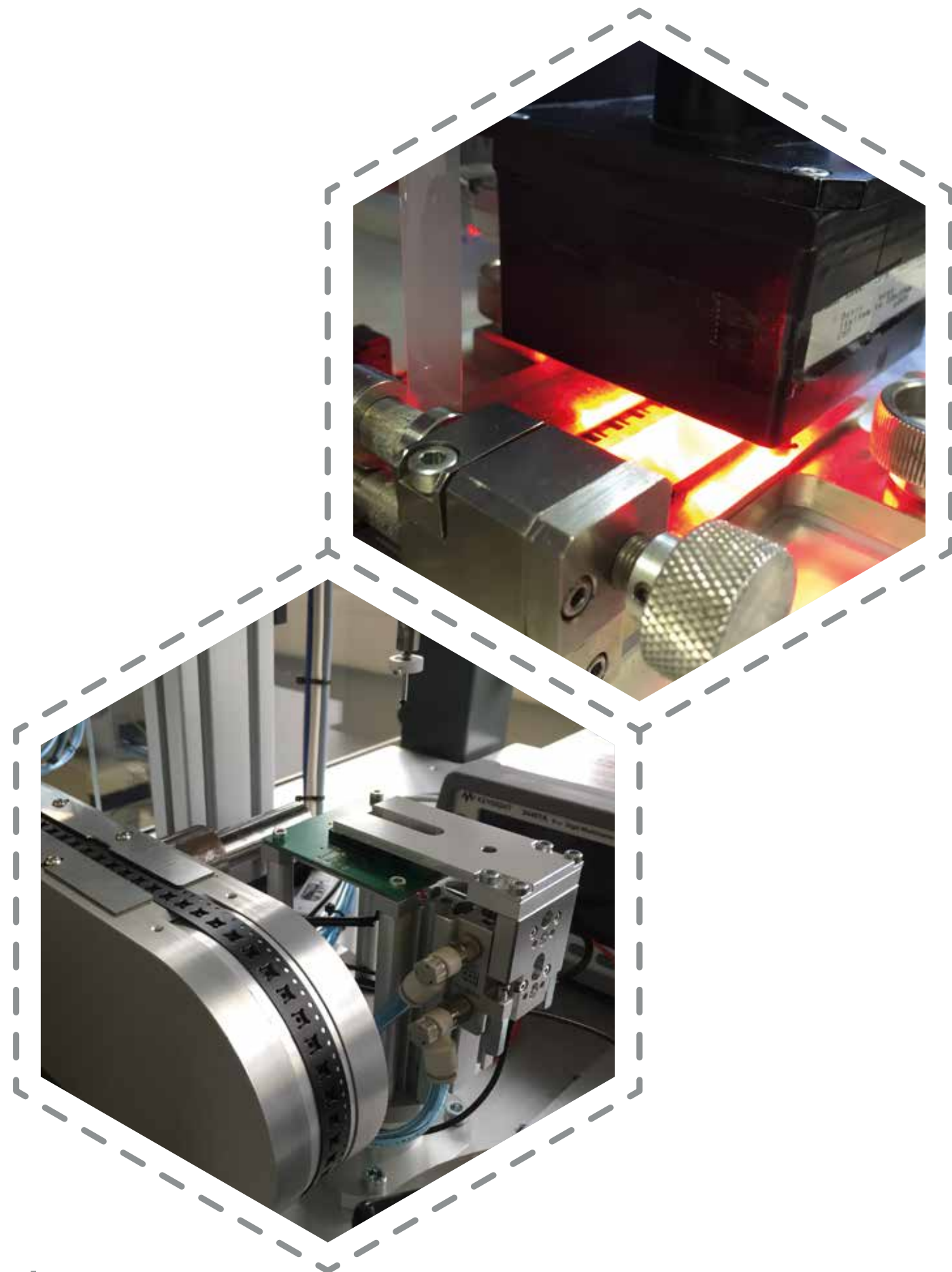
### Qualification & Screening

- JEDEC and MIL883 standards
- In-house equipment
- Screening portfolio





# DELIVERY



## MOST COMMON WAY OF DELIVERING GOOD ICS

### Tape & Reel

- Automated in-line
- Semi-automated
- Manual

Dedicated or standard tapes are available to precisely fit your requirements.

### Pick & Place

- Fully-automated
- Handling multiple combinations of component's transfers

Automatic Optical Inspection secures the orientation and placement of each component.

## EQUIPMENT

# CLEAN ROOM

### Clean Room

Surface 400m<sup>2</sup>

Class ISO8 – 10'000

Program to modernize infrastructure over last 3 years to achieve high efficiency and increase capacity and redundancy

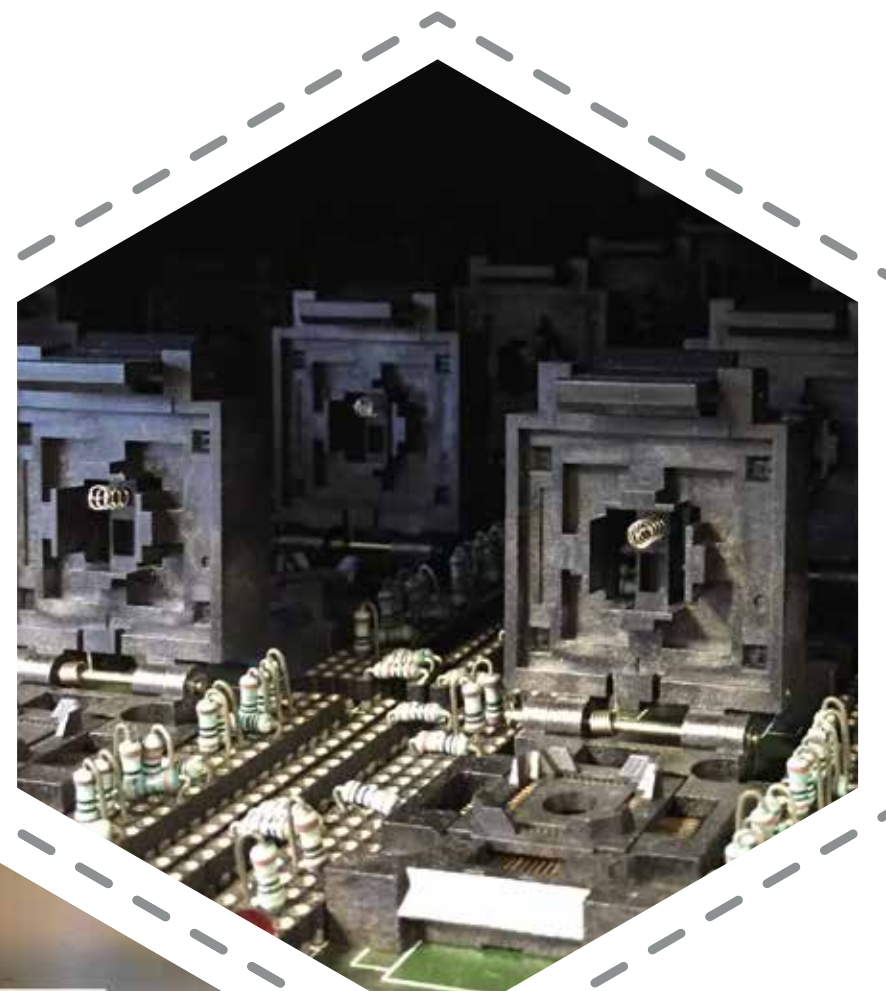
### New purchases

- 1x Thermo-stream
- 4x LTX-Credence D10 testers
- 3x EG4090u 8" wafer probers
- 1x RASCO parallel test handler
- 1x UF-3000ex 12" wafer prober
- 1x AATEC pick and place with vibrant bowl



EQUIPMENT

# QUALIFICATION



## JEDEC and MIL883 standards

- 30 years experience (plastic & ceramic flows)

## In-house equipment

- Climatic-test / pressure / temperature chambers
- Burn-in / triple-chamber ovens

## Screening portfolio

- BI, LT, TC, TH, HAST, PCT, SPP
- ESD, Latch-up



