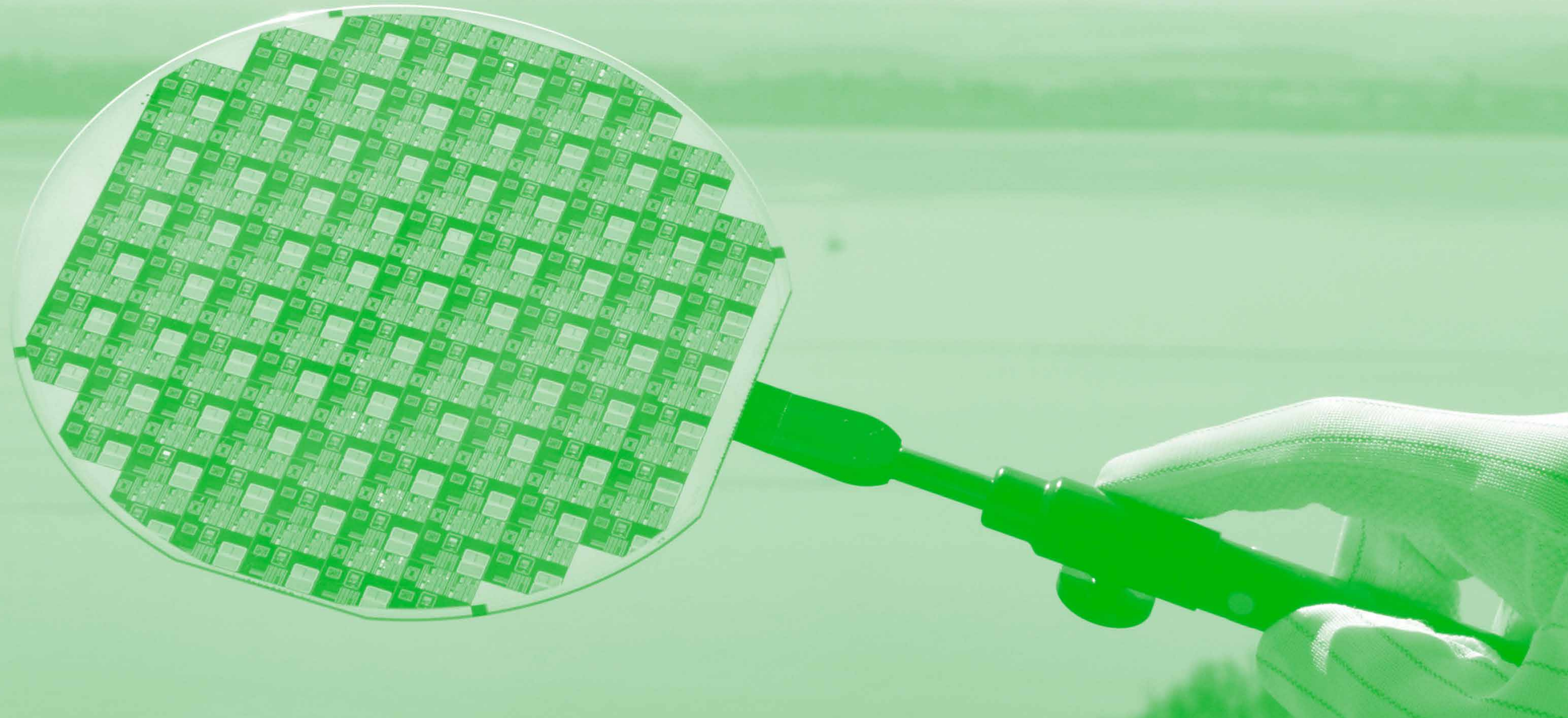




Turnkey solutions ?  
The good news, is you have options





# PRESENTATION OUTLINE

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

# COMPANY EVOLUTION

**1979**

Foundation: CSEE (Public Entry)

(Centre Suisse d'Essais des composants Electroniques  
Impulse program of Swiss Confederation)

**1992**

Private status: CSEE SA

**2006**

Takeover: PQH Holding  
Certification: ISO9001

**2008**

Name change: Aptasic SA  
New facilities: Boudry

**2015**

Medical certification: **ISO13485**

COMPANY

# LOCATION

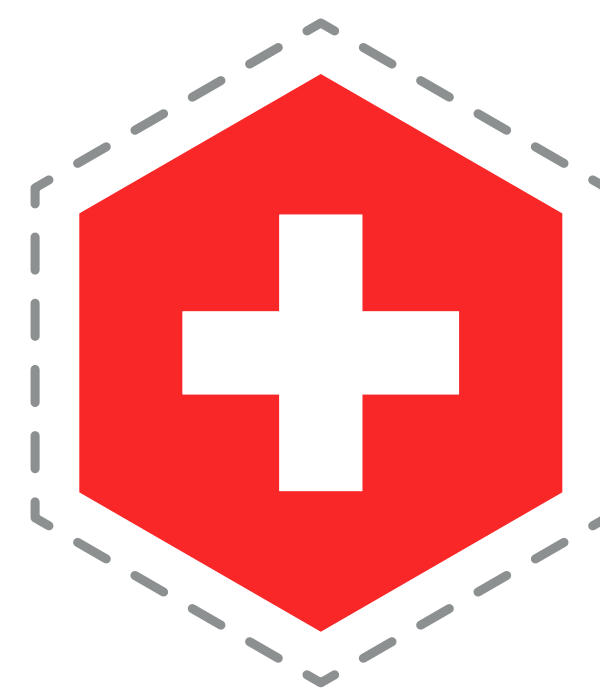
Boudry (NE)  
Switzerland

## Major features

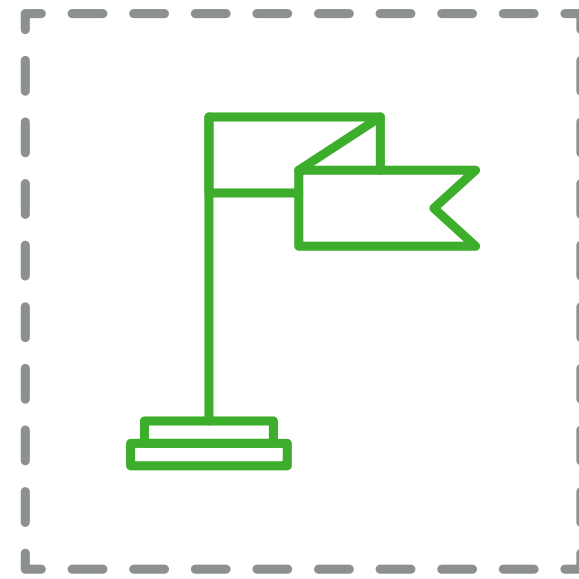
Building surface 1'400m<sup>2</sup>

Clean room:

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

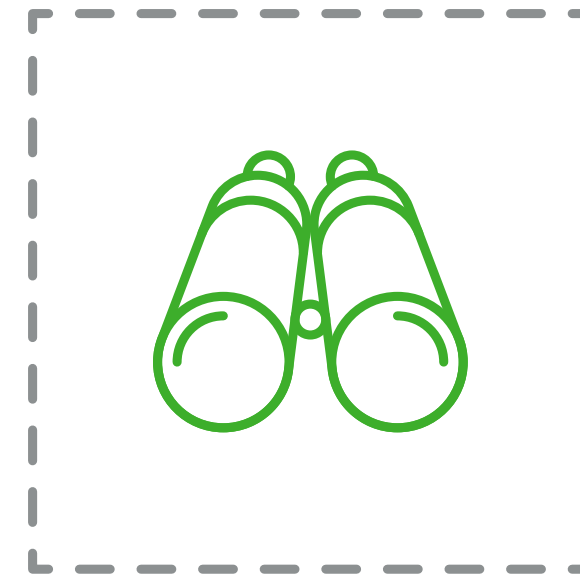


# STATEMENTS



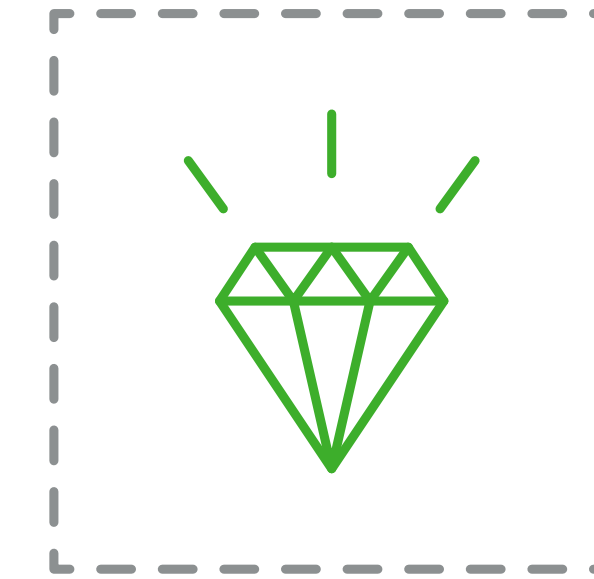
## MISSION

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



## MILITARY/AEROSPACE

Sensors and converters



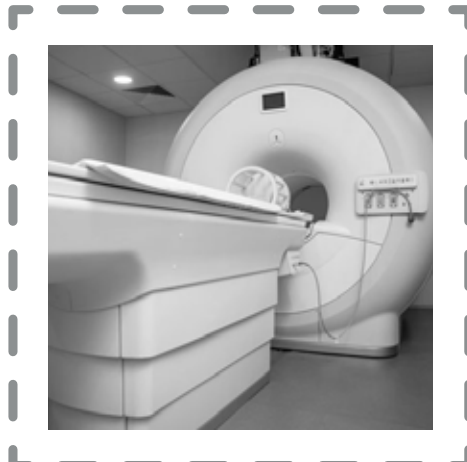
## INDUSTRIAL

Sensors, actuators, security, encryption



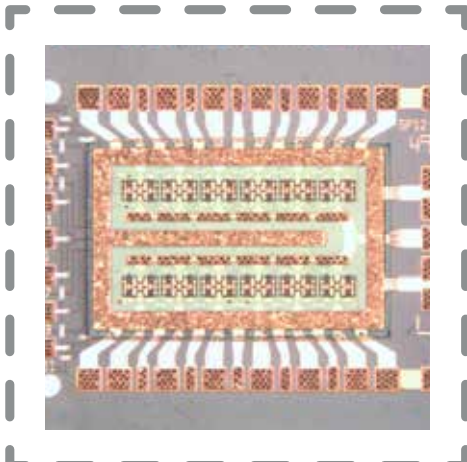
## DIGITAL

RF-ID, optoelectronic, digital



## IMAGING

X-Ray sensors, imagers



## MEMS

Membrane sensors, switches



COMPANY

# COMPETENCIES

## Project management

- Comprehensive test solutions

## SW development

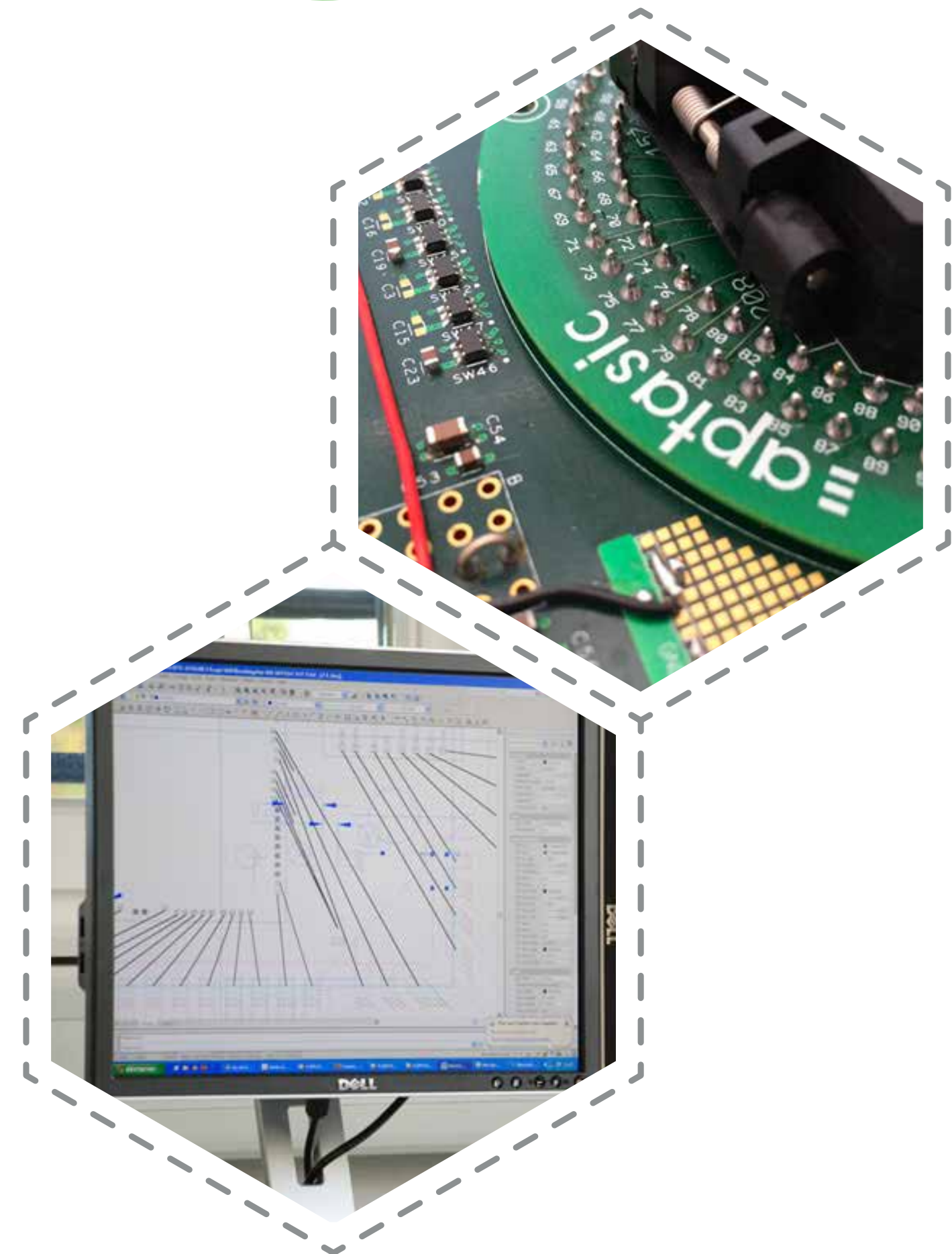
- Test program coding

## HW development

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

## Screening flows and qualifications

- JEDEC
- MIL 883
- AEC-Q100



COMPANY

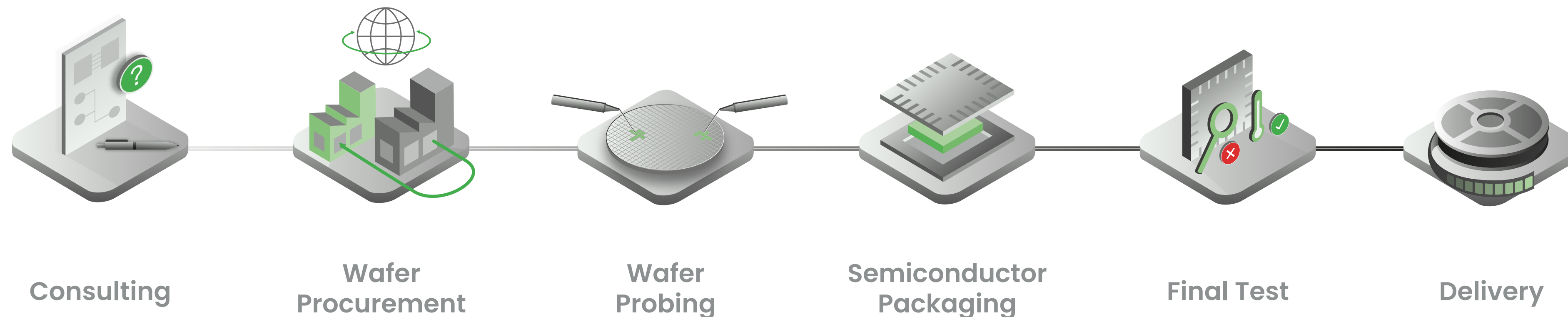
# SUPPLY CHAIN INTRODUCTION

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 (-40C° / 125-200C°)

Parallel package test at cold/room/hot (-40C° / 150C°)





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

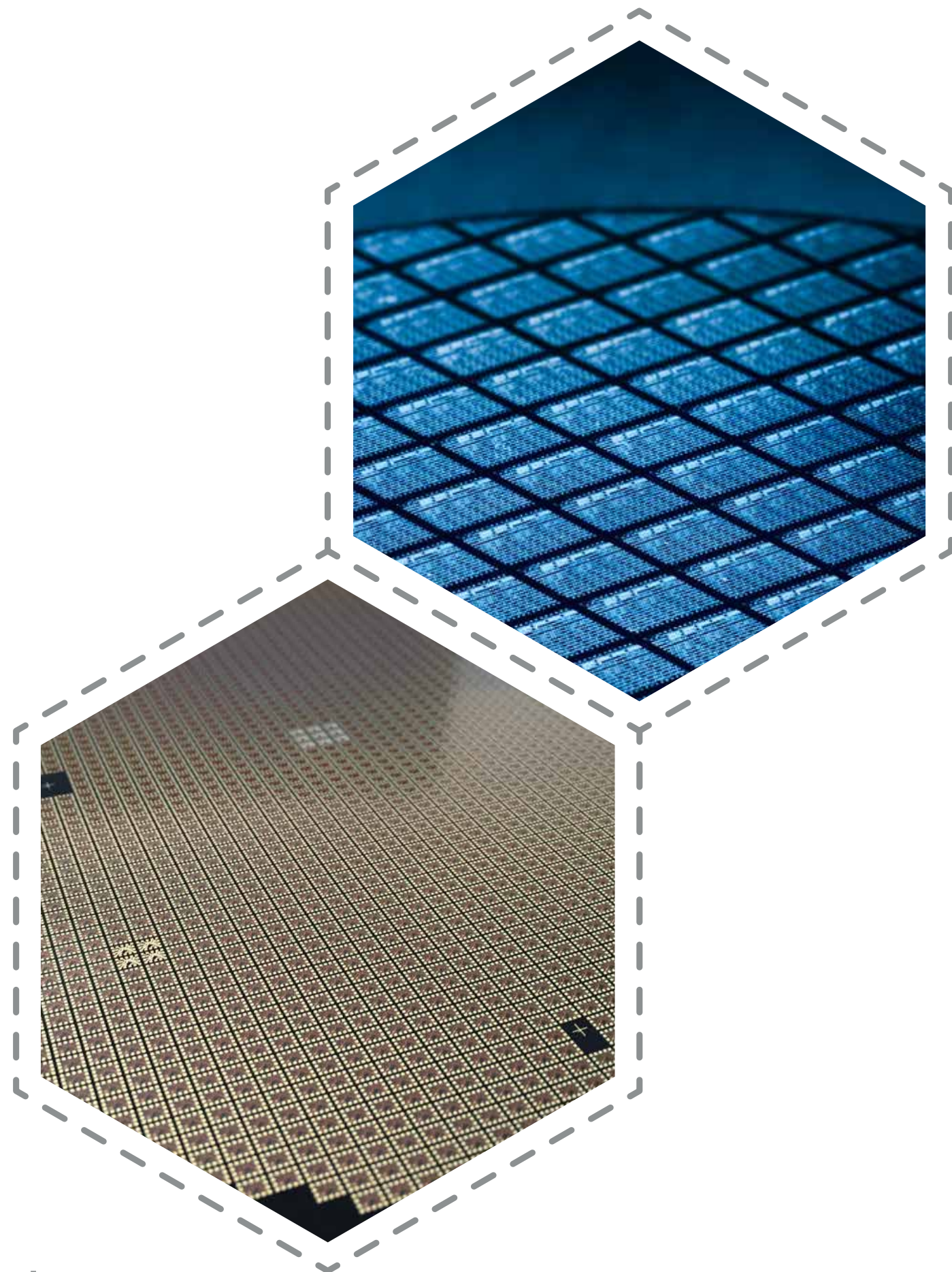
- Reduce test cost of complex ICs
- Reduce test development time
- Facilitate testing at system level
- Improve product quality
- Shorten time to market

### Methods

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



# WAFER PROCUREMENT



## DIRECT SOURCING FROM FOUNDRIES

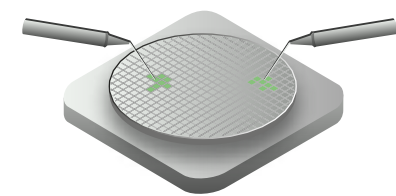
### Mature network of suppliers

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

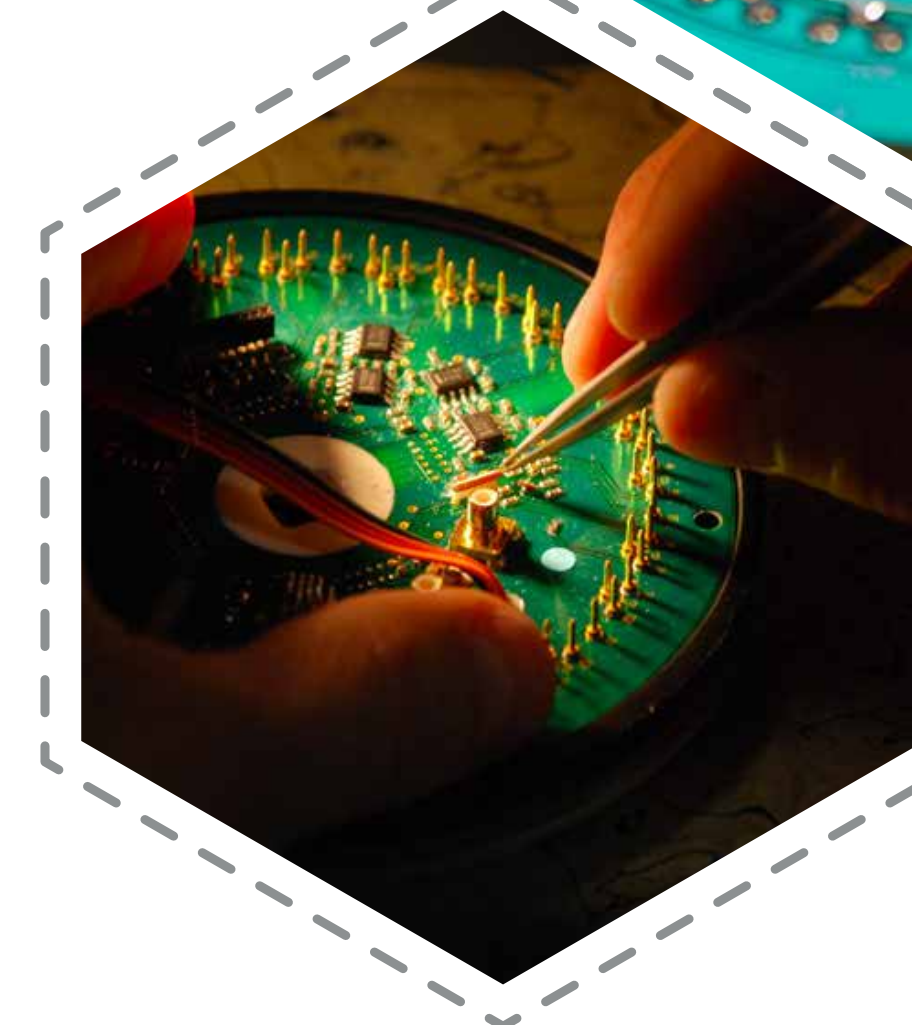
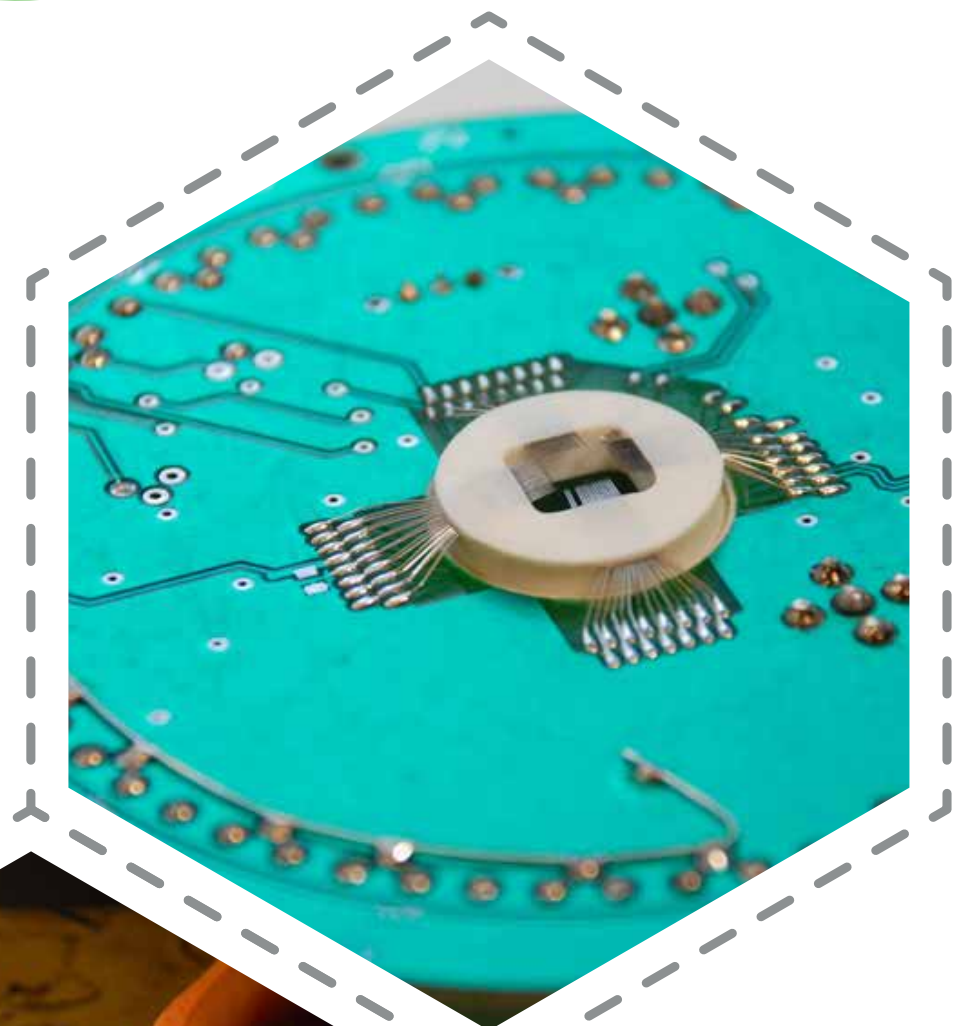
- 4" to 12" wafer diameter
- Cantilever and vertical probing

## Test can be performed at

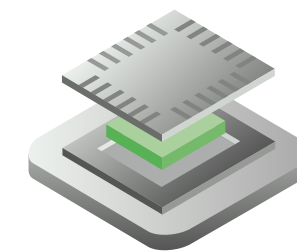
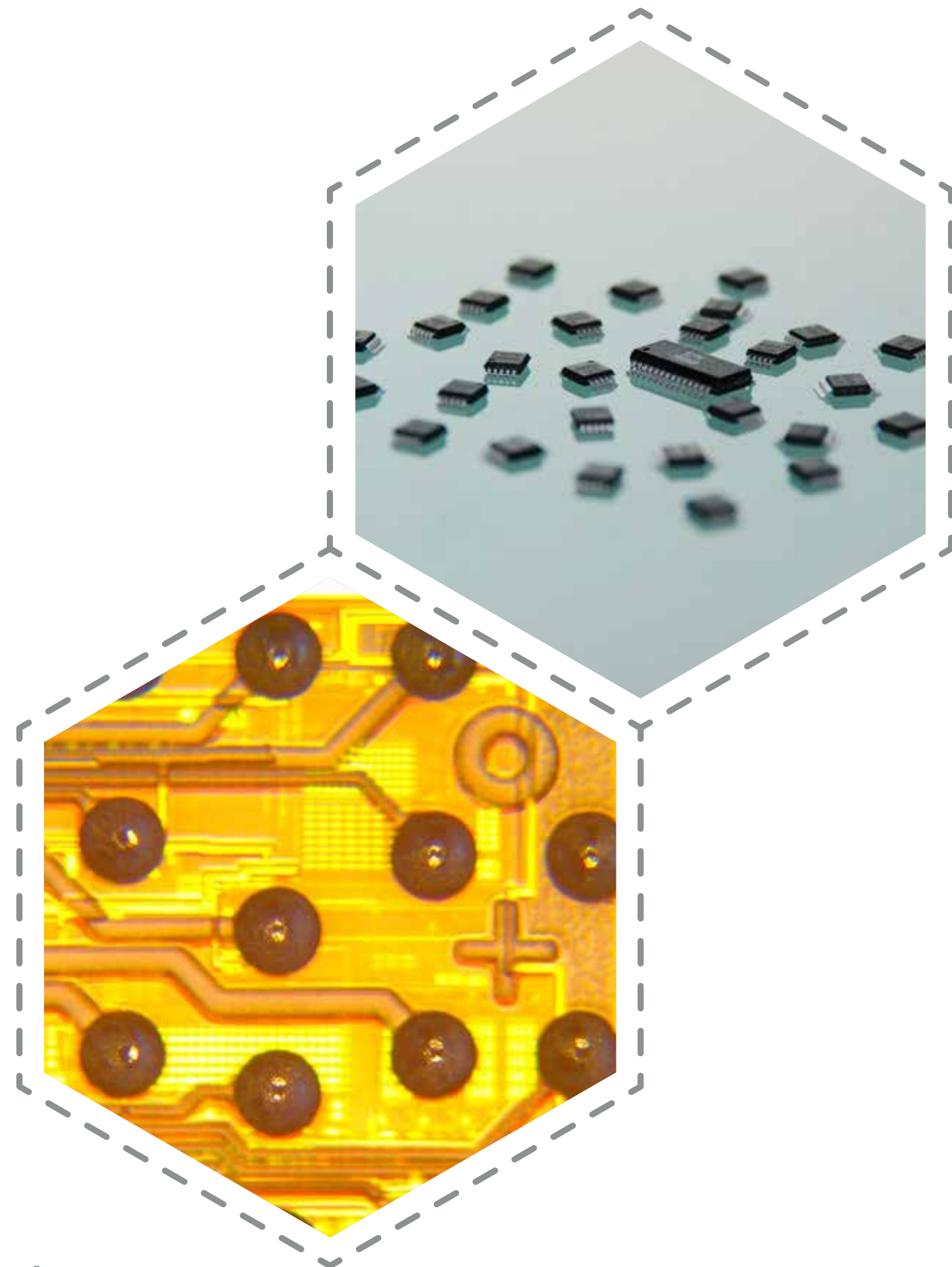
- Cold / Ambient / Hot
- Ranging from -40°C to 125-200°C

## 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)
- System in Package (SiP)



# 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.**

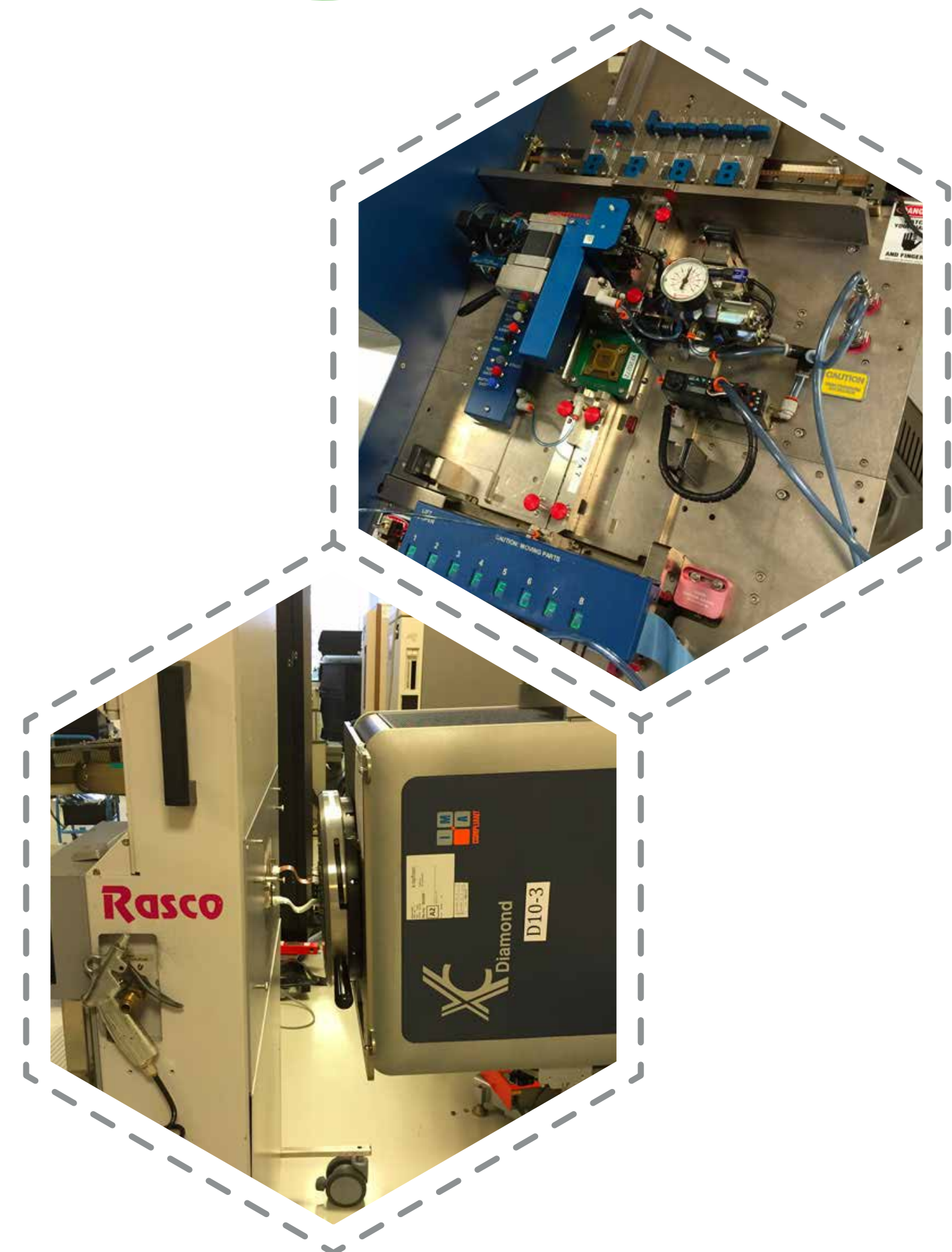
Our handlers are equipped for parallel test up to 4 sites and multiple binning options.

### Dedicated hardware implementation

- DUT handler-cards
- Load-boards

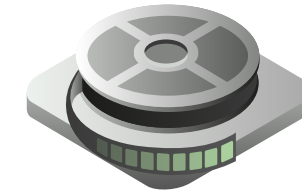
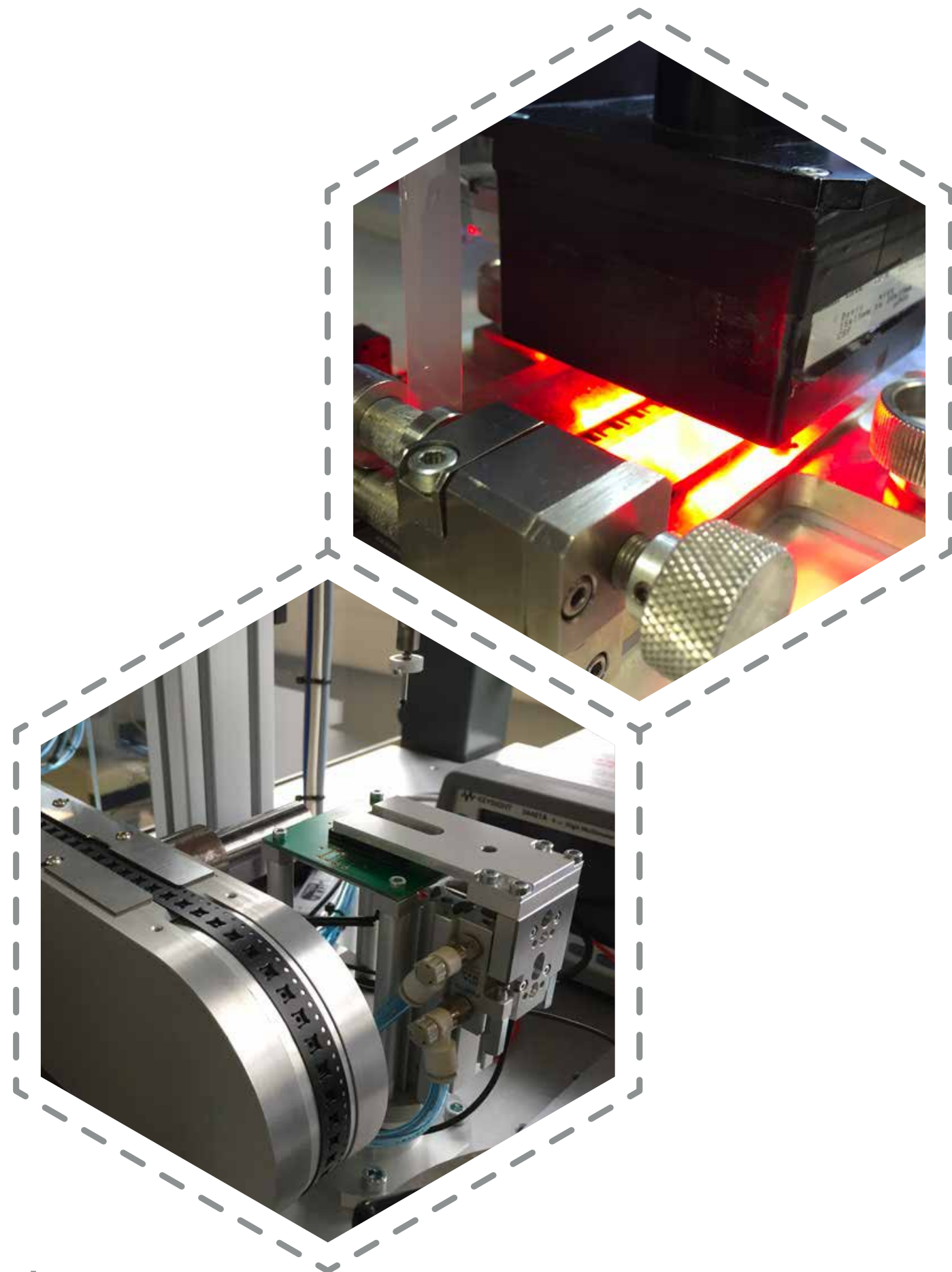
### Qualification & Screening

- JEDEC, MIL883 and AEC-Q100 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.

# CLEAN ROOM

## Clean Room

Surface 400m<sup>2</sup>

Class ISO8 - 10'000

Program to modernize infrastructure over last 5 years to achieve high efficiency and increase capacity and redundancy

## List of purchases

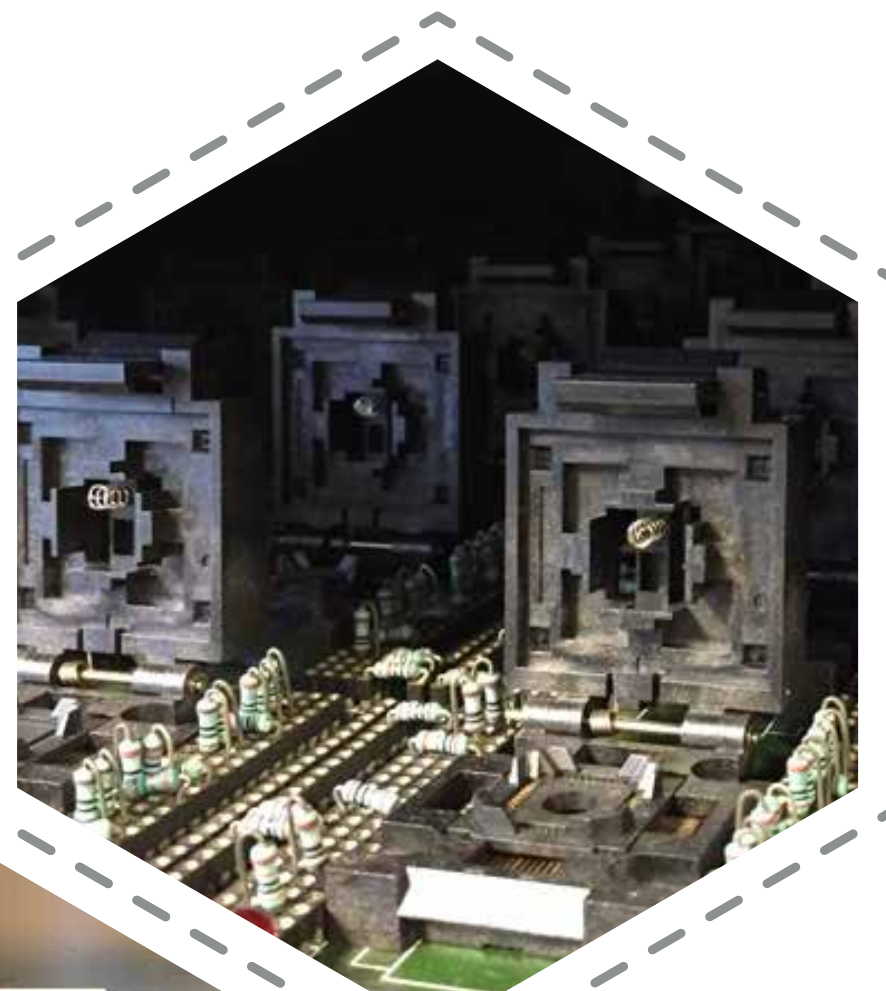
- 1x Thermo-stream
- 4x XCerra (LTX-C D10 testers)
- 3x EG4090u 8" wafer probers
- 2x RASCOs parallel test handler
- 1x UF-3000ex 12" wafer prober
- 1x AATEC pick and place with vibrant bowl
- 1x Panda Robot





EQUIPMENT

# QUALIFICATION



## JEDEC, MIL883 and AEC-Q100 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



# REFERENCES





**ANY QUESTIONS ?**

