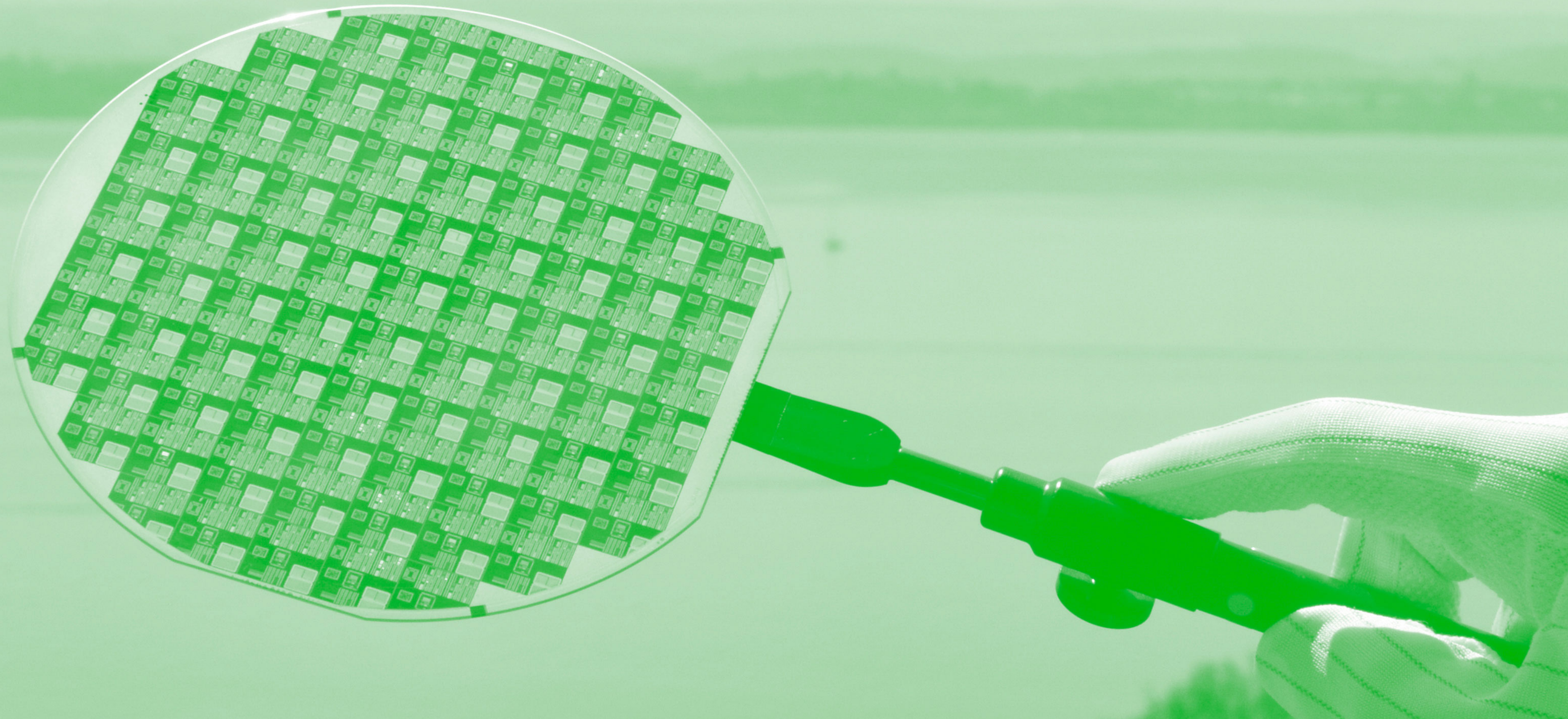




Turnkey solutions ?
The good news, is you have options

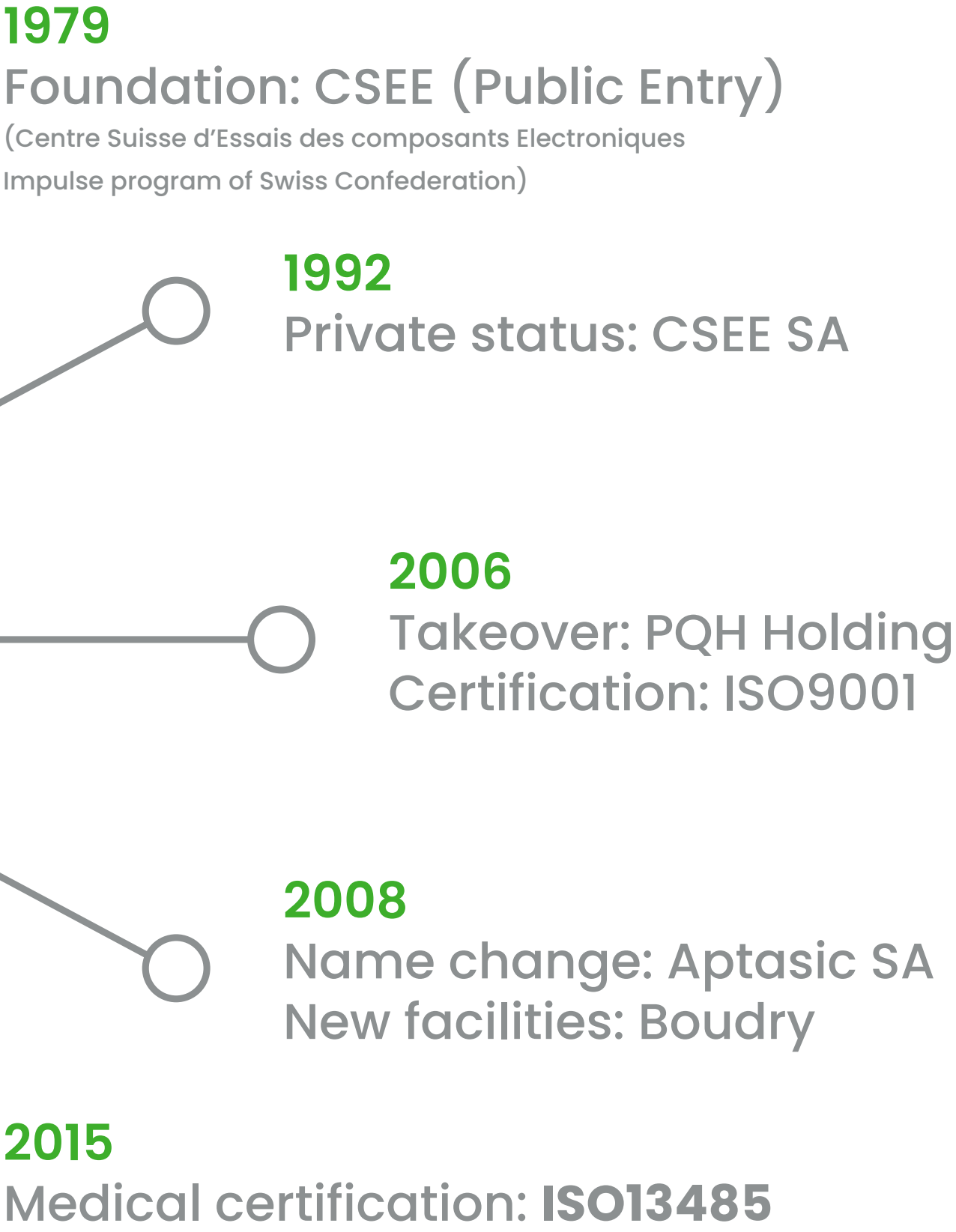


PRESENTATION OUTLINE

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 1'400m²

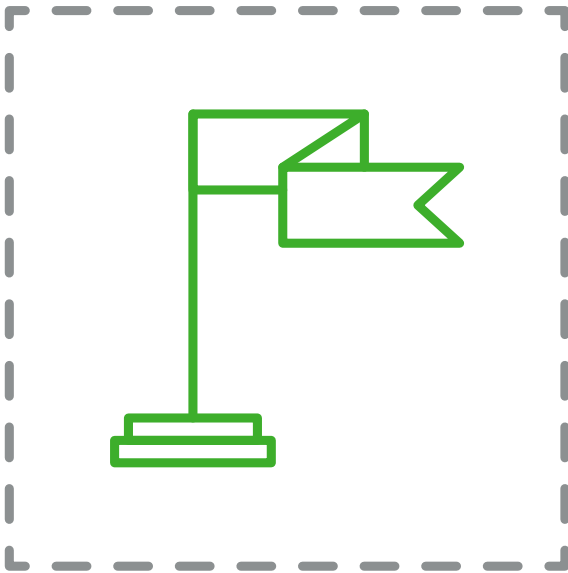
Clean room:

- 400m²
- Class 10K (ISO8)



COMPANY

STATEMENTS



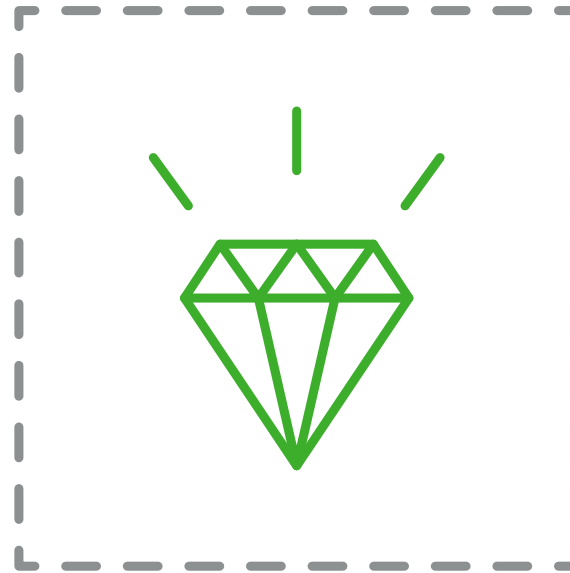
MISSION

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)

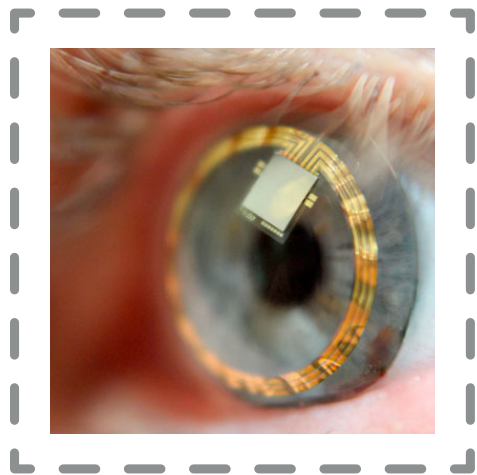


VALUES

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

COMPANY

ACTIVITIES



MEDICAL
Implantable, diagnostic
and treatment devices



GREEN-TECH
Photovoltaic panels



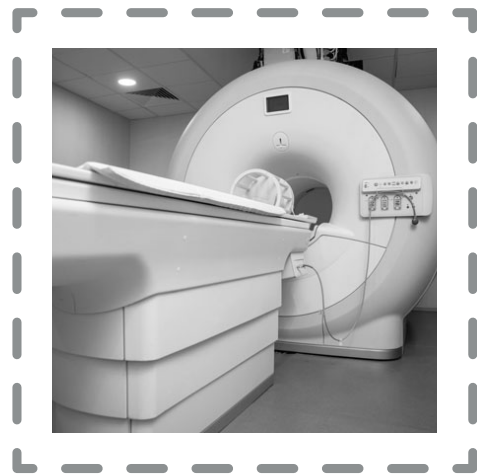
MILITARY/AEROSPACE
Sensors and converters



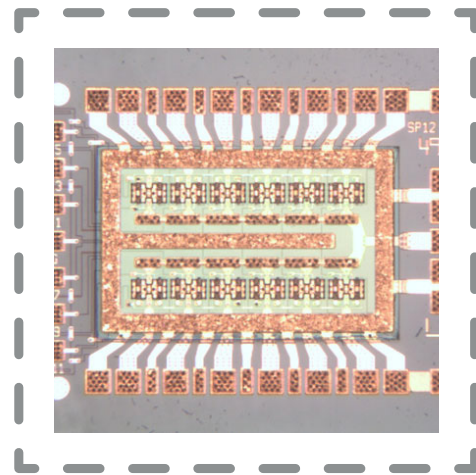
INDUSTRIAL
Sensors, actuators, security,
encryption



DIGITAL
RF-ID, optoelectronic,
digital



IMAGING
X-Ray sensors, imagers



MEMS
Membrane sensors,
switches

COMPANY

COMPETENCIES

Project management

- Comprehensive test solutions

SW development

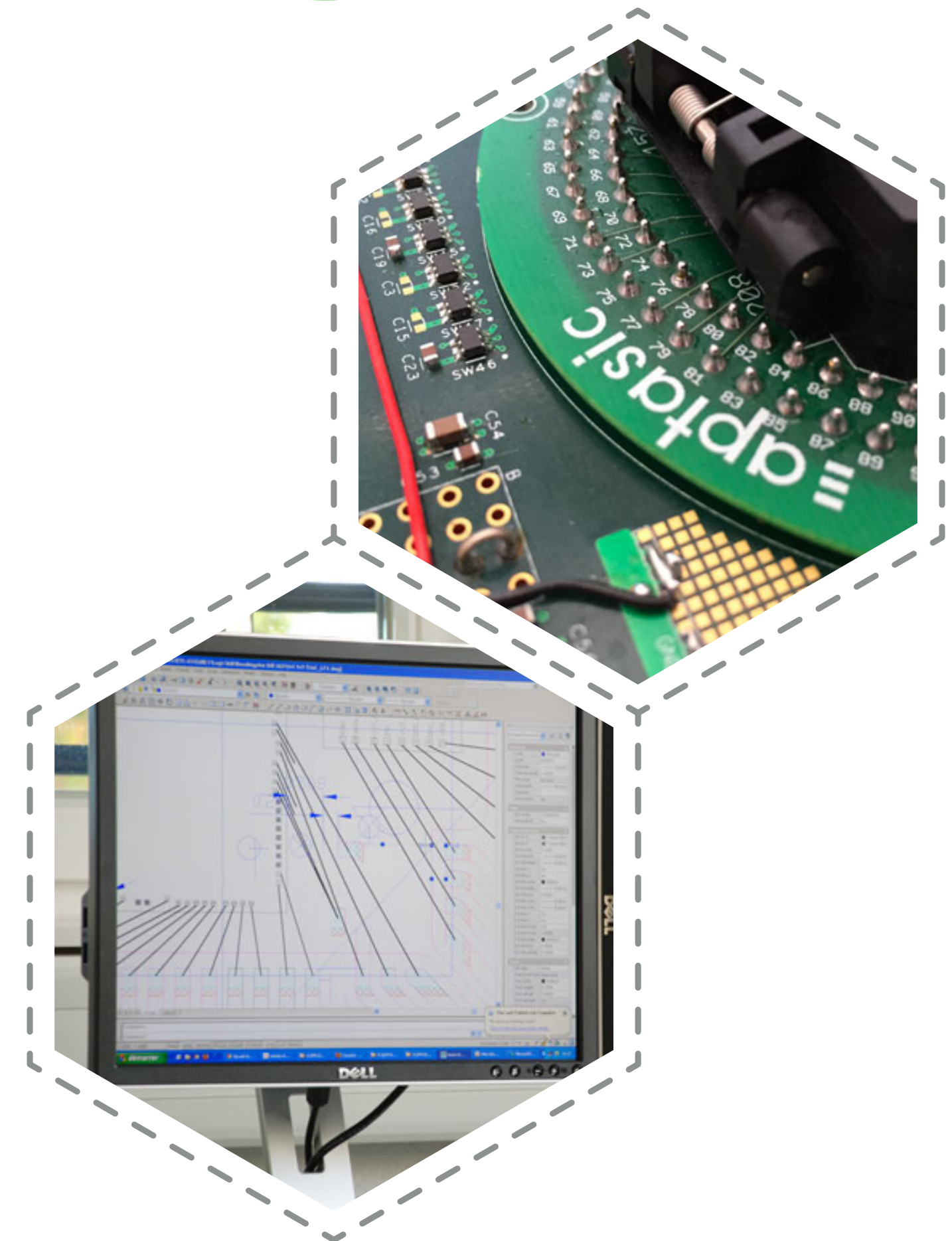
- Test program coding

HW development

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

Screening flows and qualifications

- JEDEC
- MIL 883
- AEC-Q100



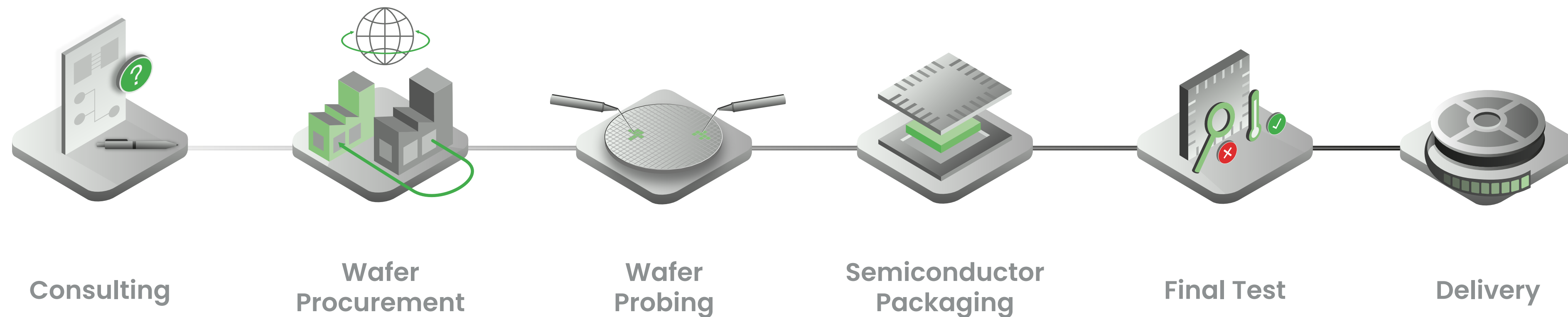
SUPPLY CHAIN INTRODUCTION

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°C / $125-200^{\circ}\text{C}$)

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

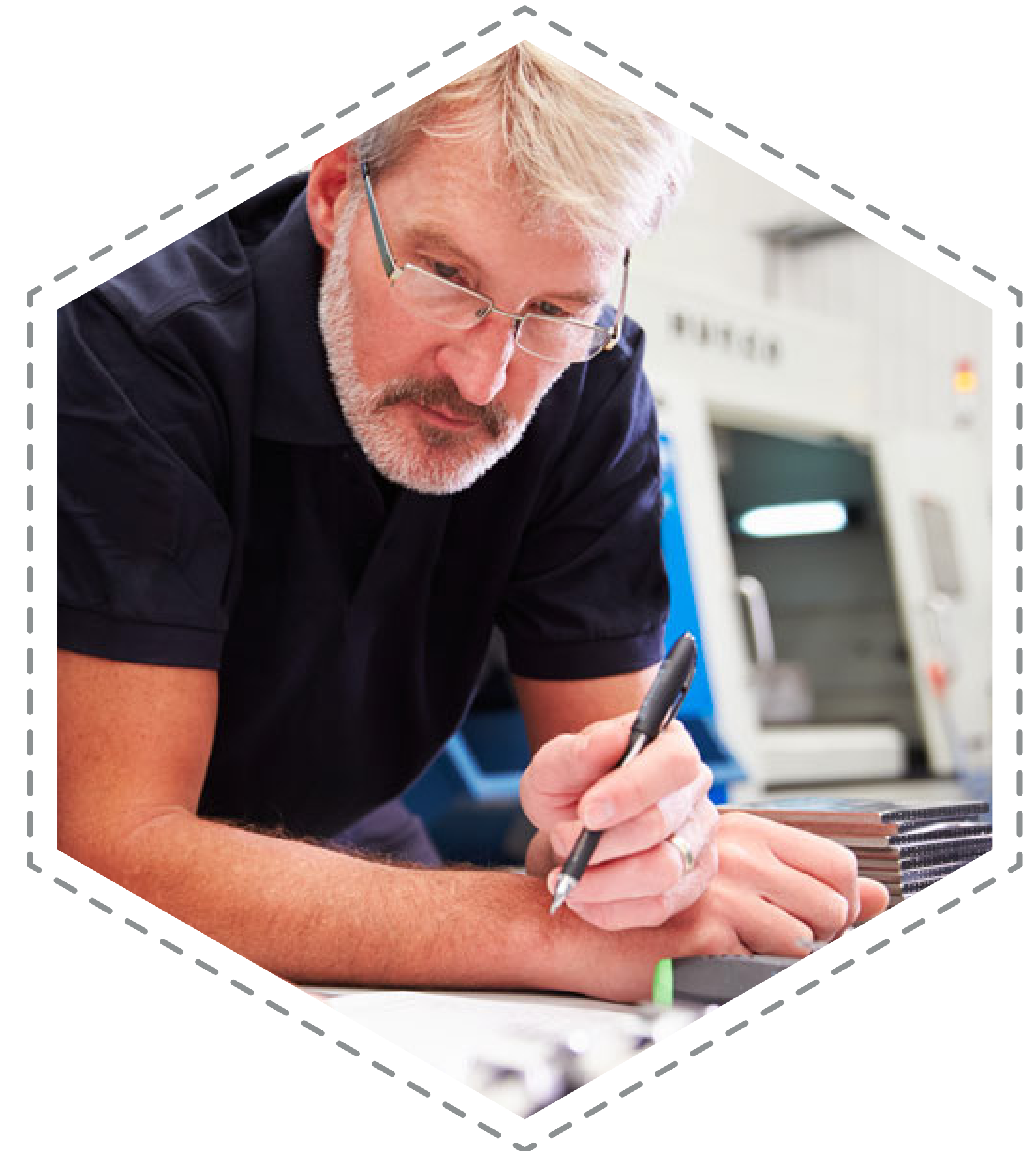
- ICs that are easy to test
- Increase accessibility / observability
- Ensure predictable ICs response

Targets

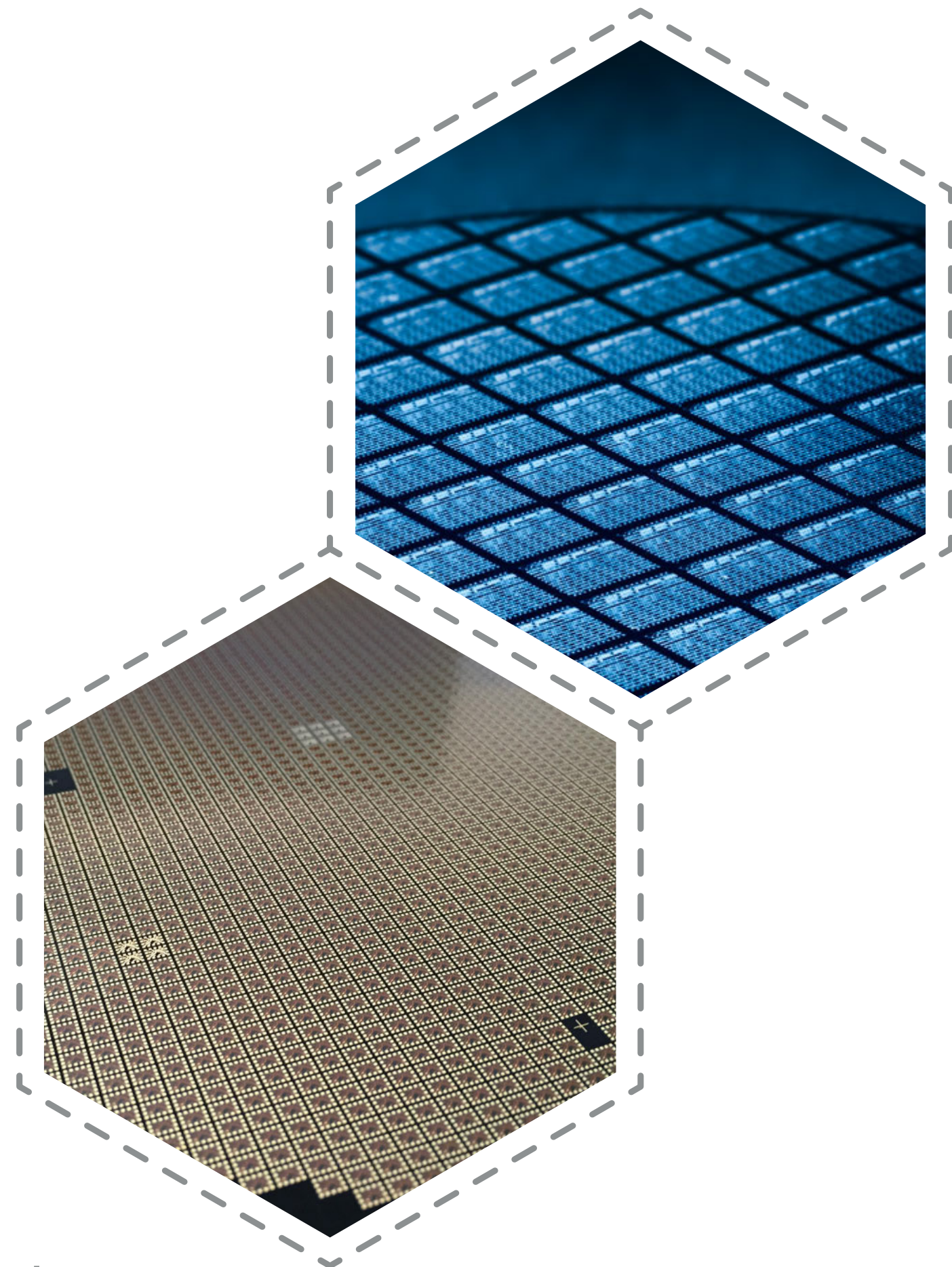
- Reduce test cost of complex ICs
- Reduce test development time
- Facilitate testing at system level
- Improve product quality
- Shorten time to market

Methods

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



WAFER PROCUREMENT



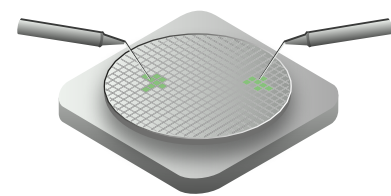
DIRECT SOURCING FROM FOUNDRIES

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

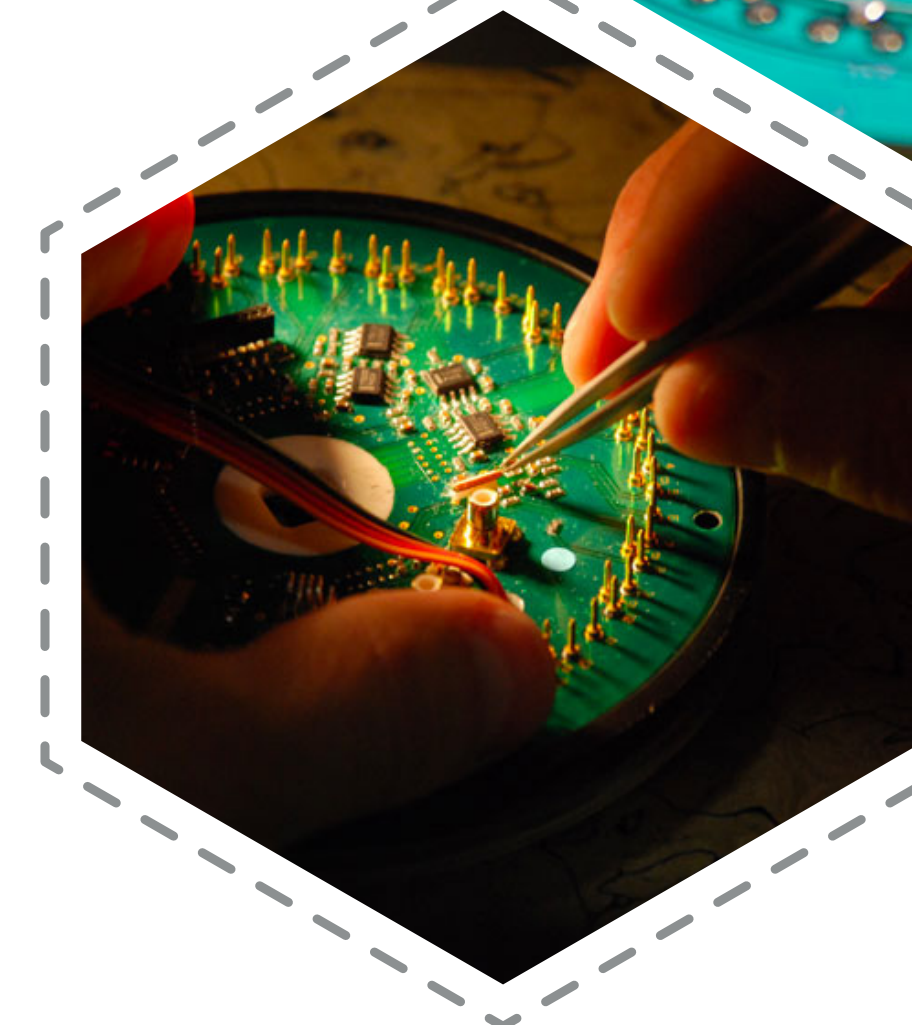
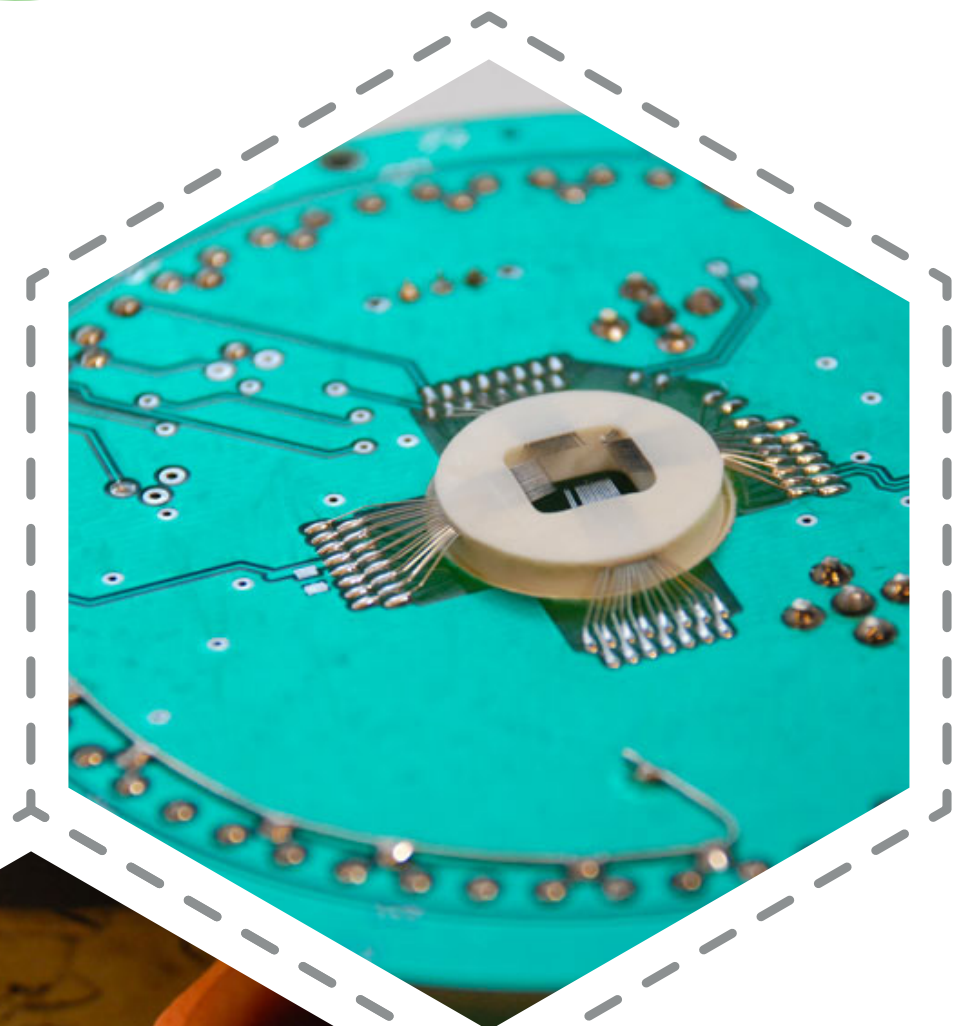
- 4" to 12" wafer diameter
- Cantilever and vertical probing

Test can be performed at

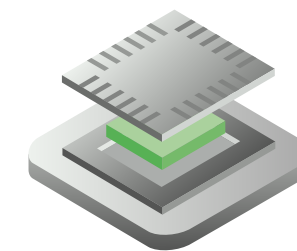
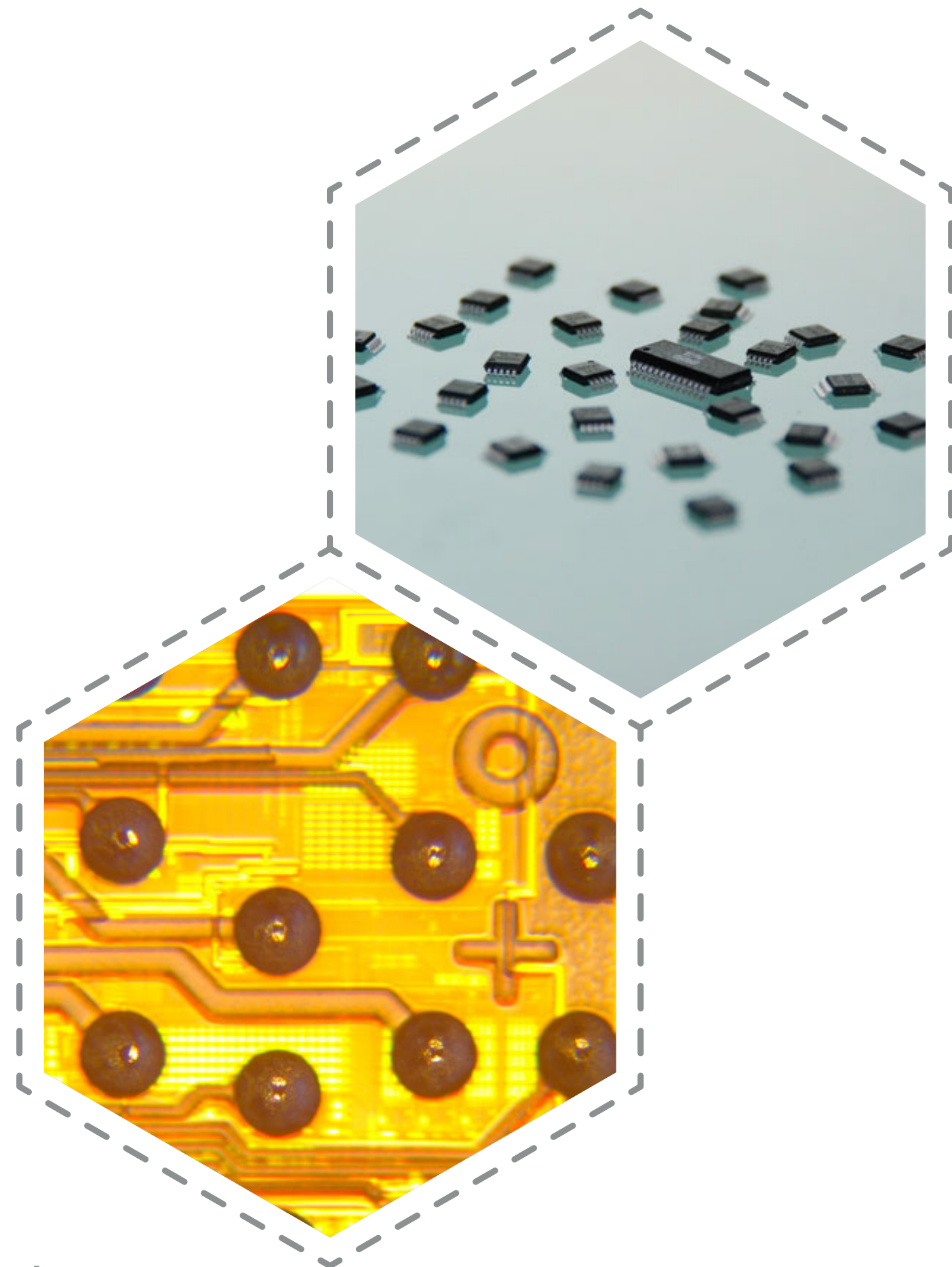
- Cold / Ambient / Hot
- Ranging from -40°C to 125-200°C

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**.

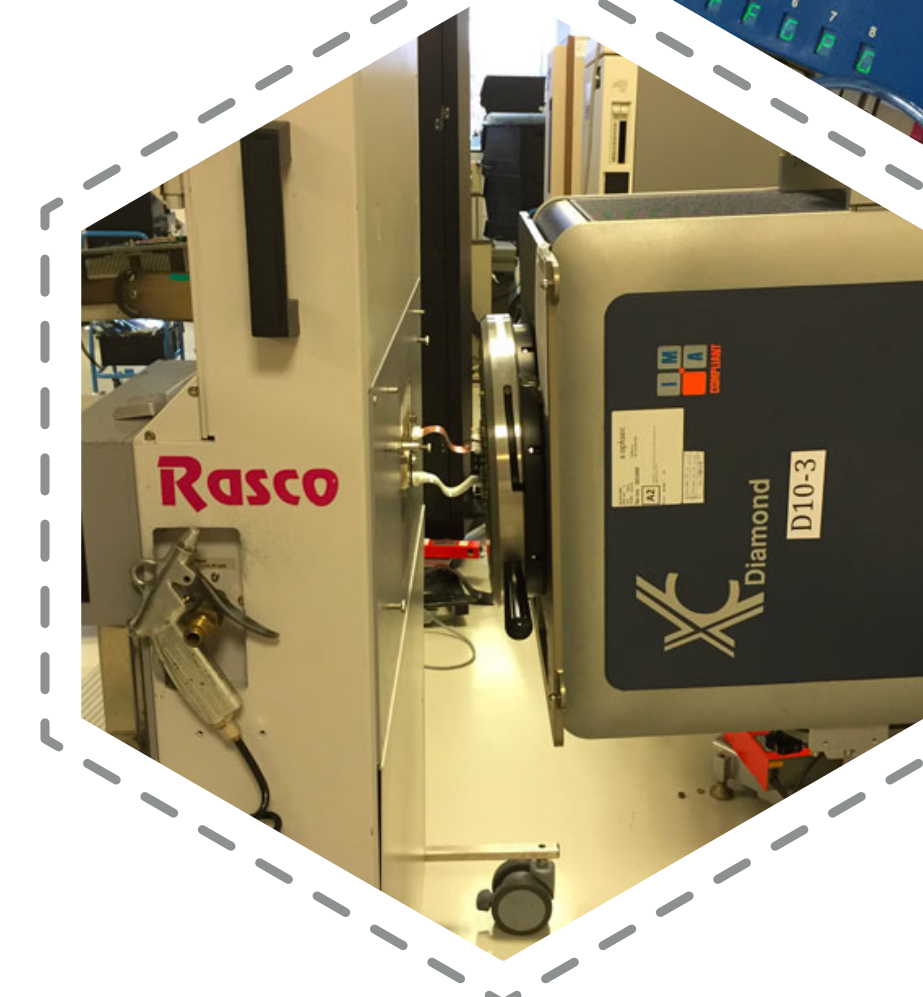
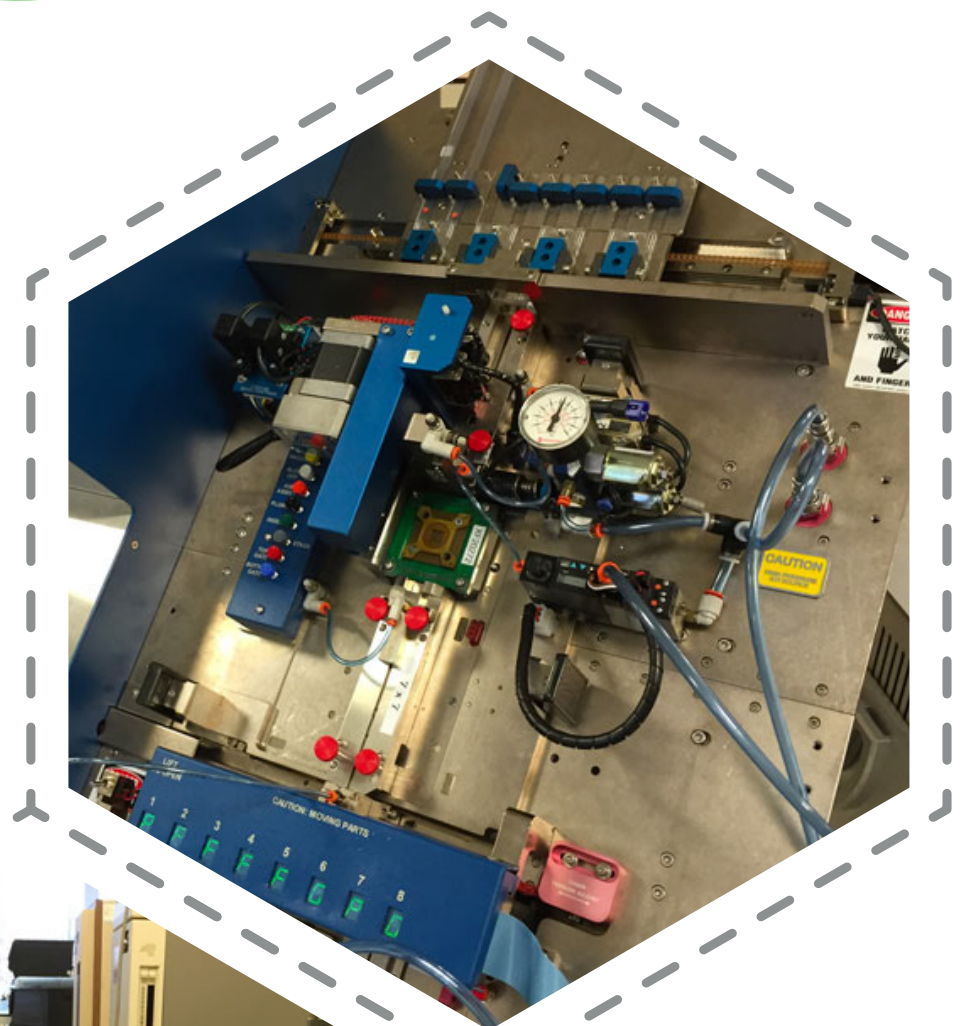
Our handlers are equipped for parallel test up to 4 sites and multiple binning options.

Dedicated hardware implementation

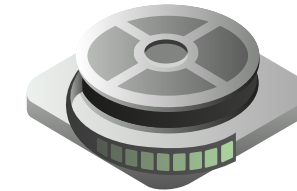
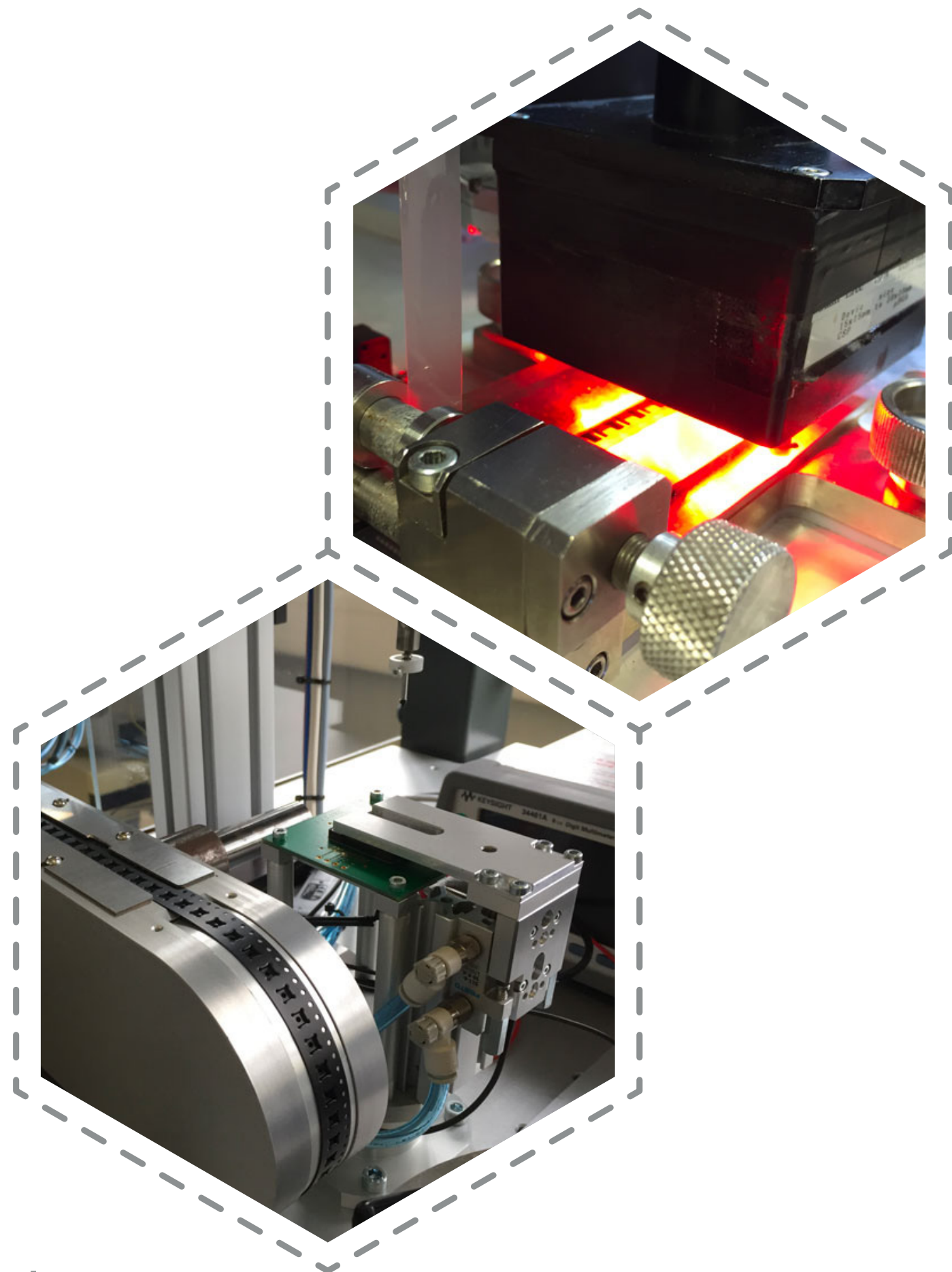
- DUT handler-cards
- Load-boards

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.

EQUIPMENT

CLEAN ROOM

Clean Room

Surface 400m²

Class ISO8 - 10'000

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

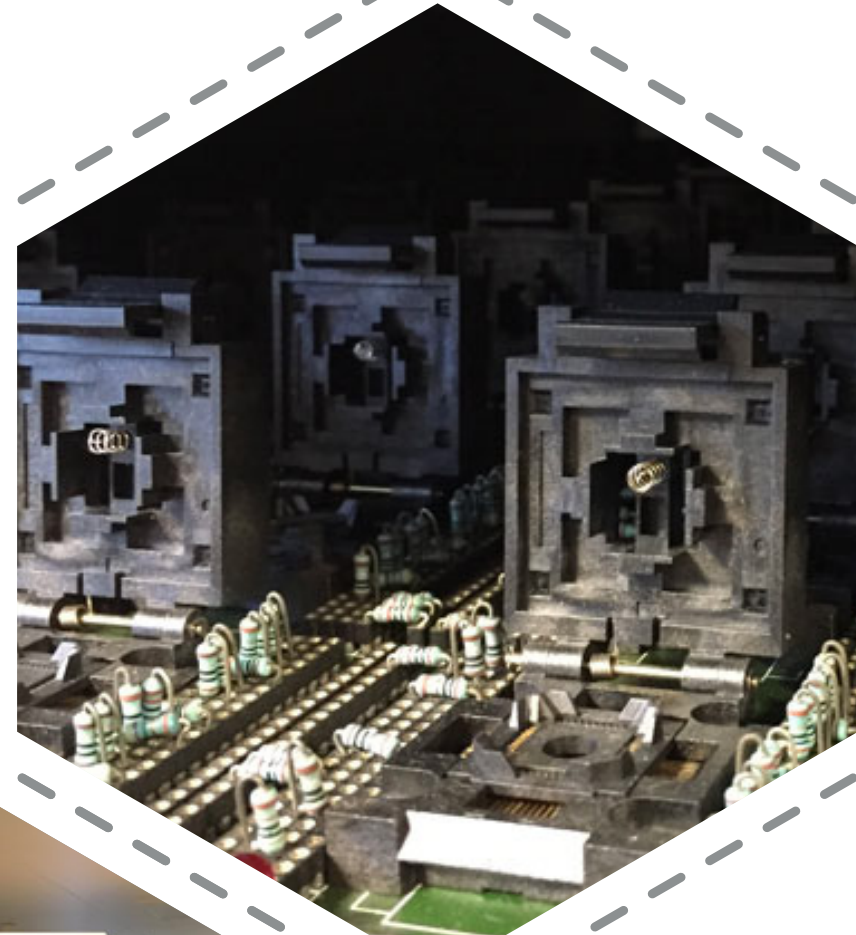
List of purchases

- 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



ANY QUESTIONS ?

