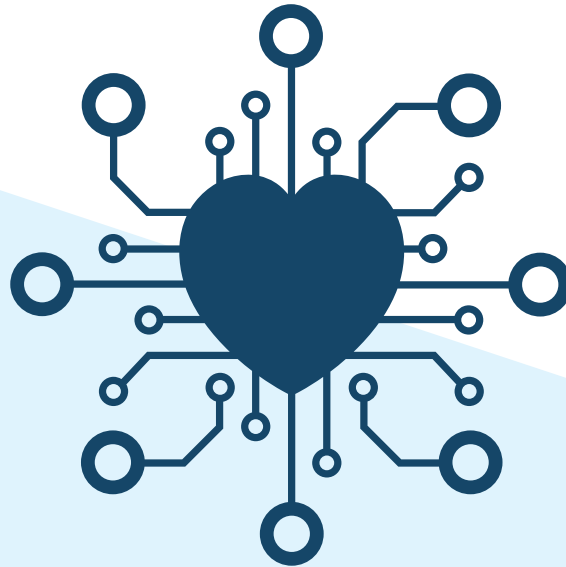


# AT THE HEART OF YOUR INVENTIONS



[www.electra.sm](http://www.electra.sm)



**ELECTRA**  
more than you ask



HI-TECH

PATIENCE  
PL  
SI  
INT  
T  
BLUE  
IDEAS  
DESIGN



PLANNING

SIMPLIFY

INTEGRATION

TRUST

INVENTIONS

SOLUTIONS

# WHO WE ARE

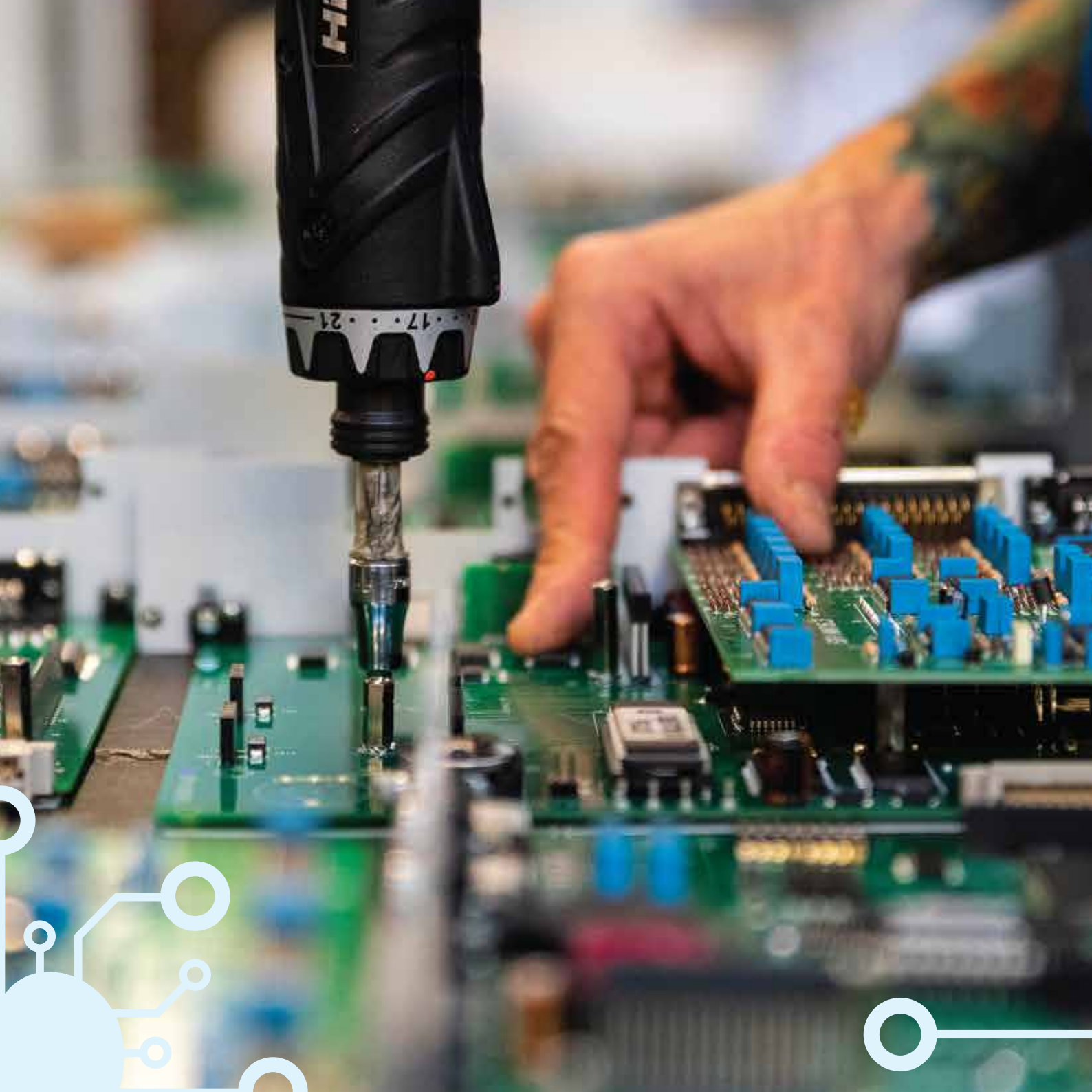
We are a team of over 60 collaborators united by one passion: love for our work. **We firmly believe in ideas, solutions, and technology.** We are engineers, technicians, inventors, quality specialists, and project managers.

Our ingenuity arises from our diverse skills.

**Since 1993, we have been designing and manufacturing microprocessor-based electronic devices.**

We operate in the electronics sector, offering extensive experience from project development to the production of the finished product, from manufacturing to testing, with a particular focus on quality control.







**ELECTRA**

www.electra.it

Area: Servizi, Servizi e Applicazioni, Conoscenza e Qualità, Servizi e Applicazioni, Servizi

Indice progetto la nostra



NEL CUORE DELLE  
TUE INVENZIONI.

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ASUS






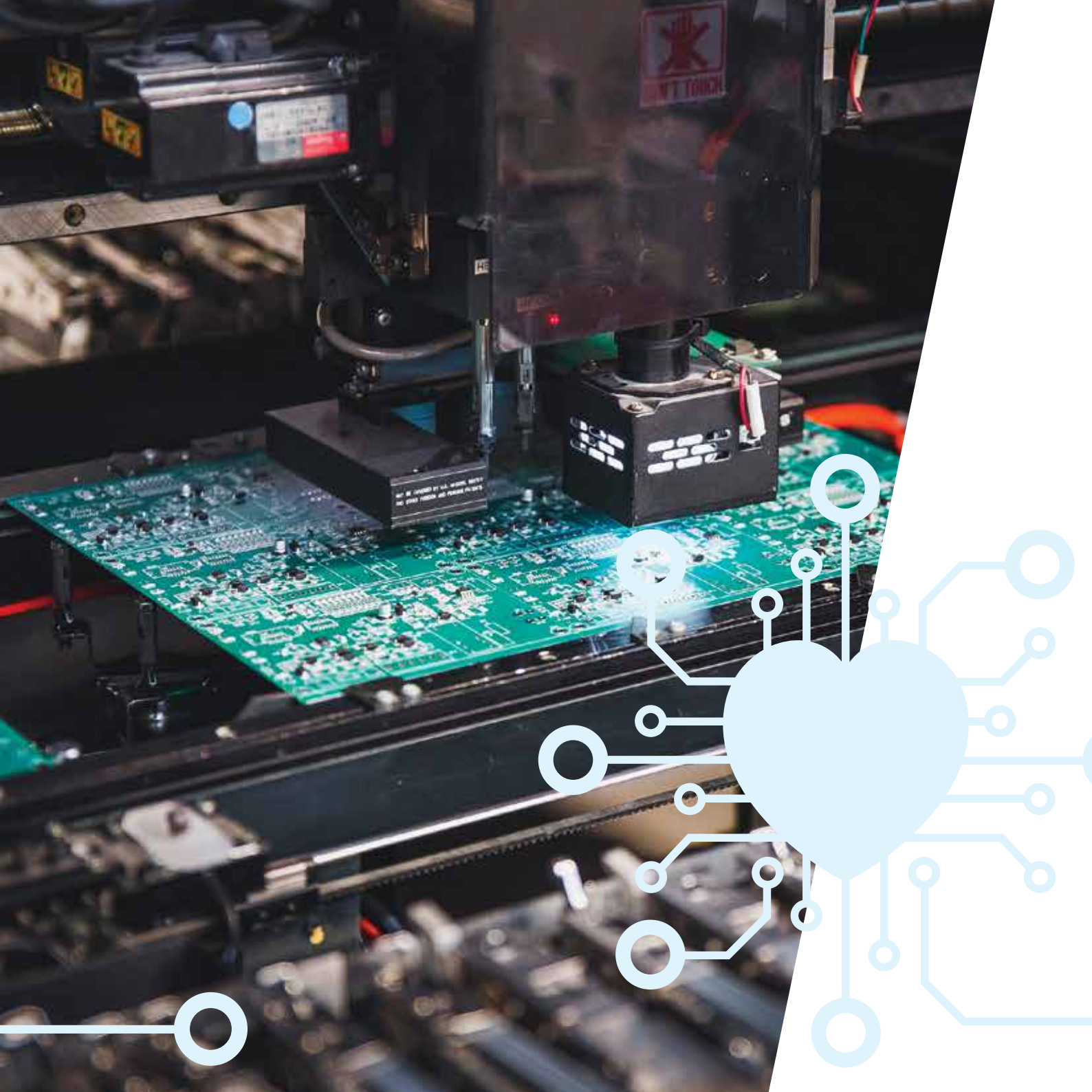
# OUR APPROACH MORE THAN YOU ASK

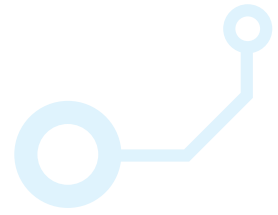
For us, what matters is to provide our clients with **exclusive**, highly **innovative** solutions that best meet the needs of the global market.

At **ELECTRA**, our primary goal is to make our partners' projects feasible.

This is possible thanks to our wealth of highly qualified **human resources** and extensive experience in using high **technology**.







# INNOVATION, AT THE HEART OF YOUR INVENTIONS

## CORE BUSINESS

We design and produce electronic boards and equipment for the **food and industrial sectors** (wood processing, plastics, packaging systems, power controls); we also design and manufacture **high-tech equipment** in the **aesthetic and medical third-party sectors**.

*Learn more at [www.electra.sm](http://www.electra.sm)*



# OUR SKILLS

## DESIGN CAPABILITIES

- 
- ✓ Complete design of electronic devices
  - ✓ Manufacturing and project processes certified according to ISO9001 and ISO13485 standards
  - ✓ Feasibility studies for new projects
  - ✓ Definition, planning, and identification of harmonized technical standards to apply
  - ✓ Complete design (hardware, software, and mechanics) of electronic boards, systems, and devices
  - ✓ Independent electrical scheme realization or shared with the client
  - ✓ Project verification, design simulation, and laboratory testing
  - ✓ BOM verification (costs, lead time analysis, and supply forecasting, life cycle prediction)
  - ✓ PCB layout with analysis of EMC issues and compliance with applicable standards based on product type and use (insulations, environmental factors, etc.)
  - ✓ Industrialization of existing projects
  - ✓ Reverse engineering to create products compatible with existing devices
  - ✓ Product certifications: CE, UL/CSA, medical devices, Bluetooth
  - ✓ Firmware development for microcontrollers with ARM, AVR, PIC architectures from 8 to 64bit
  - ✓ Software development for embedded systems and PCs with graphical interface
  - ✓ Creation of automated testing benches for client or internal testing
  - ✓ Applications and support for devices compliant with Industry 4.0 and 5.0 standards. Certification service in compliance with Chamber of Commerce requirements
  - ✓ Production documentation

## UTILIZED TECHNOLOGIES

- ✓ Image acquisition and analysis from cameras
- ✓ Bluetooth communication and certification
- ✓ WiFi communication
- ✓ EtherCAT communication
- ✓ Ethernet communication
- ✓ Modbus communication
- ✓ CAN/CANopen communication
- ✓ RS-485 communication
- ✓ RS-232 communication
- ✓ Cellular network communication 2G/4G
- ✓ 3D printing prototyping
- ✓ Mechanical design of sheet metal, plastic processing, design of injection molding containers
- ✓ Motor control algorithms



## EXAMPLES OF PROJECTS WE HAVE IMPLEMENTED

- ✓ Inverters for three-phase asynchronous motors with scalar or vector control
- ✓ Brushless drivers for E-bikes
- ✓ Brushless drivers for screwdrivers with torque-angle-speed control
- ✓ Brushless drivers for industrial traction and handling
- ✓ DC motor drivers with torque and speed control
- ✓ Large industrial touch screen interfaces (>10") with graphic acceleration and audio-video decoding H264
- ✓ Medium-sized industrial touch screen interfaces (4.3", 7") with animations
- ✓ OLED display interfaces
- ✓ I/O with Ethercat slave
- ✓ Gateway board with Ethercat communication, PoE power supply, CANopen
- ✓ High-power mold temperature control drivers (30KW) with CanOpen interface
- ✓ Control PLCs with I/O for industrial applications
- ✓ Camera image reading applications
- ✓ Diagnostic data logging systems from field sensors with cloud transmission (MQTT)
- ✓ AC three-phase motor inverters up to 2KW
- ✓ 600W laser devices for professional aesthetic hair removal
- ✓ Radiofrequency medical devices for physiotherapy

OUR  
EXPERTISE



## NEW EXPLORATION AREAS

- ✓ AI systems applied in industrial sectors (Machine Learning) for data analysis for predictive maintenance
- ✓ Machine Vision algorithms for quality control (eliminating human error, removing alienating activities, etc.)
- ✓ Cyber Security themes applied to connected equipment
- ✓ Wireless charging of electronic devices
- ✓ Biometric recognition technologies

## PRODUCTION CAPABILITIES

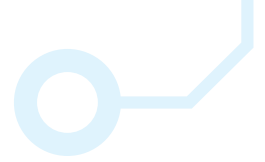
- ✓ Manufacturing of electronic boards on various substrates (PCB in FR4, aluminum, kapton, flexible supports, and printed)
- ✓ SMD line with a capacity of 60,000 components/hour
- ✓ Automatic Optical Inspection System AOI
- ✓ X-RAY welding analysis system
- ✓ Dual mobile probe testing station

## APPLICATION FIELDS

- ✓ Wood processing
- ✓ Cash Handling
- ✓ Plastic molding
- ✓ Solar storage systems
- ✓ Aesthetic-medical equipment
- ✓ Industrial handling
- ✓ Packaging systems

- ✓ Automated potting equipment
- ✓ Block potting system
- ✓ Production of pre-assembled units with electronics and mechanics
- ✓ Custom cable assembly
- ✓ Complete electronic devices production in "free pass" to the customer
- ✓ BGA component rework with rework station

# OUR PRODUCTION LINES



## Yamaha YCP10 Screen Printer

High quality and precision in the screen printing of printed circuits

## Yamaha YSM20R HM and FM Pick & Place

Maximum flexibility, speed, and adaptability to various production changes

## KINCE SUPER EP8 KWA-1225 Reflow Oven

With 8+8 zones

## Solderstar Neptune 4 Thermal Profiler

For reflow oven

## I&J Fisnar I&J500 3-Axis Robot

Mechanical micro-operations, conformal coating

## Speedline Camalot 3800 Automatic Dispenser

Micro-dispensing of tin cream, resins, and adhesives



# SMT INNOVATION



**HIGHLY PERFORMING INSTRUMENTS  
TO ACHIEVE EXCELLENCE**

# QUALITY CONTROL AND CERTIFICATIONS

Operating in compliance with **ISO 9001** and **ISO 13485** standards means ensuring to our customers and partners that every single product undergoes **stringent design**, production, and testing procedures. At **ELECTRA**, we invest maximum resources in developing increasingly efficient testing systems.

Each product undergoes an appropriate mix of checks using the following technologies:

- ✓ OMRON 3D VTS-1040 and OMRON RNS-pt Optical Inspection
- ✓ Seamark Microfocus X6600 90KV X-RAY Inspection
- ✓ Seica S20 FP and Seica S40 Pilot LX In-circuit mobile probes
- ✓ Angelantoni CH250 Climate Chamber
- ✓ Seamark R7220A Rework Station

ISO 13485

BUREAU VERITAS  
Certification

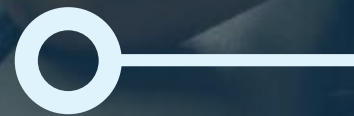
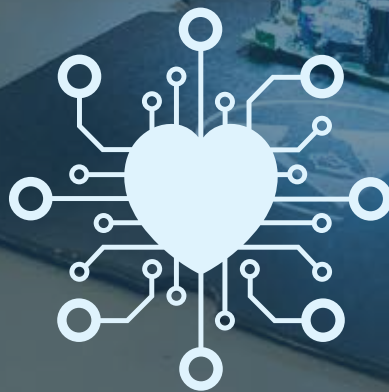


ISO 9001

BUREAU VERITAS  
Certification




**WE ARE FLEXIBLE,  
BUT STRICT IN  
QUALITY  
CONTROL**



A blue-tinted photograph of a factory floor. Several workers in blue shirts are seated at long workbenches, focused on assembling electronic components. The workbenches are cluttered with green plastic bins, tools, and various electronic parts. In the foreground, a worker is seen from the back, sitting on a blue office chair. To the right, another worker is using a soldering iron. The background shows more of the factory environment with large windows and industrial equipment. The overall atmosphere is one of a busy, organized manufacturing environment.

**CUSTOMIZATION, TRAINING,  
SUPPORT: A TEAM THAT  
WORKS TOGETHER  
WITH  
THE CUSTOMER**






## The continuous support that Electra provides to its partners and customers materializes in tangible pre- and post-sales service actions:

**Design processes:** Training represents a fundamental contractual element with our clientele, as it enhances the value of products and application methodologies. We do not merely provide complete information but act as partners who promote, assist, and intervene in the market with competence and professionalism, supporting the customer at every stage.

**Customization:** Electra's design and production calling has the capacity to understand and support the commercial needs of customers for whom the highest level of customization is sought, sharing technological and image contents.

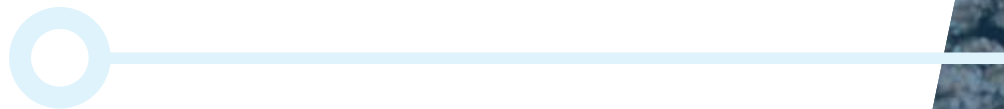
**Certification:** Electra offers a Support/Tutoring service to obtain national and international certifications, preparing all the necessary technical documentation.





# CONFLICT MINERALS

Tin, tungsten, tantalum, and gold are identified as **"conflict minerals"**. These minerals are necessary for the production of objects that we all use daily: cell phones, tablets, cars, airplanes, light bulbs...



Electra's goal is to **promote responsible practices** by companies sourcing these minerals from high-risk areas or areas affected by armed conflict.









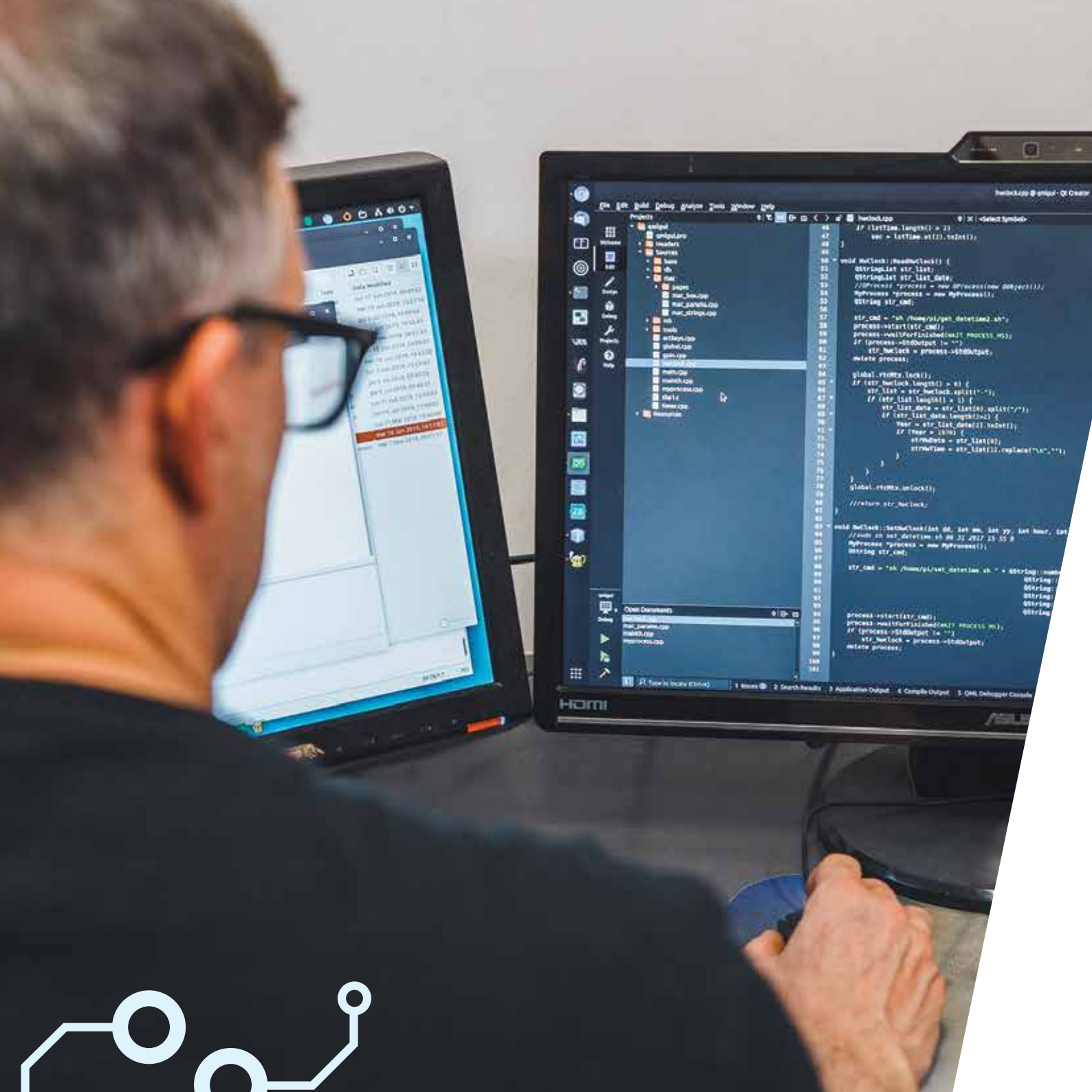
# ETHICS. FOR US, A PRECIOUS VALUE

**ELECTRA** conducts its activities in compliance with the law, within a framework of fair competition, respecting the general principles of integrity and good faith, and acts in the interest of all stakeholders.

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Our Code of Ethics is inspired by an ideal of cooperation for the mutual satisfaction of all parties involved, respecting the role of each. Electra requires Customers, Suppliers, and Collaborators to act according to the principles and rules of conduct it upholds.

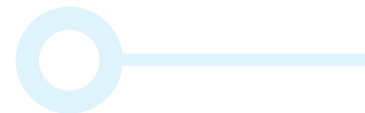
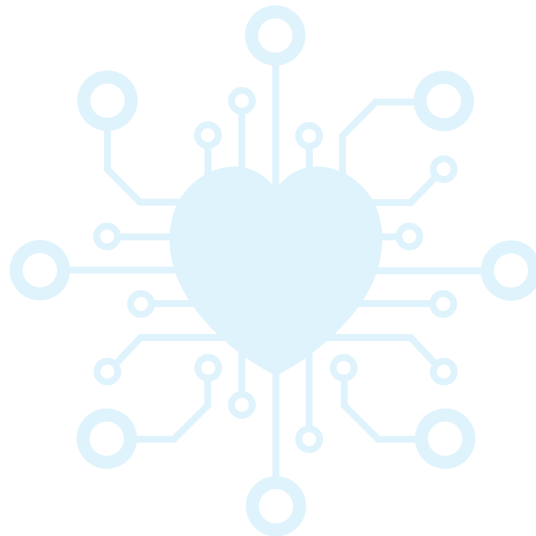
**\*Visit our website: [www.electra.sm](http://www.electra.sm) and download our Code of Ethics in the dedicated section.**



# CONFIDENTIALITY

We have chosen never to display our clients' logos to ensure their **PRIVACY** and absolute **DISCRETION**.

Because at **ELECTRA**, every client is a **TOP CLIENT** and every project is unique and exclusive.



# WHERE WE ARE



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