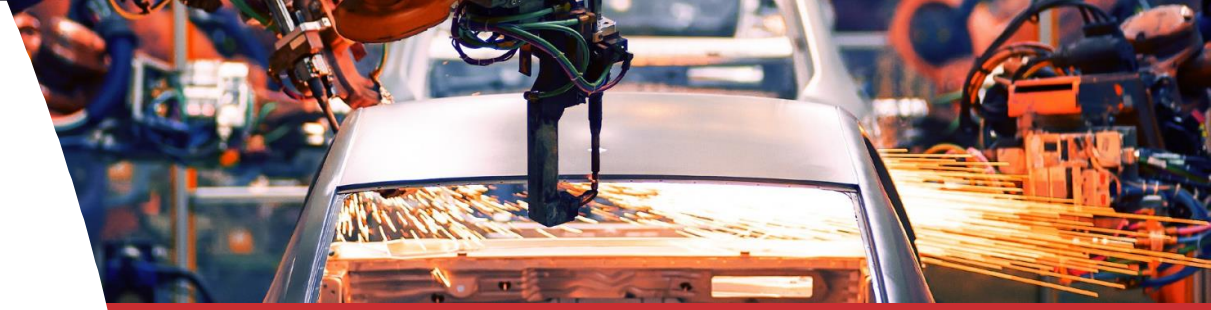
ENGINEERING AND CONSULTING

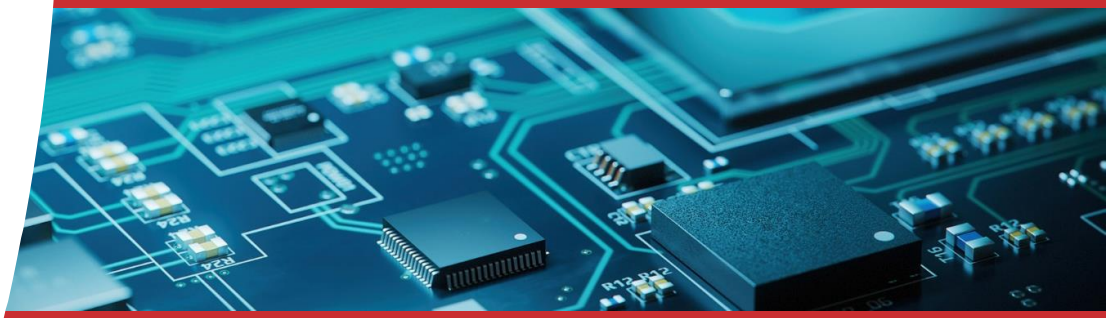
CAAR GROUP
Case History

aba caar

Francesco Ellena
President

CAR GROUP





Timeline

2009
Establishment CAAR Srl
Social Capital 20K€

2010
Capital increase
Social Capital 50K€

2012
Establishment CAAR do Brasil
Social Capital 100K€

2013
CAAR Srl becomes CAAR Spa
Social Capital 250K€
Issue of «MiniBonds» (1st company in Italy)

2014
Acquisition of KGR Elettronica Srl (100%) S.T.I. Srl (95%)
New HQ Grugliasco (TO)

2015
Establishment of CAAR Serbia

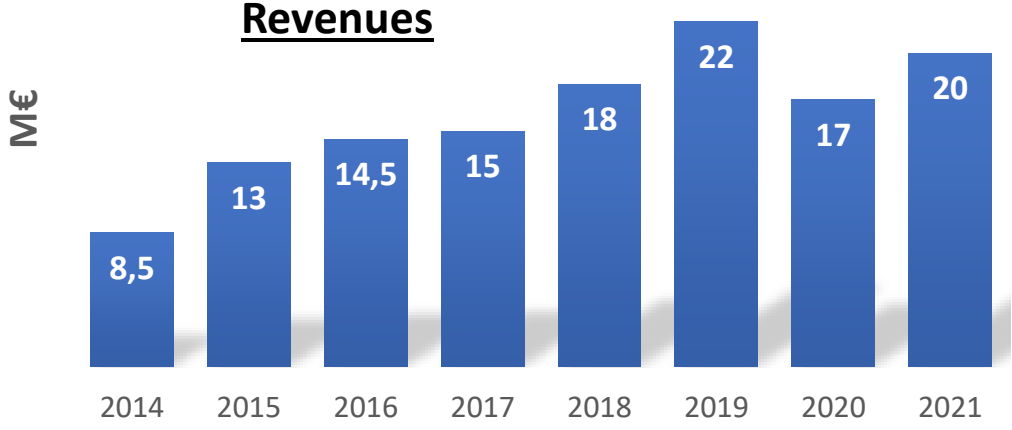
2016
Capital Increase
Social Capital 650K€

2018
2nd issue of «MiniBonds»

2020
UTS Brand Acquisition
Establishment CAAR R&D Center in Bari (BA)
New HQ Turin (TO)

2021
Acquisition of CSP

Revenues



where are we doing what

Torino (TO) • Italy
Product & Process Engineering
- Product Development
- Dies design
- BIW process and fixture design
- General Assembly
- Mechanical machining & assembly
- Process Simulations

Torino (TO) • Italy
Electronic Engineering
- On-board Electronic Systems
  - Design
  - Development
  - Integration
  - Validation
- Embedded Software for Electronic Control Units
- Testing

Belo Horizonte • Brasil
Product & Process Engineering
- Product Development
- CAE Simulation
- Manufacturing Engineering
- Fixture Design

Torino (TO) • Italy
R&D
- Research organization
- UNI EN ISO 9001: 2000 certified
- W3C member

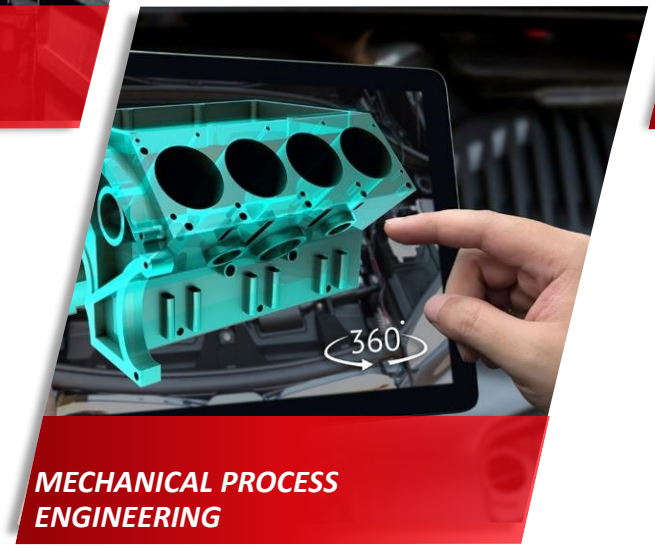
Corato (BA) • Italy
R&D & Innovation
- R&D Center
- Innovation
- Focal Point for South Italy activities

Bolzano (BZ) • Italy
Mechanical Engineering
- Production, auxiliary and maintenance tools design and MNFTG
- Testing equipment design and MNFTG
- Pneumo-Hydraulic systems design and manufacturing
- Electrical systems design and MNFTG

Kragujevac • Serbia
EE Engineering & MNFG Engineering
- Artificial intelligence
- Automotive, aerospace and railway industry consultancy
- Research and development

>350 people from 12 different countries

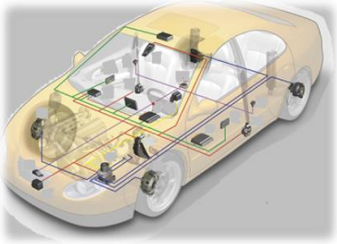
PRODUCT DEVELOPMENT



MECHANICAL PROCESS ENGINEERING

PROCESS ENGINEERING

ELECTRONIC ENGINEERING



Electronic Devices Integration in E/E Arch.

Implementation Spec's

Vehicle Function Definition

Design and Technical Reviews

Formal Requirement Definition & Management

Test Plan and Test Cases Definition

On-Bench Validation

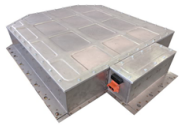
In-Vehicle Testing

Integration Testing

Back and System Validation

Cyber Security Validation

E-Powertrain Systems



BMS Design

Cells and Module Characterization

Battery Pack Design

Inverter Design

DFM (Design for Manufacturing)

Product Validation

Prototypes management

ME for Assembly Equipment and Process

End-Of-Line (EOL) testing procedures

Artificial Intelligence Algorithms

Battery Management System Algorithms

Real SOC determination

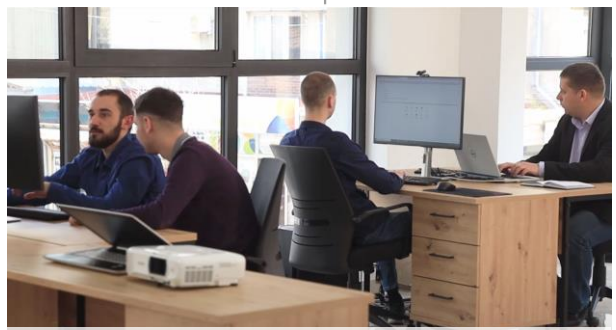
SOH determination

Rebalancing of active cells

ADAS Systems Algorithms

Face recognize

Gesture recognize



10 people to 30 in 2 years

THANK YOU!

CAAR GROUP

www.caar-to.it

ENGINEERING AND CONSULTING