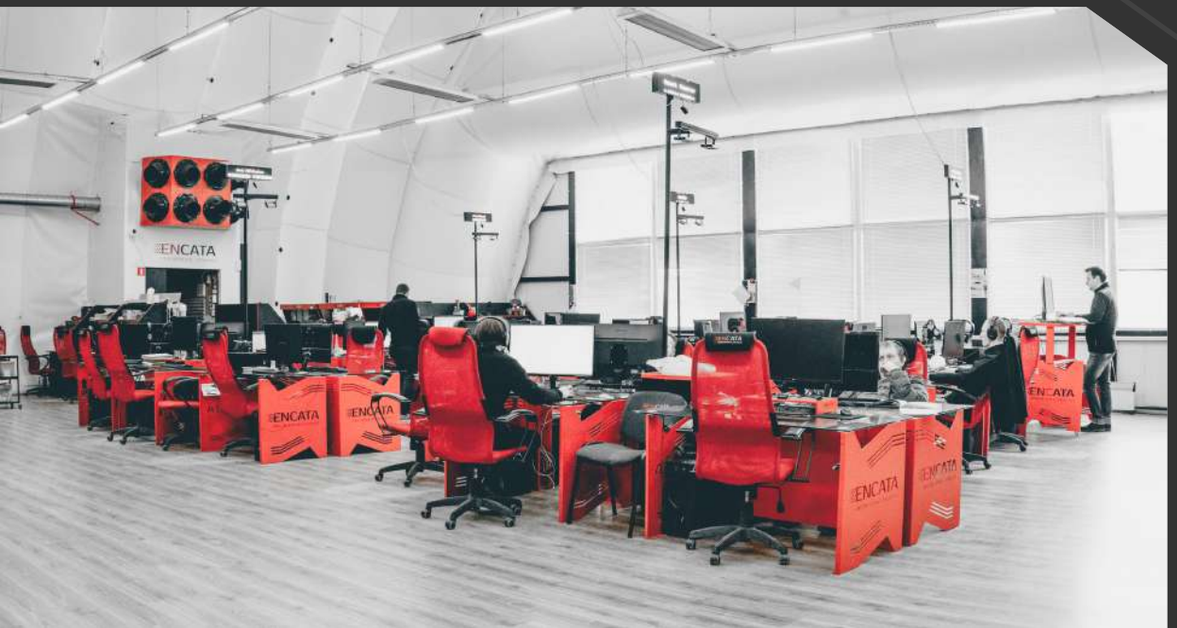
ENCATA

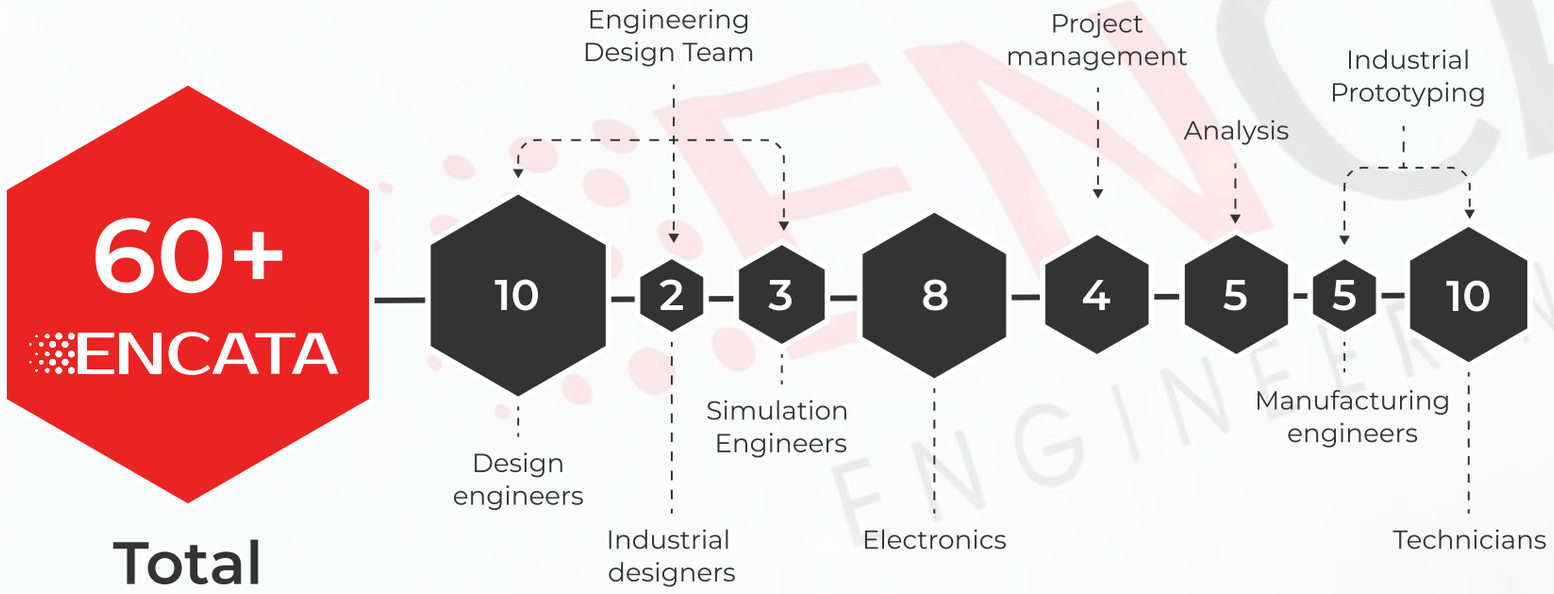
Engineering services and pilot-scale production

- Design hardware based on the Customer’s business vision
- Engineering consultancy at all product development stages
- Prototyping and pilot-scale production



- Engineering design - from your business idea to pilot batch
- Electronics design - PCB, firmaware, server backend
- FEA and CFD simulations
- In-house manufacturing - from 3D-printer to full 5-axis CNC machining

EnCata company in numbers



- EnCata was founded in 2006 as a product company. We specialized in industrial air purification equipment and electronic devices manufacturing.
- In 2017 EnCata became the member of Hi-Tech Park in Belarus and started providing engineering servicies.
- EnCata is structured in 7 different departments, whereby 5/7 are comprised of engineers
- Company employs 7 PhDs (Physics, Nanotech, Chemical Technology, Mech.Engineering)
- All the Project Managers have either BSc/BEng or MSc/MEng and were engineers in the past

Hardware products development and engineering services

EnCata helps meet the need for engineers at all stages of the product life cycle. We can speed up the project flow at times of peak load on your team or save you from a lot of stress and unnecessary money spend when it comes to reaching out to the manufacturers.

Our industrial design team transforms your ideas into engaging product concepts that are manufacturable. If your product is at the beginning of its journey, we make industrial design and renderings for pitch decks in front of investors. If you already have your first prototype, our team helps to improve it and amend the design for manufacturing. We could carry out different simulations of your technical system to obtain more data before prototyping.

Industrial design

- Design sketching
- Research analouges and competitors
- Ergonomics and special human factors
- 3D design and CAD modeling

Design for manufacturing (DFM)

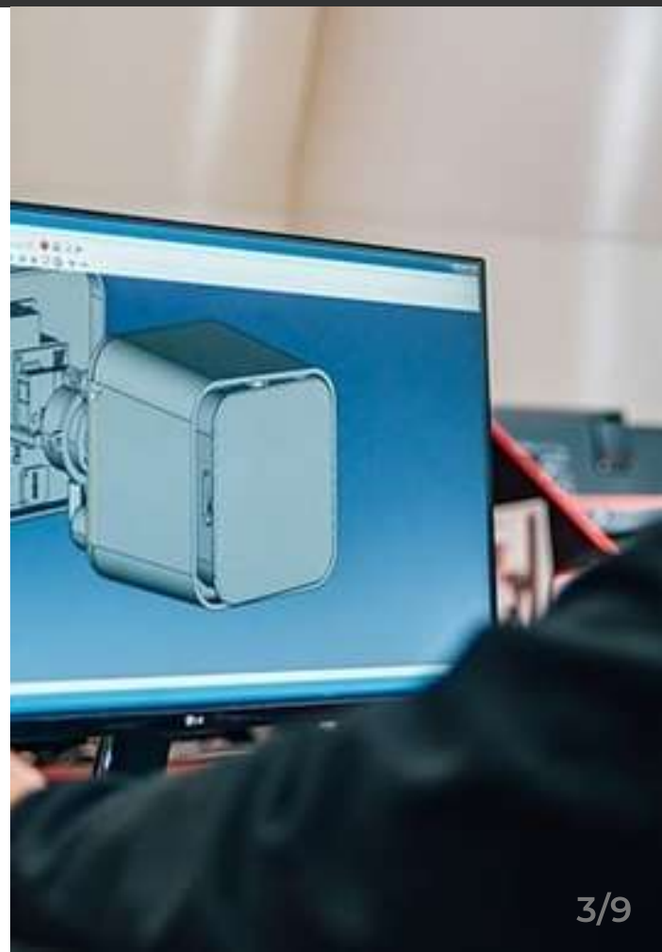
- Casings and plastic parts
- Test benches and production lines
- Injection molds and tooling
- Electrical cabinets, piping

Mechanical engineering

- Metal structures
- Drives, gearboxes and suspension units
- Pneumatics and hydraulics
- Electrical cabinets

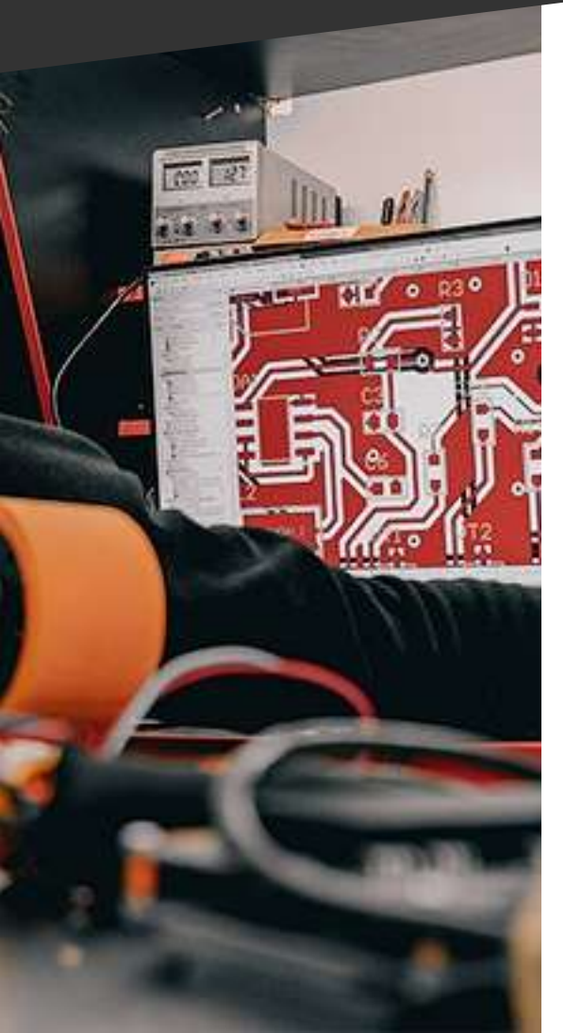
FEA and CFD simulations

- Heat exchange, boiling and crystalization
- Fluid dynamics: gases, liquids, smelts
- Strength and durability
- Waves and signals



Electronics, PCB and Firmware development

Our electronics team will develop a PCB to replace Arduino or Rapsbury Pi in your prototype if you need to estimate the real performance and cost of the product. We'll run a backend on the server and make a mobile app for the IoT product so you can sell the system to early adopters.



- Firmware and drivers (BSP) development
- Linux Embedded

- PID controllers
- Physical algorithms development

- Power electronics and IC design
- Battery chargers and battery management

- FPGA
- Chip programming
- 8/16/32 Microcontrollers

- Multilayer PCB development
- Flex-PCB design

- PLC / HMI programming
- Industrial PC software design

Equipment manufacturing / mounting / commissioning

Wireless Connectivity: WiFi, BT, BLE, NB-IoT, GPRS / GSM / 3G, GPS / LORA

Interfaces: USB, SPI/SSP, I2C, LVDS, RS232/485, SD/SDHC/MMC, Ethernet, PoE, 1-Wire, CAN, I2S, AC97

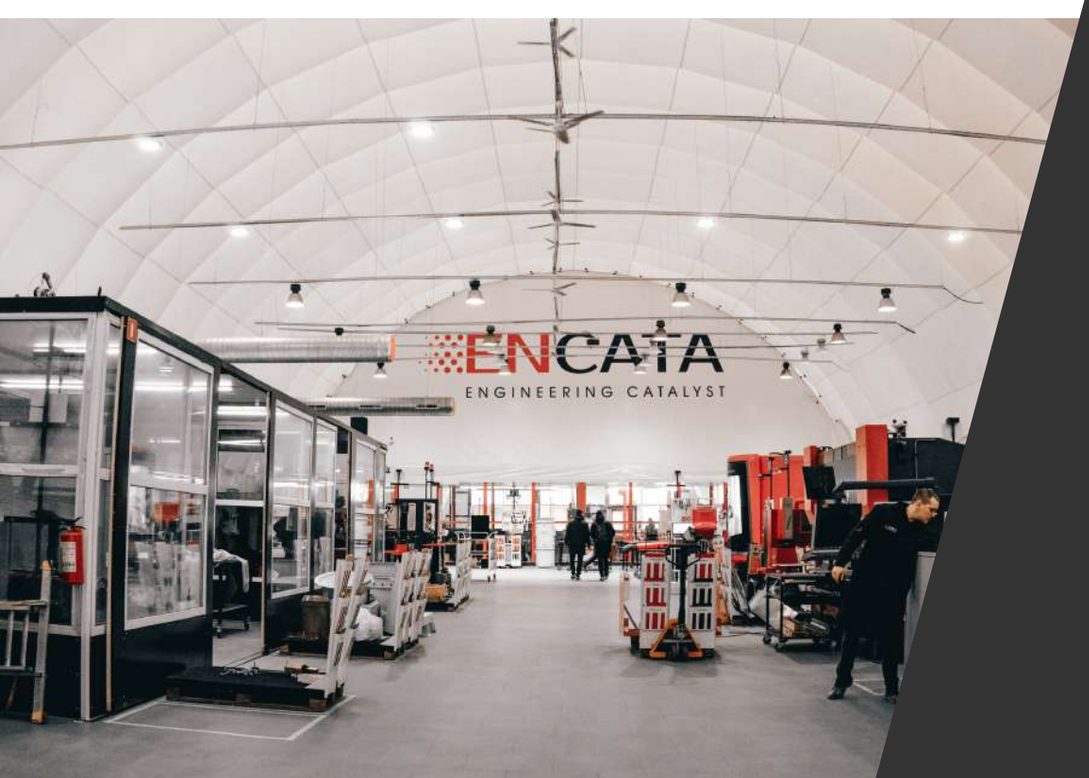
Programming Languages - C/C++/C#, VB.Net, ASM, VHDL/Verilog, MatLab, Mathematica

Manufacturing services

- rapid prototyping
- batch production

EnCata is somewhat unique in having **in-house prototyping and manufacturing facilities** in the same building with the design office.

It helps us test the ideas of the developers, so as not to leave the Client with a bundle of drawings in front of the factory gates. LEAN set-up allows faster time for prototype manufacturing, design validation and assembly, ensuring the design documentation is timely updated.



In-house manufacturing technologies

- CNC milling (3x, 5x)
- Metal Tube and Plastic Bending
- Water Jet (CNC)
- CNC lasers
- Injection Moulding
- CNC bending
- Composites and GRP
- Vacuum forming
- Polymer and Spray Coatings
- Tools and Jigs Manufacturing
- Annealing and Metal treatment
- Welding (MIG, TIG)

Industries we serve

EnCata has over 5 years of expertise in various domains
We took part in creation of 160+ products

All projects require signing the NDA.

In EnCata all the IP (intellectual property) that is being created during the project belongs to the Customer

Our Expenience since 2017

- **MECHANICAL DESIGN** +150 000 hours
- **ELECTRONCS DESIGN** +65 000 hours
- **SIMULATIONS** +20 000 hours
- **MANUFACTURING** +120 000 hours
- **PROJECT MANAGEMENT** +40 000 hours

Smart Agriculture

+4 200

Consumer & Wearables

+47 100

Medical devices & IoMT

+31 400

Robotics

+8 000

AR and VR

+8 800

Production lines

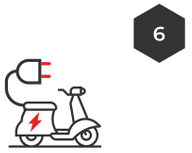
+17 200

Industrial automation

+18 700

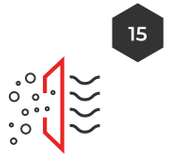
Aerospace

+10 200



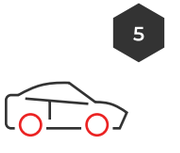
Electric Transport

+4 700



Air Filtration and Purification

+6 100

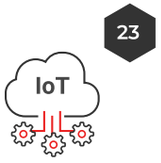


Automotive

+6 100

Construction

+65 000



IoT of Everything

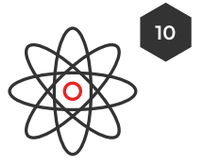
+21 400

Smart city

+35 300

Heavy industry

+7 700



Deep-tech & Science

+7 500

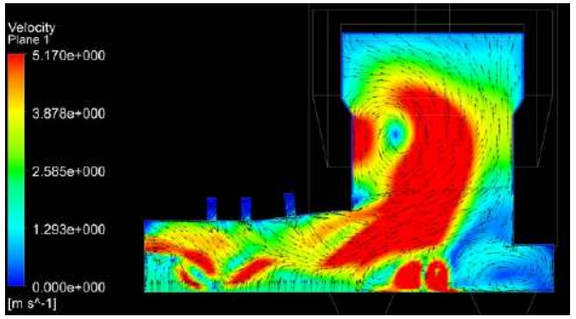
Clean Technologies

+2 100

Geolocation and Telecom

+6 300

Some featured projects



Copper Smelter project.

Multiphysics computer simulations project of the industrial copper smelter and it's engineering optimization for liquid phase bubbling of slags and fume exhaust system. The results were integrated into plant modernisation and dramatically reduced the smelter down-time.

Warehouse Robot

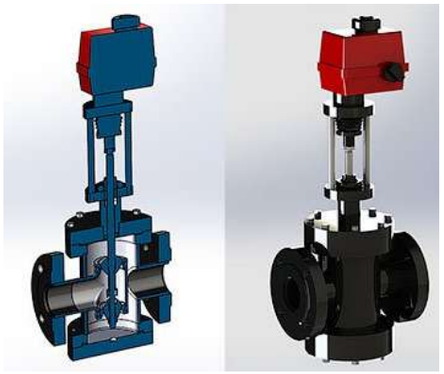
An autonomous warehouse robot project with 50 kg payload. Ther robot has IP-45 protection mark to operate both in-house and outside (temporarily).

EnCata refined the startup's initial concept and developed the industrial design, DFM and produced the prototype with all the documentation for further mass-production.

Autonomous Drone Hatch

A fully automated drone hatch for Arctic and desert environment. The hangar was designed and manufactured from scratch.

The hangar is equipped with the advanced drone positioning system, custom drone chargers and smart HVAC system.



IIoT hot water monitoring system.

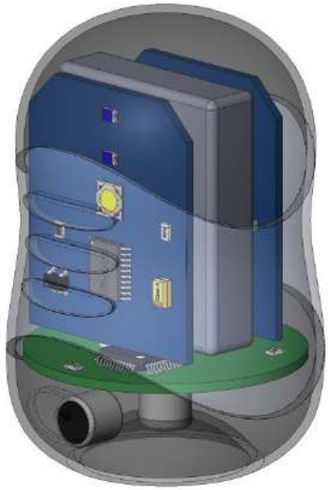
The R&D project in thermophysics, embedded algorithms, mechanical + electronics design with multiple on-site tests.

The final product controls, regulates, measures and monitors in real time thermal energy flow and hot water supply in industrial and residential heating system.

Some featured projects

Smart security locks. The lock was designed (hardware and software) to be accessible via electronic keypad, unique RFID card, NFC on a mobile phone, fob, or wristband;

All while complying with ADA guidelines. They also feature wireless capabilities on non-hardwire systems, making it the most versatile solution for locker security requirements in the market.



An IoMT stethoscope device for heart, respiratory systems and blood vessel diagnostics.

Machine learning technology uses a neural network for signal interpretation, accurate diagnostics, historic data gathering and comparative analysis.

Developed algorithms estimate cardiovascular risks in the process of auscultation, leading to prevention of various disorders.

Smart power nap and stress reduction pod. Designed from scratch in EnCata.

The pod is an advanced mechanical system with complex sensor hardware connected to a cloud-based AI/ML software providing unique experience to those who use the product.

The deep-tech algorithms help to analyze stress patterns among the employees at work.

Virtual Reality trainer for surgeons in healthcare industry.

The hardware simulator in combination with the VR software provides training for laparoscopic operations of any type.

The secret sauce is core technology that can be applied to training of astronauts or neurosurgeons.

ENCATA

We Make Things

EnCata.net

+9 (955)-553-448-23