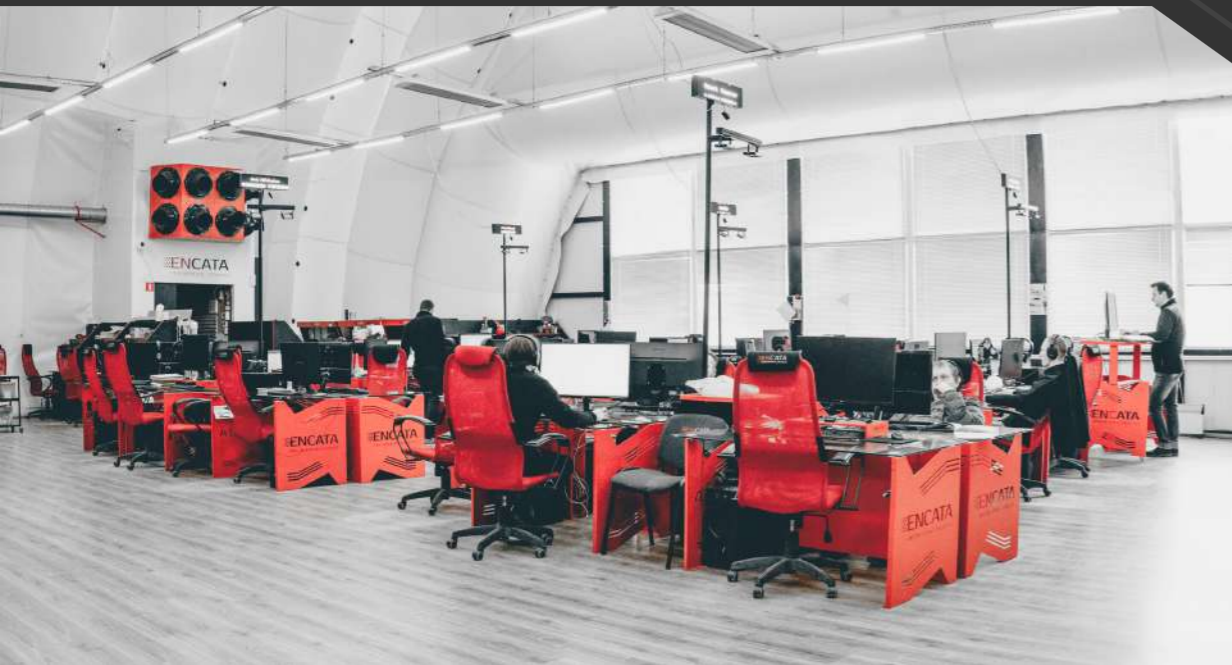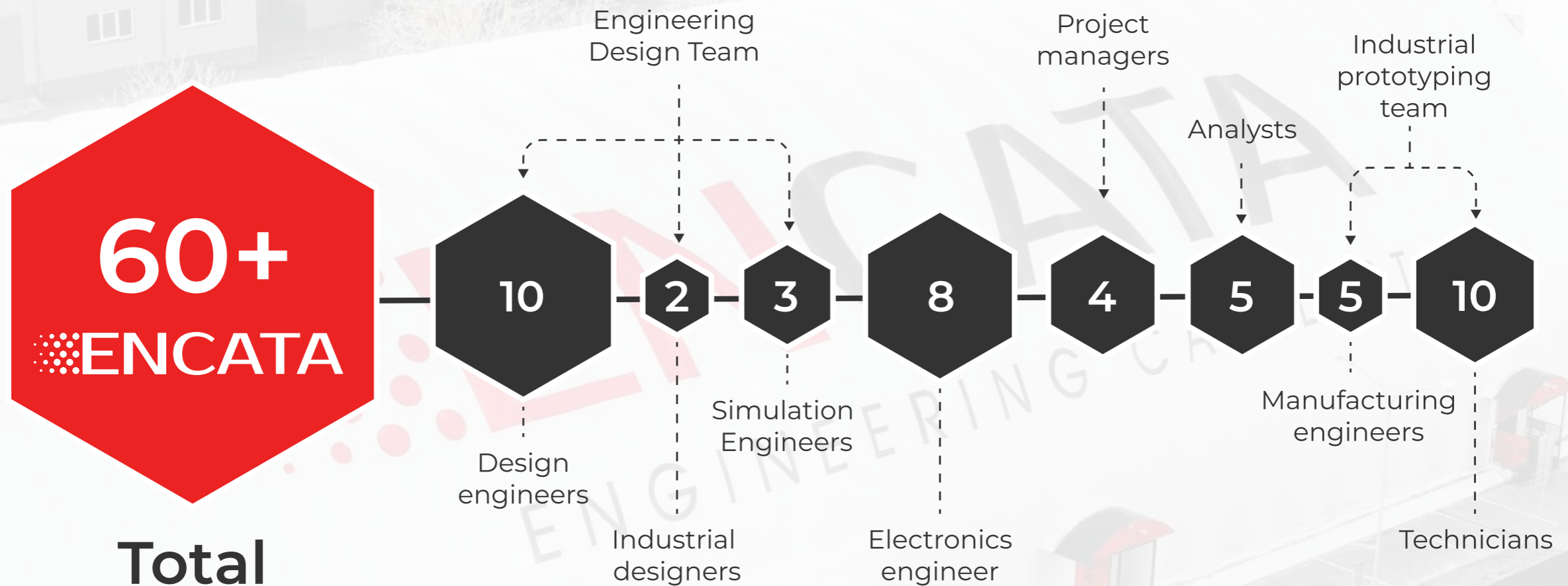# ENCATA

Engineering services and pilot-scale production

- ✓ Hardware design based on the Customer's business vision

- ✓ Engineering consultancy at all product development stages

- ✓ Prototyping and pilot-scale production

- ✓ Engineering and design services - from your business idea to pilot batch

- ✓ Electronics design - PCB, firmaware, server backend

- ✓ FEA and CFD simulations

- ✓ In-house manufacturing - from 3D-printing to full 5-axis CNC machining

EnCata company in numbers

60+
ENCATA
Total

10 Design engineers

2 Industrial designers

Engineering Design Team

3 Simulation Engineers

8 Electronics engineer

4 Project managers

5 Analysts

5 Manufacturing engineers

Industrial prototyping team

10 Technicians

- EnCata was founded in 2006 as a product company. It specialized in industrial air purification equipment and electronic devices manufacturing.

- In 2017 EnCata became the member of Hi-Tech Park in Belarus and began 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 have previously worked as engineers

Technology Readiness Levels (TRL) according to NASA

We are able to conduct R&D and deliver [business + technology] research services to our clients

TRL-1   IDEA: basic principles observed

TRL-2   Product or technology concept formulated

TRL-3   Applied / Lab research

TRL-4   Lab-scale prototype (proof of concept)

Design engineering and prototype development including design-2-manufacture

TRL-5   Sub-system prototypes. First tests in the required environment

TRL-6   α Prototype Tests. Performance is close to the expected

TRL-7   β Prototypes pass field tests. Pre-commercial demonstration

EnCata is capable of delivering batch production

TRL-8   DFM (design for manufacturing. Prototype improvements are finished, design documentation is drawn up and finalized

Batch production and Market tests

EnCata provides engineering consultancy services concerned in mass-production for China and Eastern Europe

TRL-9   Market launch. Mass production.

HUMIDIFIER

Personal desktop device for creating favorable living conditions at and around the workplace.

Functions: cleaning, humidification, aromatization, ionization (optional), cooling (optional) air. Filters and aromatizers must be included into the standard equipment.

The user can control it via a phone app. There are diodes (lights) and a power button on the front panel.

Operating time in humidifying mode: up to 8 hours
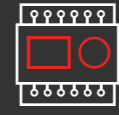
Dimensions: 123*123*223mm

Noise level: < 40 dB

ENCATA'S Role

Industrial design creating

Engineering documentation development

Prototype case making: laser printing, grinding and painting

Developing software for a mobile application

Technology readiness level

1 - - - → 9

TECHNOLOGIES

3D Modeling

C++/C#
High level programming language
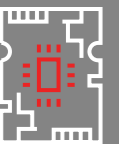
Prototypes of printed boards
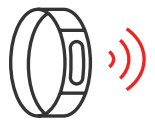
SMART BRACELET

If a person becomes ill, PAC Sputnik will monitor their vital signs and, if needed, will summon an ambulance. The device can save a person's life, when there is a high chance of recurrence after a heart attack or stroke.

An elderly person will also receive timely assistance, as Sputnik notifies doctors and relatives of health deterioration.

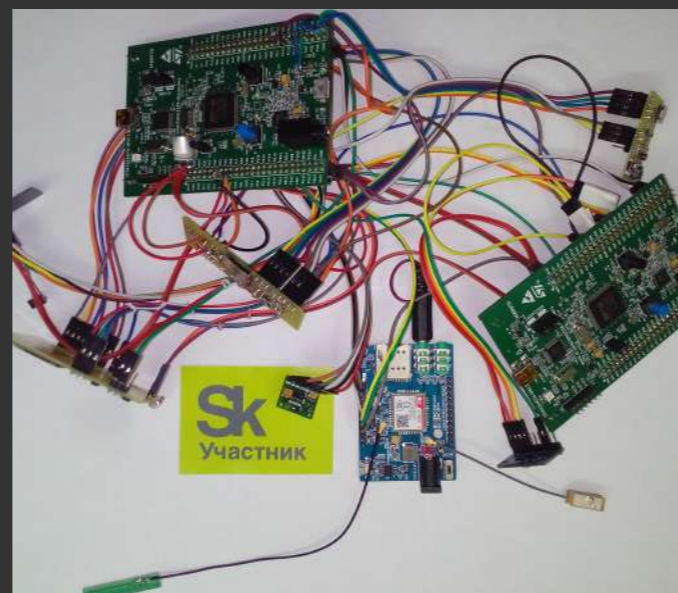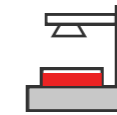The device is controlled via the web/application "Sputnik".

PAC dimensions (LxW): 7x5 cm.
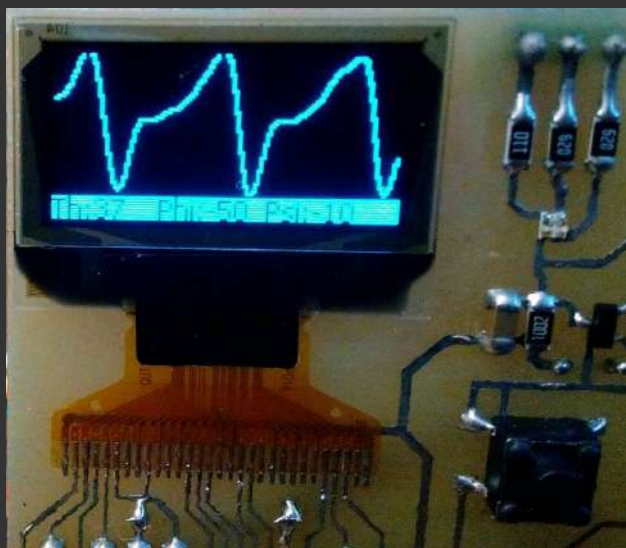
Operating time of the device: 1 month.

NOR Flash memory capacity: 256 MB

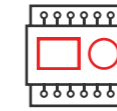Oled display resolution: 128x64 pixel
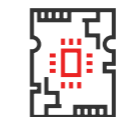
ENCATA'S Role

Industrial design making

Engineering documentation development

Prototype case making: laser printing, grinding and painting
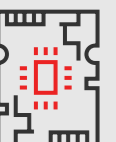
Developing software for a mobile application

Manufacturing multilayer and printed circuit boards

Technology readiness level

3 ----> 7

## TECHOLOGIES

C#

3G

Prototypes of printed boards

SMART PLUG

A precise dispensing device is required for real-time alcohol consumption, integration with automated systems and providing customer self-service functions in the establishment.

The device addresses the issue of cashless payments in establishments. For the client to pay for drinks, NFC technology is embedded. The procedure takes up no more than 5 seconds.

Convenience: one smartphone can replace one or more plastic cards.
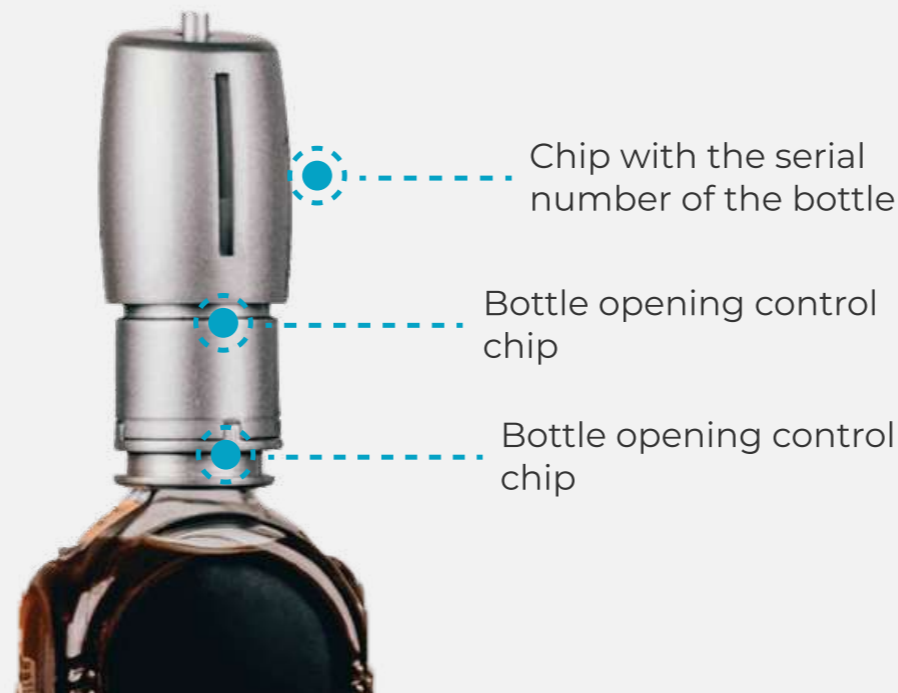
Chip with the serial number of the bottle

Bottle opening control chip

Bottle opening control chip
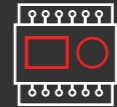
ENCATA'S Role

Industrial design making

Engineering documentation development

Prototype case making: laser printing, grinding and painting

Developing software for a mobile application

Technology readiness level

1 ----> 8

TECHNOLOGIES
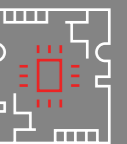
Injection molding

JAVA 11

NFC

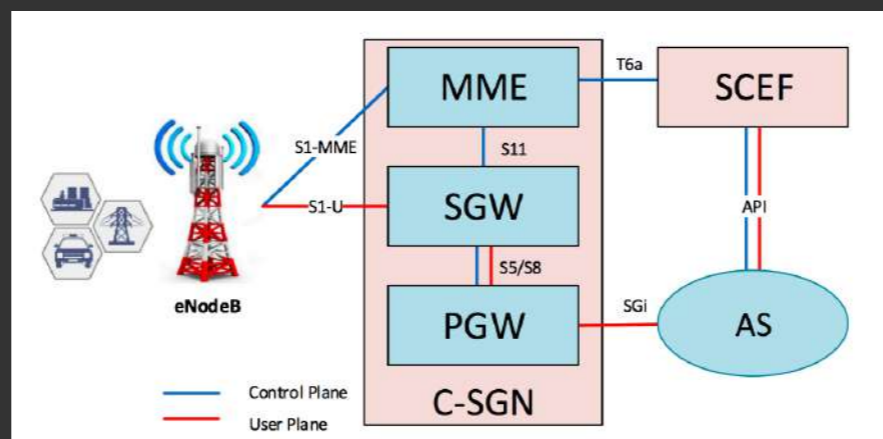Electronics design

RAT TRAP

The trap is designed to record and communicate information about the presence of rodents at the device's location. There is a rodent bait inside the trap. When a rat enters the trap, a sensor is activated, and a message is sent out with information on the trap's status and a counter of registered rodents. The device runs on the NB-IOT network,which provides a long battery run.

The device is controlled by a server. When a rodent is detected in the trap, the trap number is sent to the server.

Using NB-IOT technology
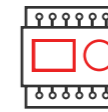
Device dimensions (LxWxDG):205x105x154 mm

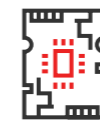Operating time: more than 1 year (using 6V 4 A4 batteries)

ENCATA'S Role

CAD Engineering documentation development

Developing software for a mobile application

Manufacturing multilayer and flexible printed circuit boards

Technology readiness level

1 ----> 5

TECHOLOGIES

PHP   NB-IoT   Electronics design

Zephyr LOCK

ENCATA'S Role

- **CAD** Engineering documentation development
- Prototype case making: laser printing, grinding and painting
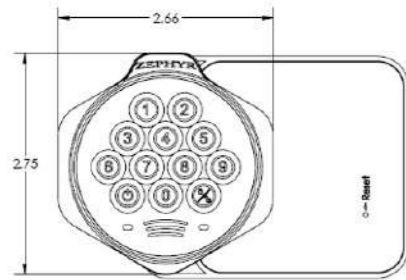- Developing software for a mobile application
- Multilayer and flexible printed circuit boards production
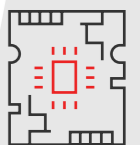
Zephyr Lock is a new electronic system for remote control of locks.
It can be done using a web interface or a mobile application. The lock can also be controlled by RF and NFC.
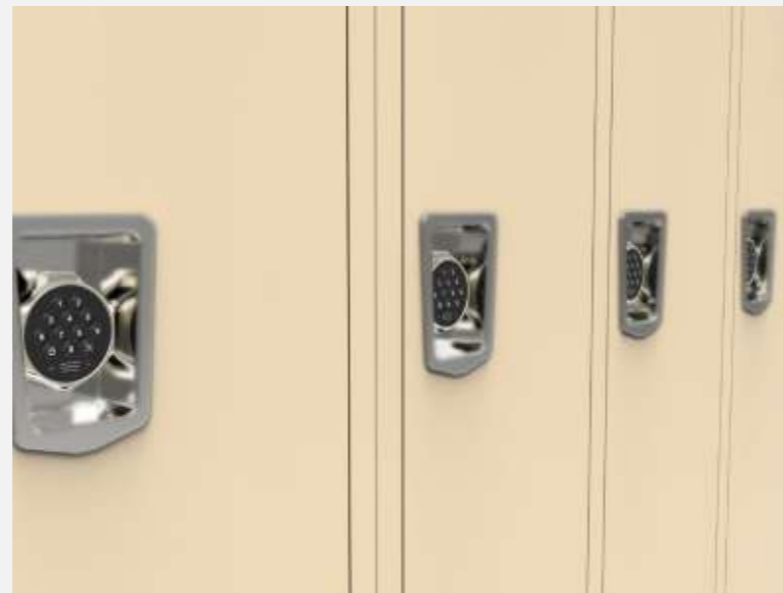To operate the lock, one might use RF or NFC.

The device is controlled via a web interface or mobile application.
The mobile app has been developed for iOS and Andriod.
The Desktop app communicates with the card reader and user card records.

Device operating time: from 6 months to 1 year (between battery changes).
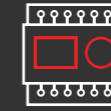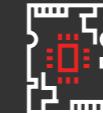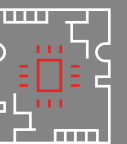
Device dimensions (LxW): 2.75x2.66 cm

Technology readiness level

2 SMART CITY — → **7**

TECHNOLOGIES

C# PHP NFC Electronics Design

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