English version

ROBONOMICS.NETWORK · ALMANAC №7 · 2024 >> 2025 ·

R0BO

#DePIN

#Robotics #IoT

BEGIN YOUR ADVENTURE IN THE WORLD OF CYBERPUNK

ROBO ALMANAC

Friends, here is the latest edition of our annual almanac!

The Almanac is a collection of the most significant events, ideas, and achievements that shape the vibrant and captivating story of Robonomics. Since the project's inception in 2015, our team has been steadily building a future where decentralized technologies and robotics become an integral part of our lives.

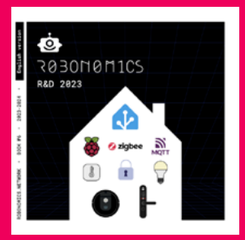
Since 2017, we have been summarizing each year in these publications, sharing the project's evolution, accomplishments, and inspiring ideas. These books capture the key moments of Robonomics' journey — from the first steps in connecting IoT and blockchain to implementing cutting-edge Web3 solutions.

Robonomics is an open-source platform for IoT applications that facilitates the exchange of technical and economic information through atomic transactions between user applications, IoT services, and advanced robotics.

WELCOME TO THE WORLD OF ROBONOMICS!

TOGETHER, WE ARE BUILDING THE HISTORY OF FUTURE TECHNOLOGIES!

2024-2025



2023-2024

2022

[Link to books >>]

2021

2018

2017

If you want to dive deeper and learn more about the Robonomics project, visit our website at robonomics.network and explore our publications.
This edition, along with previous books, is available in digital format and other languages for free download.

TODAY BY ROBO
HARDWARE FOR CYBERPUNKS

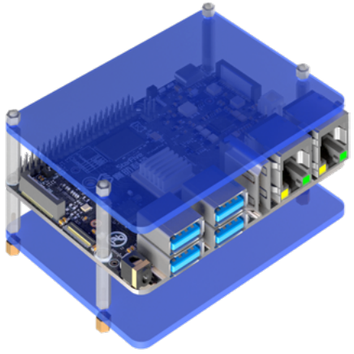
robonomics.network/devices >>

OUTDOOR SENSOR “ALTRUIST”

A smart sensor that collects environmental data and integrates it into a decentralized sensor map.

USE CASE:

With the Altruist Outdoor Sensor, you become a force in decentralized environmental monitoring. Capture noise, dust, and temperature data—encrypted, mapped, and shared across a distributed network.



HOME SERVER WITH WEB3 CLOUD

The first smart home server built entirely on open-source — from CPU to decentralized cloud.

USE CASE:

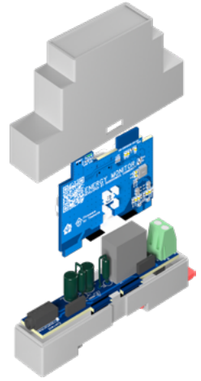
Take control of your smart home data with open server based on RISC-V processor. Connect 3,000+ devices and enjoy cryptographic access to all the functions of smart home via Robonomics corporate-free cloud.

SMART TAMAGOTCHI “HIKIKOMORI”

Hikikomori is a microcontroller development board designed to integrate with web3 systems.

USE CASE:

Hikikomori can sign extrinsics on Polkadot, managing its digital twin state. This can be your smart home tamagotchi, a gaming controller, an educational tool or anything you design!



ENERGY MONITOR

A non-invasive device designed for installation in electrical panels with DIN rail mounting.

USE CASE:

Energy Monitor tracks electricity consumption and generation. Its USB-C connection supports clean firmware installs, a secure and transparent alternative to the industry-standard wireless-only updates.

2015-2016

The first experiments and publications on using s**mart contracts on Ethereum** to control robots.

2016-2017

A period of active **R&D activities**, during which a range of tasks was identified where **P2P technologies**—combining Ethereum, **IPFS** file storage, and the **Robot Operating System (ROS)**—unlocked new possibilities for creating autonomous intelligent robot agents. This paved the way for concepts like **Robot-as-a-Service** and **the economy of robots.**

2017-2018

ROS

A protocol was developed for a decentralized network of providers supporting robot agents, featuring a communication stack between **Ethereum and Robot Operating System (ROS**.org).

The **Robonomics Whitepaper** was published,
Tthe alpha version of the Ethereum-based network

R&D **The team presented several major R&D demonstrations: a civilian sensor network, a water drone for environmental monitoring (supported by Libelium), a smart factory model, a revenue-generating robot artist, Gaka-chu,**

Preparations for XRT token generation continued.

IoT i4.0 Robonomics actively explored **Industry 4.0** applications, including **smart factories, cities**, and **homes**, drawing attention to the **Internet of Things (IoT)**.

The team also began collaborating with the DAO IPCI project on managing environmental assets using Web3 technologies and IoT devices.

2019-2020

During this period, Robonomics faced limitations with Ethereum and started exploring alternatives, eventually picking **Polkadot** ecosystem. Experimenting with **Substrate**, the team deployed a test network and prepared for launching a parachain in **Kusama**.

We developed the concept of the **Robonomics Web Services (RWS)** decentralized cloud for IoT and introduced an IoT subscription model. The RWS token was launched, enabling fee-free transactions.

Work with Ethereum also continued: the communication stack was updated, the **XRT token** began trading on several exchanges (including **Uniswap DEX**), a liquidity support program was launched.

DEX

Additionally, **DAPPs** and the Robonomics **WIKI**, were released, and **AragonDAO** was implemented for project management.

The first Robonomics Winter School was held.

The team continued collaborations, including projects with DAO IPCI for sensor data collection (**RoSeMAN**) and the development of a **smart leasing** system for robotic equipment.

2021

Robonomics focused on enabling **IoT applications** through a parachain in the **Kusama network.**

Robonomics 1.0 was released on **Substrate,** sensor integration was tested, and **digital twin** functions were developed.

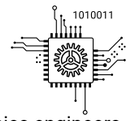
To test the full network cycle, a dedicated **relay chain, Robonomics Frontier**, was created prior to migrating to Kusama.

A significant effort was made to secure a parachain slot on Kusama, with several crowdloan campaigns organized.

The **Robonomics Grant Program** was launched to provide funding for projects in robotics, Web3, and IoT, supporting four projects during the year.

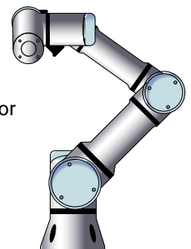
The Exodus process began, enabling Ethereum token holders to transfer their **XRT** tokens to the parachain.

Among the collaborations, **Boston Dynamics' Spot** robot was procured for our lab, featuring a remote control rental system.



MULTI-AGENT

Additionally, Robonomics engineers founded **Multi-Agent Systems**, which developed **Eisenkoch**, a robotic chef for cafes.



2022

At the beginning of the year, Robonomics won the 20th parachain auction and became parachain **ID 2048 on the Kusama** network.

#PARACHAIN

Several key features were made available to users, including

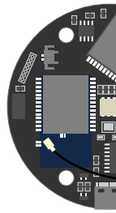
`launch`, `datalog`, `DigitalTwin`, `liability` and `IoT subscriptions`

Robonomics 2.0 on Substrate was released, featuring support for XCM messages and the opening of HRMP channels with parachains such as **Crust Shadow** and **Darwinia**.

The first chapters of **Robonomics Whitepaper 2.0** were published.

#SMARTHOME

The team introduced the concept of a **sovereign smart home**, independent of centralized cloud providers. Integrations with **Home Assistant** were developed, along with a proprietary **IoT gateway** for connecting smart devices.



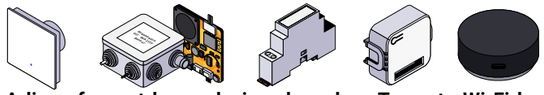
Two initiatives were launched to enhance community engagement: the **Robonomics Academy** and **the Robonomics Ambassador Program.**

In the fall, the **Robonomics Town Hall** was held to test governance mechanisms.

The team also supported the DAO IPCI project in securing a parachain slot to launch a carbon offset service for smart buildings.

2023-2024

The team has new skills in designing and manufacturing smart devices from scratch.



A line of smart home devices based on Tasmota Wi-Fi has been developed, and since the summer of 2024, this product line has been undergoing certification for the European market.

sensors.social - a network has been established where test devices developed by Robonomics engineers are operational.

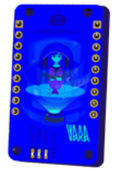
The Robonomics parachain was launched on the Polkadot network,
unlocking new opportunities for integration with other projects in the Polkadot ecosystem.

The Robojam event was held to celebrate the launch on Polkadot, showcasing the platform's capabilities through open solutions based on RISC-V architecture.

The team is set to introduce a brand of open hardware powered by Web3 technologies under the name

HARDWARE FOR CYBERPUNKS

Presentation of the updated version of the Hikikomori device, a development board with a microcontroller designed for integration with Web3 systems. It connects to the **Robonomics** and **Vara** ecosystems to enhance security and privacy.



Participation in 2024 events featuring demonstrations of a Web3 smart home and Open Hardware DePIN and robotics devices.

#Events

Polkadot Sub0 / Bangkok 2024,

WebZero / Brussels, EU 2024,

Polkadot Decoded / Brussels, EU 2024 ,

Web3 Summit / Berlin, EU 2024,

Consensus / Austin TX 2024,

Polkadot Sub0 Reset / Bangkok 2024

Devcon / Bangkok 2024

Edge Esmeralda / Healdsburg, CA

Funding the commons / Berkeley, CA

Polkadot SF meetups / San Francisco, CA

#Hackathons

Berkeley Hackathon (Cal Hacks) / San Francisco, CA hackberkeley.org

Consensus 2024 Hackathon / Austin TX consensus2024.coindesk.com/agenda/

Robo Hackathon at Circuit Launch / Oakland, CA circuitlaunch.com

RoboAI hackathon at AGI House / Hillsborough, CA agihouse.ai

Stanford Hackathon (Tree Hacks) / Stanford, CA www.treehacks.com

Focus on Polkadot

Robonomics is considering to end development on Ethereum network. Following the publication of the Ethereum roadmap, it was proposed to focus efforts exclusively on implementing Robonomics within the Polkadot ecosystem, concluding work with Ethereum after the activation of Hyperbridge. By 2025, the project's focus on Polkadot is viewed as its sole strategic direction.

Learn more from our post on X

G.E.C.K.

Work on the ambitious G.E.C.K. project in Bali is ongoing. The goal is to create a fully functional server to manage an autonomous home in the off-the-grid setting. We are helping our friends set up a solar farm, automate water supply, and build a sensor network to manage agricultural tasks on one hectare of land.

News from Cyprus

The smart home integrator Pinout has expanded to Paphos, adding new projects to its portfolio alongside existing ones in Limassol! By 2025, families in Cyprus will live in homes where comfort is ensured by open technologies integrated with Web3 clouds.

2025>>

In 2025, we will continue to highlight

#OPENHARDWARE
#DEPIN
#SMARTHOME
#ROBOTICS

showcasing how merging decentralized clouds and smart devices can shift the paradigm of interaction between the physical and digital worlds toward greater security and independence.

THE EVOLUTION OF ROBONOMICS' TECHNOLOGICAL BASE:

Technologies, Robots, and Devices connected and utilized in the ecosystem in 2024.

ROBONOMICS HARDWARE

Surveillance-free smart home devices

FEECC

Decentralized system for collecting manufacturing data

Polkadot

KUSAMA

IPFS

CRUST

Home Assistant

zigbee

ROS 2

libp2p

TASMOTA

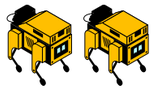
RISC-V

ESPRESSIF

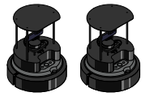
OUR ROBOTS

JOHNNYB'S LAB

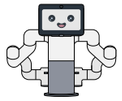
Robotics Labs with Cyprus and Silicon Valley locations



MINI PUPPER



TURTLEBOT 4



MYBUDDY 280

BOSTON DYNAMICS SPOT

UNITREE G1 HUMANOID

USE ROBONOMICS

WIKI

Learn Robonomics through tutorials and practically useful experimenting.
wiki.robonomics.network

DAPP

Connect your IoT devices.
robonomics.app

LEARN

ACADEMY

Developers share their experience working with Web3.
robonomics.academy

JOHNNY - DIGITAL TUTOR

A Robonomics tutor unveiling trends in robotics, IoT, and Web3.
x.com/johnnyb_tutor

ENJOY ROBOxART

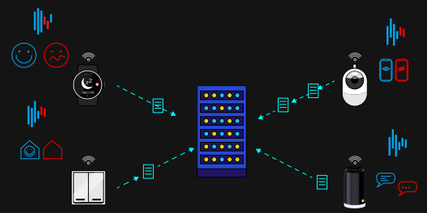
ART with Web3 Pass

MERCH

WALLPAPERS

LAYING THE FOUNDATION:
RESEARCH IN THE FIELD OF HARDWARE

The Robonomics team conducted a comprehensive study focusing on the privacy issues of smart homes, hardware technologies, and DePIN. During the analysis, we identified key shortcomings in existing approaches and used these insights to develop our own unique solution.



Smart home and device users are concerned about a number of critical issues related to the security and privacy of their data:

VENDOR DEPENDENCY:
Users cannot transfer their data when switching platforms.

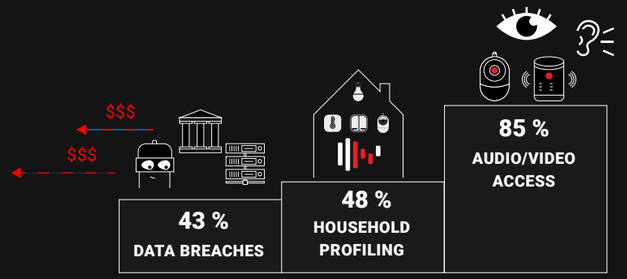
LACK OF CONTROL:
There are often no comprehensive interfaces for managing devices.

IMPLICIT DATA COLLECTION:
Devices continue to collect data without notifying users.

DATA MANIPULATION:
Collected data can be used for profiling and manipulating user behavior.

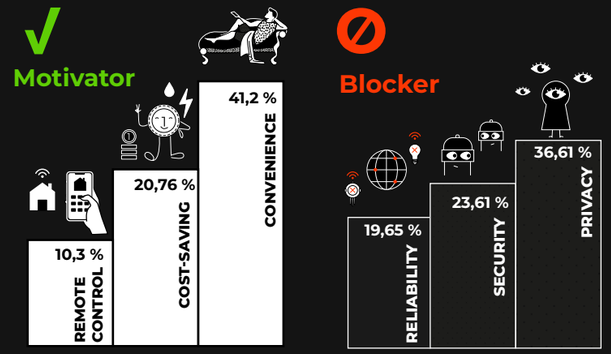
PRIVACY VS. SECURITY:
Privacy is often sacrificed for security, infringing on user rights.

LOW PROTECTION STANDARDS:
Devices are not always initially designed with privacy protection in mind.



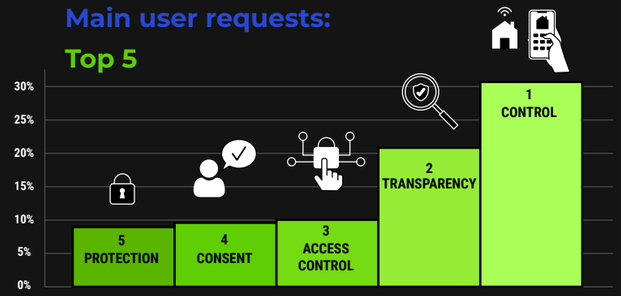
FEARS

43% of users expressed fears related to data leaks and the sale of their information to third parties. 48% worry that data from smart devices could be used to profile their lives and homes, while 85% of respondents identified device access to audio and video recordings as their greatest fear.



MOTIVATORS AND BLOCKERS

Among the top three motivators for purchasing smart home devices, users cited having control over their devices and data, cost savings, and ease of use. Conversely, security and privacy issues were named as the main blockers for making such purchases.



FUNCTIONALITY

As for user requests regarding functionality, the top five priorities are as follows:

- About 10% request features like data protection, consent for data collection, and access control to devices.
- 20% demand transparency in the operation of devices and their associated services.
- 30% of respondents expect clear interfaces for managing devices and their data.

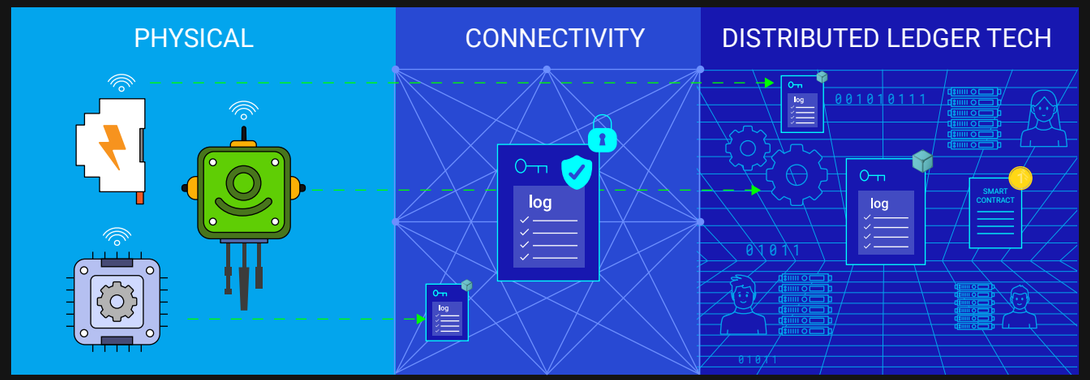
#DEPIN

DECENTRALIZED PHYSICAL INFRASTRUCTURE NETWORKS

connect physical things like devices and robots to decentralized digital systems.

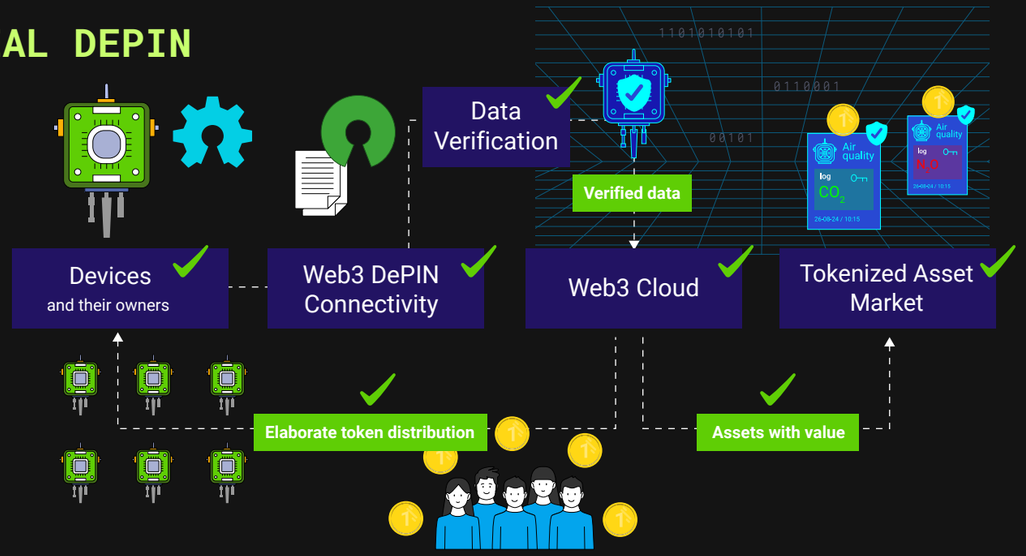
True DePIN should rely on three key pillars:
1) devices built with open and transparent designs;
2) reliable peer-to-peer connections that don't need middlemen;
3) decentralized systems for storage, computing, and governance that don't depend on big cloud providers.

In 2024, we delivered true DePIN implementation of Robonomics Network on Polkadot by connecting devices to a decentralized cloud directly.

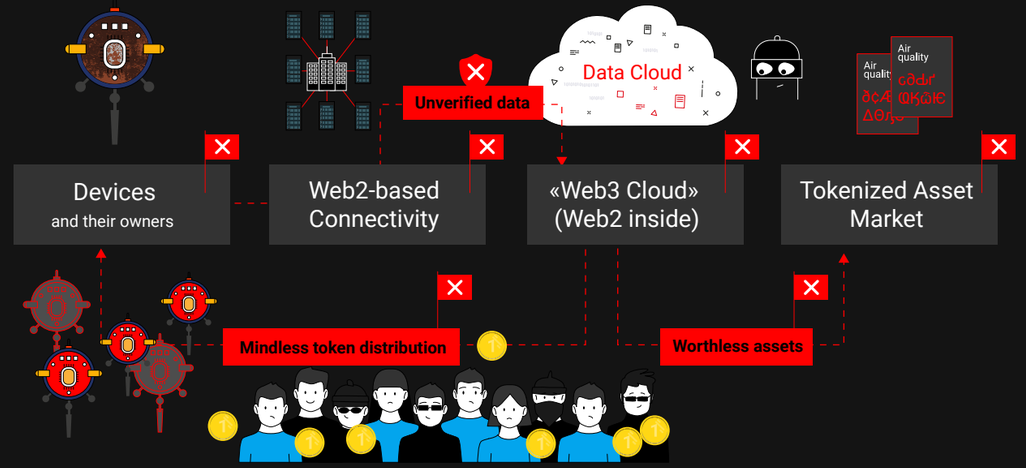


Learn more in the video >>
«Red Flags of DePIN» from JohnnyB

REAL DEPIN



FAKE DEPIN



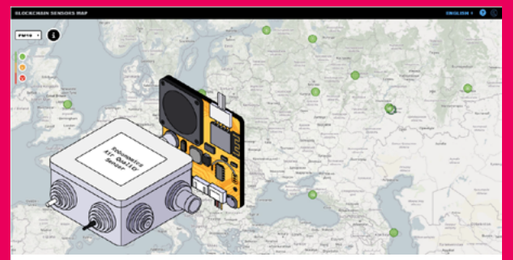
ROBONOMICS HARDWARE

Robonomics has always been a project about hardware. For us, blockchain became the technology that enabled real devices to become fully-fledged economic agents, capable of utilizing financial assets to make changes in the real world. Since the first drone flight launched by a smart contract in 2016, we have consistently focused on real devices — sensors and robots that perceive the world around them and can act upon it.

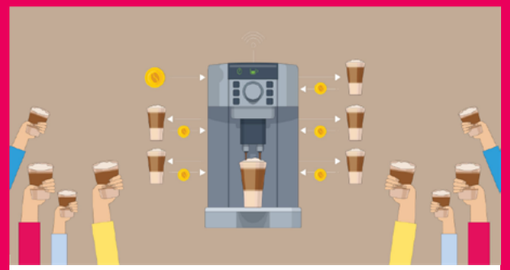
Adhering to the principles of the open-source movement, we strive to make our hardware projects as open as possible. The blueprints of all the devices we develop are published under open licenses, accessible to everyone.

How the devices were created, how open hardware ideas were brought to life, and what decisions we made along the way — read about it all in the full article >>

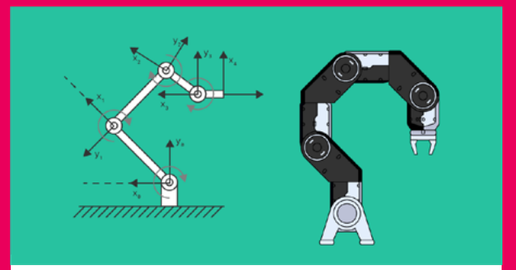
2020 — 2021 — 2021 — 2022 — 2025>>



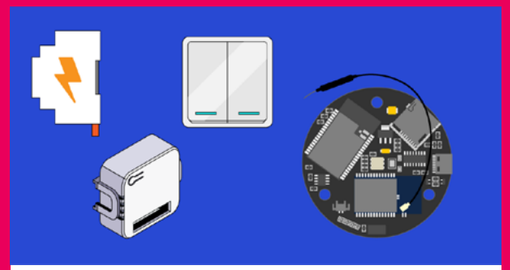
CIVIC SENSOR NETWORK (2020):
In April 2020, the Civic Sensor Network project was launched, featuring the development of a DApp for displaying sensors on a world map. In August 2021, work began on an air quality sensor, which led to the creation of the «Altruist» civic monitoring station. This station collects environmental data and stores it in a decentralized cloud.



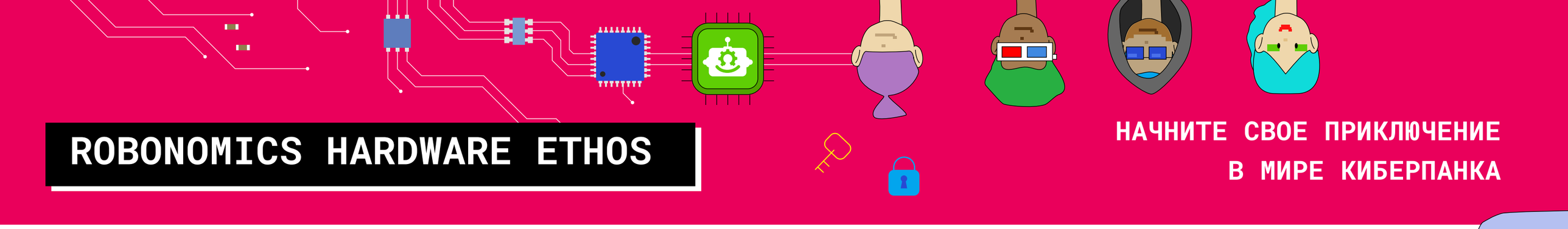
TOKENIZED COFFEE MACHINE:
In October 2021, a blockchain-connected coffee machine was introduced, showcasing the potential of integrating household appliances with web3 technologies. The project included a lightweight Robonomics node on a single-board computer and the issuance of coffee tokens on the Statemine parachain.



DIY AND INDUSTRIAL ROBOTICS:
In early 2021, the Robossembler project was launched with the goal of creating an open-source robotic manipulator capable of self-assembly. A custom servo drive and an automatic stator winding machine were developed, streamlining the assembly and manufacturing process.



SMART HOME DEVICES:
In 2022, the development of secure and private web3-based smart home solutions began. Wireless devices compatible with the Robonomics decentralized cloud were created, including switches, an infrared remote control, and energy monitoring systems.



ROBONOMICS HARDWARE ETHOS

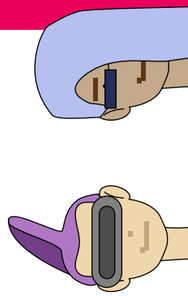
НАЧНИТЕ СВОЕ ПРИКЛЮЧЕНИЕ
В МИРЕ КИБЕРПАНКА

If you reject a world where big corporations collect and manipulate your data, where private moments become commodities, and where freedom is an illusion as devices monitor your every move, then you are part of a new movement. You value independence, freedom of choice, and the safeguarding of personal data. Today, as technology becomes essential to daily life, the fear of losing control over it grows stronger.

As the number of smart devices grows over the next five years, the idea of disconnecting from the «digital umbilical cord» of corporate clouds might seem impossible. But the engineers at Robonomics know how to guide you toward a self-governing digital life—one where technology serves you, not the other way around. This vision empowers individuals to reclaim control over their digital lives, ensuring their tools respect privacy, autonomy, and choice.

Imagine a decentralized world where you hold the keys to your data and identity. In this vision, freedom, privacy, and autonomy are not ideals but tangible realities. Here, you are not dependent on corporations but empowered to shape your own future. Together, we can build a world where technology aligns with your values, not against them.

FREE YOURSELF FROM CONTROL AND MANIPULATION — BECOME PART OF A NEW, LIBERATED FUTURE!



OUR VALUES

PURE OPEN SOURCE

Our devices are designed for total transparency. Every product comes with open RISC-V processor, open-source code and circuit schematics, and local update instructions—no need for cloud connections. You're empowered to understand, customize, and trust your technology from the ground up.

LOCAL AND GLOBAL AVAILABILITY

The combination of P2P communication and web3 cloud guarantees that your devices will always be connected. No internet access? You can still connect directly to the device. Moving to a new region or going on vacation? Your devices will stay online and accessible wherever you are.

PRIVACY BY DESIGN

By utilizing open source, P2P, and Web3, there's no room for corporate tricks, ensuring your personal data is protected. All information is stored either locally or encrypted with your personal key in the Web3 cloud.

G.E.C.K.

PROJECT

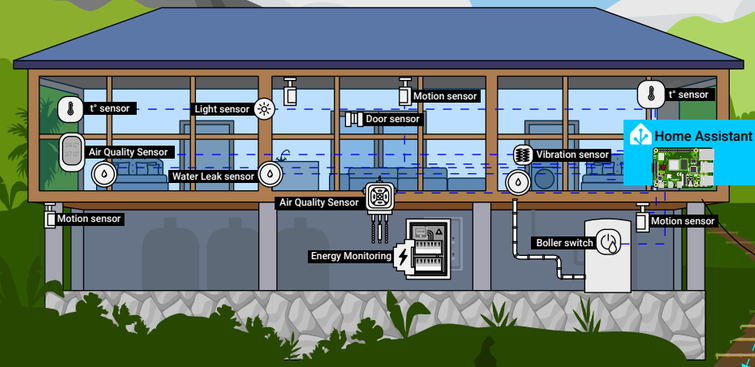
EXPERIMENT IN BALI,
MARCH 2024

In the past two years, there has been a growing trend in digital nomad lifestyle and the concept of network states. Inspired by this trend, we launched the GECK: autonomous homes managed through Web3 using NFT access tokens. Our vision is to integrate the physical world with the Web3 ecosystem, enabling the crypto community to create new forms of network states and interact with reality through digital technologies.

As part of the project, we have already conducted field trials in the jungles of Bali, where an autonomous village is being built, and developed the first versions of a smart home device kit. These devices include systems for air quality monitoring, energy management, security, and task automation. We have also developed a concept where each home can be managed using NFT tokens, giving owners complete control of their smart homes through Web3.

This project represents a significant step toward creating new forms of interaction in a digital society, merging real-world objects with virtual technologies. With the launch of the first version of GECK in 2024, we are ready to provide a convenient solution for integrating the physical world into the Web3 ecosystem.

Read more in the article
«G.E.C.K. Project: Motivation for Implementation and the First R&D Report»
>>

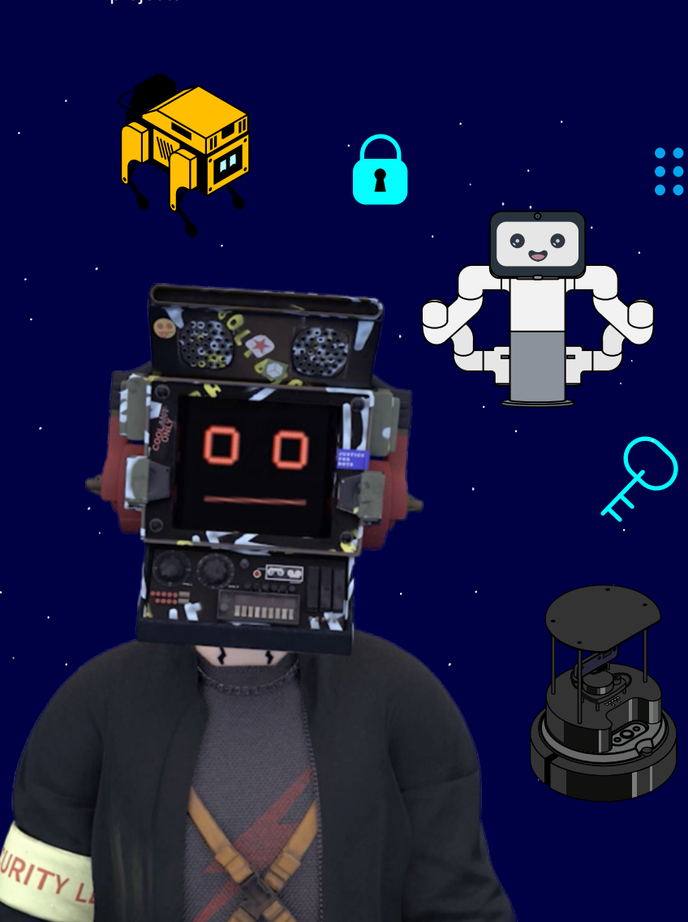


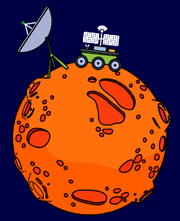
carrot house
Cyber valley

G.E.C.K. R&D project:
autonomous crypto punk house
experiment in Bali, March 2024

JOHNNYB'S LAB

In early 2024, JohnnyB's Lab, the robotics wing of Robonomics, began operating in Cyprus.
The goal of the lab is to develop Web3 tools for roboticists and demonstrate the capabilities of a decentralized cloud in typical robot and their system tasks. The lab primarily focuses on ROS-compatible robotics, and in particular is engaged in an R&D project to create ROS middleware on the Libp2p protocol and the entire technology stack required for it. In addition, the lab publishes educational materials that will be of interest to engineers looking for new technologies for their robotics projects.





JOHNNYB TUTOR LECTURES:

- **Privacy Insights for Smart Homes**
- **Interactions in a Multi-Agent System on Example the Hack Johnny's Lab Quest**
- **What is real in DePIN Series**

Все видео >>
Robonomcis Notes from JohnnyB

x.com/johnnyb_tutor

DEVELOPMENT:

- **Robonomics ROS 2 Wrapper** — Python packages with wrapper of Robonomics parachain functions for Robot Operating System 2. Available features — launch, datalog, usage of Robonomics subscription, robot's logs storage with IPFS and Pinata, file encryption and decryption. Status: version v3.1.0 is released.
- **Substrate interface with SCALE codec support in C++** — the module to natively access chain storage directly from ESP-based microcontrollers and rclcpp-based robots. Available features — serialization, deserialization, metadata support. Status: in active development, SCALE encoding is complete.

ROBOT INTEGRATIONS WITH ROBONOMICS:

- **TurtleBot 4** — mobile wheeled robot platform with machine vision by Clearpath Robotics. Added support for Robonomics ROS 2 wrapper.
- **myBuddy 280** — 13-DOF dual-arm collaborative robot by Elephant Robotics. Added support for Robonomics ROS 2 wrapper + improved ROS 2 support for robot driver.
- **Mini Pupper v1** — 4-legged robot dog by MangDang. Added support for Robonomics ROS 2 wrapper.
- **Mini Pupper v2** — improved version of 4-legged robot dog by MangDang. Added support for Robonomics ROS 2 wrapper.

R&D PROJECTS:

- Data Harvester — a mobile robotic platform packed with sensors, which is designed to collect secure information about the indoor environment and present it in a user-friendly format. Field tested in an office space in Paphos, Cyprus

Read more >>

DEMOS:

- **Smart Home Alone in Rust** — creating a digital twin between a virtual base in the Rust videogame and a LEGO house equipped with smart switches.

x от @berman_ivan >>

- **Hack Johnny's Lab** — the quest where users should restore the seed phrase from the data of the mobile robot, that moves around the laboratory and records video with hints.

Read more >>

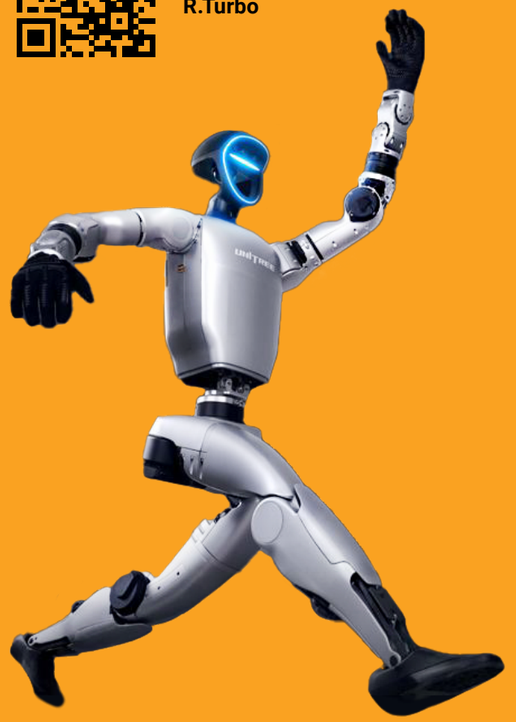
- **Robojam** — launch multiple robots simultaneously using a launch transaction via a parachain in Polkadot.

Read more >>

OTABERU

This year, we've released a new open-source dev tool for network management in robotics systems. Developers can use it to connect robots over P2P network to manage data and CI/CD pipelines. This tool will be used to access our fleet of robots in the Johnnyb's Lab, including the latest addition - a humanoid robot named Turbo!

R.Turbo



The team at Merklebot has initially contributed the open-source agent with basic libp2p functionality after completing a client pilot project. We continued to explore the functionality of the agent on hackathons in the San Francisco Bay Area, allowing people to deploy Docker containers to our Boston Dynamics robot. From students at UC Berkeley and Stanford University to experienced hackers in communities like Circuit Launch and AGI House - we've seen some incredible use cases in inspections, search & rescue, emotional support and many more. Most importantly, we've demonstrated how to organize secure access to robotics fleets in unstructured and dynamics environments.

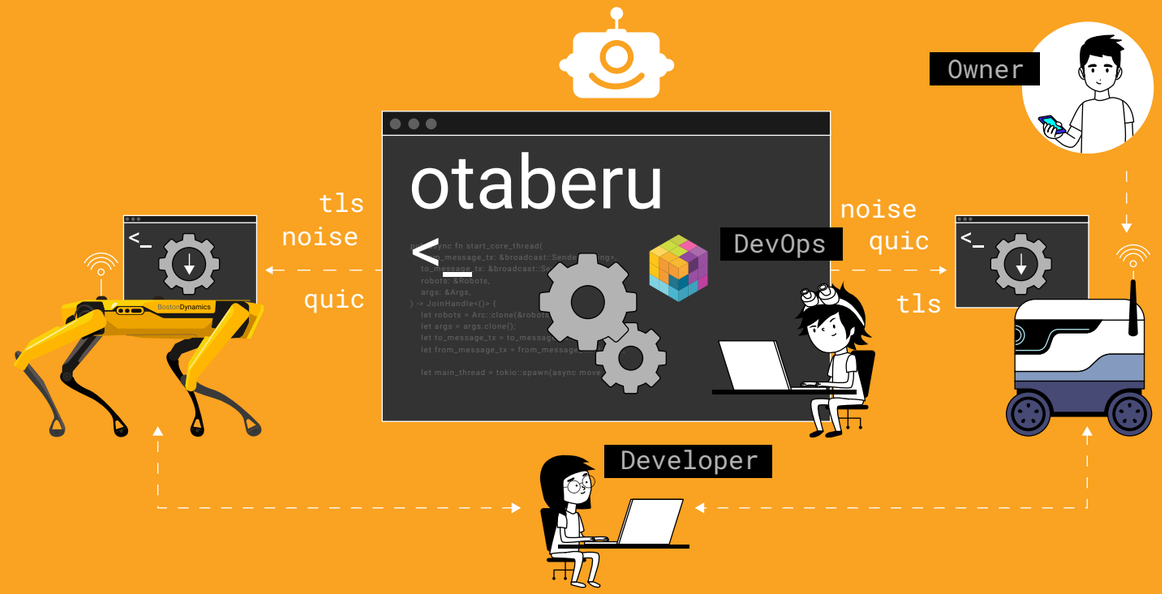
@vitl2907

As we continue to build ways to enable web3 tech stack developer exerience for robotics smoother. In addition to resilient P2P connectivity, we now have web UI to manage devices and built-in encryption to protect your data.

Otaberu - open-source tool to manage P2P networks for edge devices and robotics
<< Blog ROBO

Start using Otaberu to manage a fleet of your devices over libp2p here:

gitlab
airalab/otaberu
>>



ROBOSSEMBLER

Launched in 2020 with the Robonomics grant program, the Robossembler project aimed to rethink the entire technological chain of industrial robot production to bring the era of self-replicating machines closer. This required unique design solutions for the motor, gearbox, and the robot itself, all optimized for 3D printing. By 2024, many of these solutions have been tested and made available to the public.

An outrunner servo motor with an original controller was tested. Instead of complex stators made from electrical steel, standard DIN screws were used as the magnetic core. The mechanical parts of the rotor and stator can be manufactured using a 3D printer and assembled without specialized tools.

To enable self-manufacturing of the motor, the Robossembler team developed an ultra-low-cost machine for automatic stator winding, priced at approximately $150. Currently, this is the world's first open-source winding machine. While it is not designed for high-speed stator production 24/7/365, it is perfectly suitable for producing a few hundred electric motors for a local manufacturing workshop!

To ensure the required torque, various gearbox models were developed and tested. The final choice was an original precessing gearbox with a gear ratio of 1:43. Like all other components of the robot, it is designed for easy assembly.
Based on the motors and gearboxes we developed, the Robossembler Arm is being created — the world's first open-source 7-axis robotic manipulator completely free of metal fasteners.

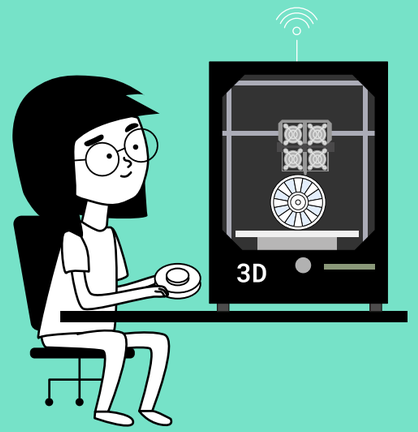
Robossembler Dev Report #1
Blog ROBO >>

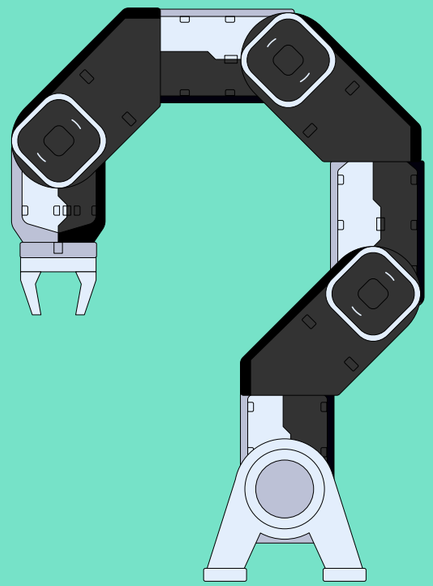
In addition to hardware modules, our team is also developing software for managing Robossembler robotic systems. This includes a suite of ROS 2 packages that combine classical control methods with reinforcement learning-based skills, enabling a wide range of control tasks without compromising reliability.

In 2025, we have ambitious plans: to release a new version of the gripping device, implement a GCode generator for the winding machine, fully automate stator winding, assemble the robotic manipulator, and test it alongside the complete software suite using an advanced learning-from-demonstration method.

robossembler.org >>

ROS 2





DRONE SELFIE

Drone Selfie is an innovative solution for mass production of personalized photo and video content in the entertainment industry. Since 2018, the Drone Selfie team has been developing a product that combines Web3 technologies, drones, action cameras, and AI analytics. This approach enables the creation of professional media packages, helping users preserve vivid emotions and share them with friends.

The project's mission is to modernize the creation and management of personal media by providing amusement park guests with professionally edited videos and photos, securely stored in a cloud environment.

What makes the project unique:

AI Analytics: Automatic selection of the best moments and one-click video script generation.

Camera Integration: Support for drones, 360 cameras, and other devices to capture unique perspectives.

Web3 and Cloud Technologies: Secure data storage using modern standards

Key Achievements:

Drone Selfie makes emotions accessible, reproducible, and enduring, offering clients a unique way to preserve the brightest moments of their lives!

82000+

Personalized Media Packages

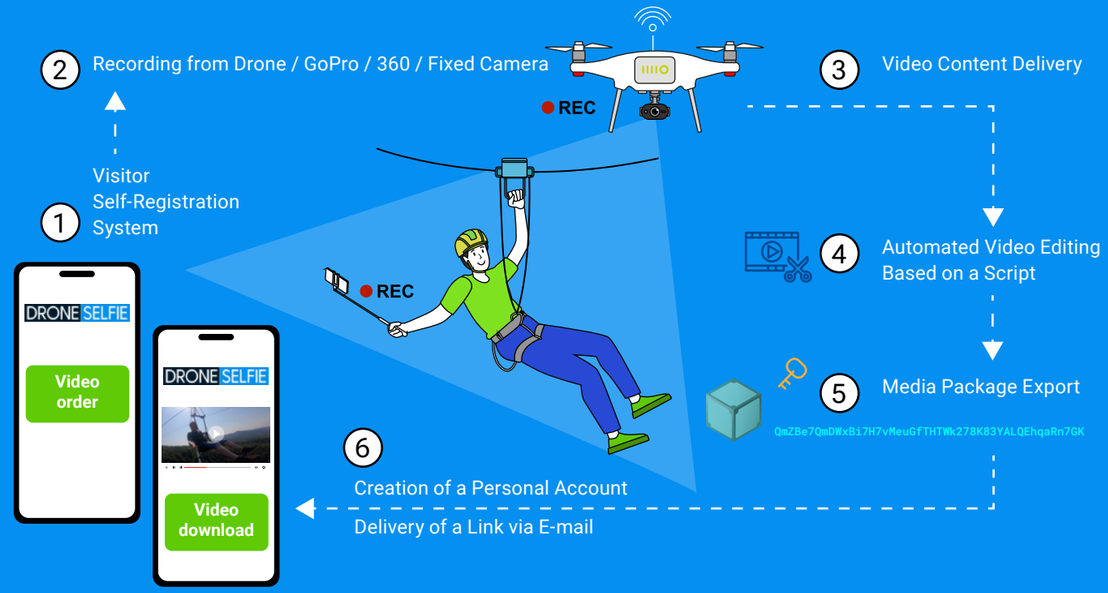
90%

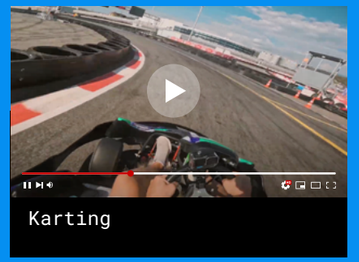
NPS Net Promoter Score

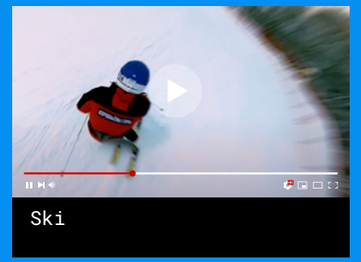
0

Incidents

More details about the project >>







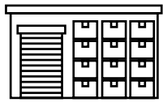
PINOUT -

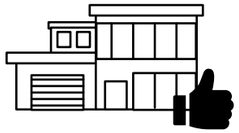
SMART HOME SYSTEMS INTEGRATOR

A year ago, we laid the foundation for our company with a contract from a local developer in hand. Today, we have come a long way in building business processes and finding new partners.

Our first residential building, a **28-apartment** project, is still under construction, but we didn't waste any time and have already procured all the necessary equipment. The total weight comes to approximately 1.5 tons. Take a look at part of our warehouse in Limassol.
x.com/vadim_manaenko/status/1791448918904942906

1,5 tons





A highlight of our work was automating an apartment for a private client. Since the project's completion, the client has been enjoying the comfort of a smart home for two months without a single issue. This demonstrates the high quality of the equipment we use and the professionalism of our team.

Since May 2024, we have been actively collaborating with the developer Inex in the city of Paphos. Together, we designed a highly reliable smart home system that includes lighting automation, control of air conditioning and underfloor heating, boiler heating, and seamless internet coverage throughout the apartment. With our technologies, we managed to reduce **the cost of the smart home system by more than half compared to wired solutions**.
x.com/pinoutcloud/status/1865001972165652967

Our company has started receiving orders for additional automation projects from a major developer, BBF. This year, we helped complete the lighting automation for the Rosa Dei Venti project and are working on another building. This positively impacts our professional expertise and the trust placed in our specialists.

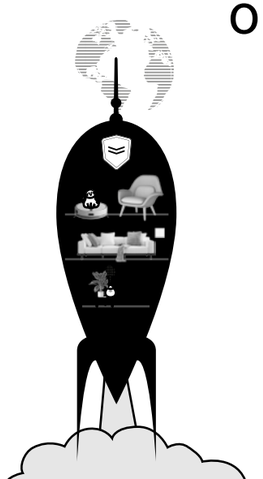
SMART HOME SOLUTION

Not just Cyprus! Our team of engineers climbed to the top of **Bali island**, where we contributed to creating an autonomous village on the slopes of a volcano. The project included high-speed internet coverage for the entire village, electricity consumption monitoring systems connected to solar panels, an autonomous smart home with a local server, water usage control, and much more. All of this was implemented in the jungle!

Learn more:
x.com/AIRA_Robonomics/status/1780514320595485011

2024

~100 objects



Each project is not just another line in our portfolio but an invaluable experience that enables us to look optimistically into the future and take on new, more ambitious challenges! Over the past year, we have completed nearly 100 real estate projects, and we plan to increase that number in the coming year.
Pinout is ready to enter the international market. We aim to provide our technologies beyond Cyprus. A new direction for our company in 2025 is launching a store to sell smart home devices, including those designed by the Robonomics team.

pinout.cloud

FEECC: a decentralized system for collecting production data

What if a seller could provide undeniable proof of the integrity of your... cappuccino? And what if it wasn't just a cup of coffee but a major supply chain for an automotive manufacturer—or even more critically, a medical equipment company?

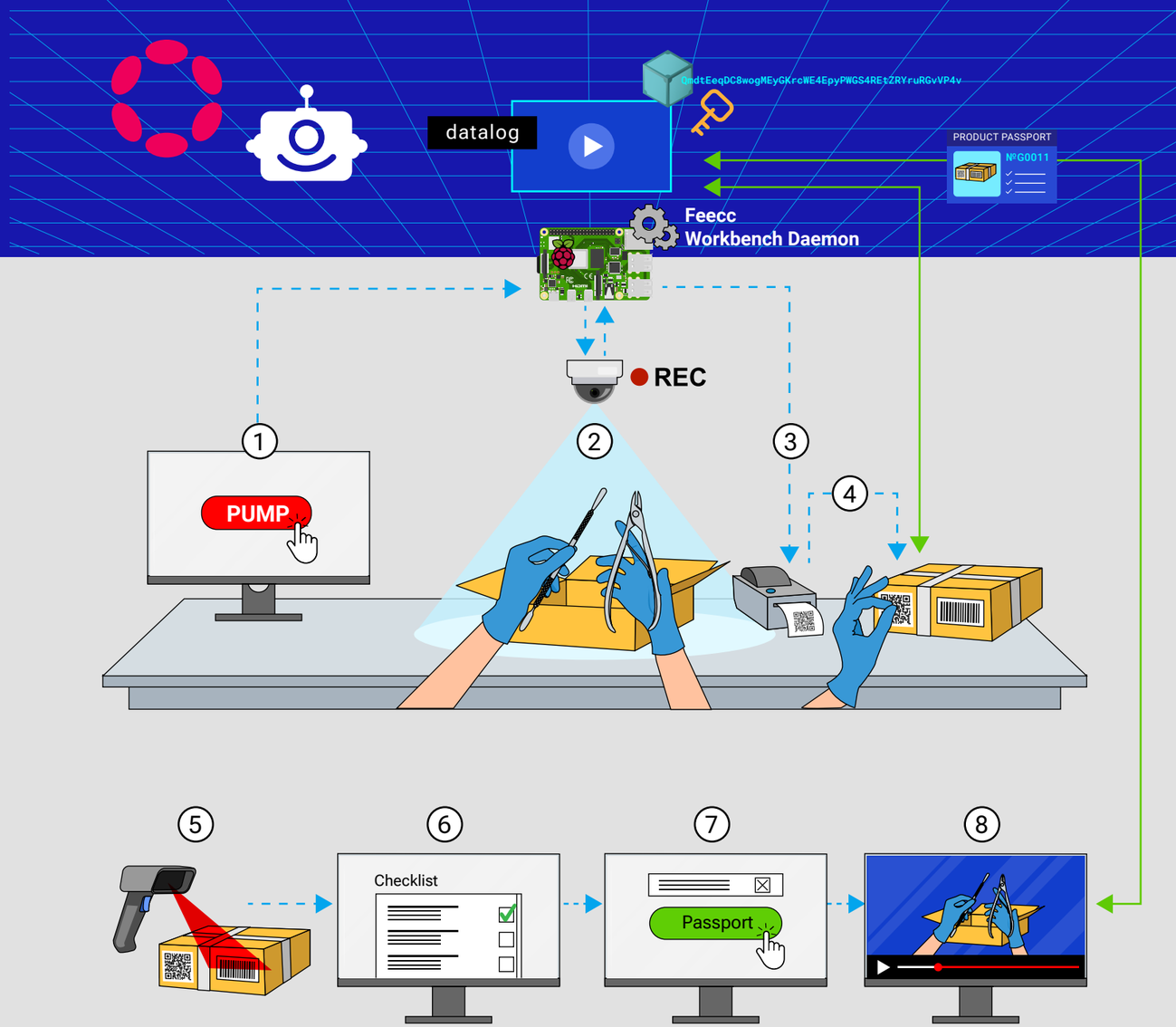
FEECC is a decentralized system for collecting production data, designed to ensure transparency and trust in manufacturing processes. Initially, the concept was tested in an experiment with coffee-making, where video recordings of the process were stored in IPFS, and their identifiers (CIDs) were recorded on the Robonomics blockchain. This guaranteed the authenticity and immutability of the process data.

Later, FEECC was integrated into the production processes of EndoStars, a company specializing in medical equipment. The system allowed for tracking component assembly through video recordings stored in IPFS and linked CIDs on the Robonomics blockchain. This approach ensured transparency at every stage of production, simplified quality control, and accurately identified the source of potential defects, whether from a supplier or assembler.

FEECC's architecture includes a web application for recording, unique barcode generation for components, and data storage in decentralized systems, preventing fraud and securing supply chains.

Learn more about the FEECC system, its architecture, and its successful real-world applications in the full article on the Robonomics Network website.

More about Feecc
Blog ROBO >>



Art Web3 & CYBERPUNK

by Anna Wimmer-S

This year, the Robonomics team, represented by Anna and Robonomics engineers, held an experimental art event combining art and technology as part of the Polkadot Sub0 and Devcon.

«I'm interested in how artificial intelligence and blockchain influence the perception of art, and I wonder: is there still a place for true artists as technology advances?»

said Anna WS

Anna demonstrated a unique process of creating paintings in real-time, with every stage of her work recorded on video and uploaded to the parachain through the Feecc project, creating digital passports for the artworks. The paintings were equipped with temperature and humidity sensors that documented the conditions of their creation. This data was also stored in the digital passports, ensuring transparency and enabling future owners to connect the artworks to their smart homes.

The Robonomics engineering team set up a mobile studio equipped with smart lighting and integration with a Web3 smart home system, enhancing the artist's working environment. The smart lighting eliminated the need to constantly adjust lamps based on the time of day, allowing the artist to stay focused on the creative process.

«The experiment went wonderfully! Based on people's reactions, I saw that there is still a place and value for real artists, even in the age of artificial intelligence. I believe that art and technology can coexist harmoniously, and it was rewarding to see the response to this new direction,»

said Anna WS

More about the technical idea, implementation, and Art-concept
Blog ROBO >>

WEB3 DIGITAL PASSPORTS FOR ARTWORKS

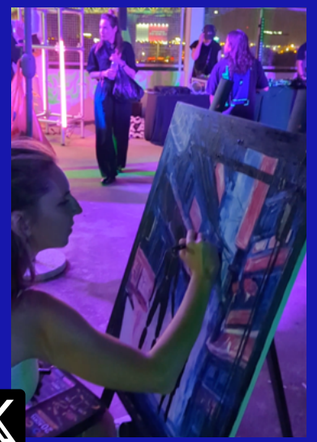
Lunar Code

Trust in the Digital Age

Cyber Pulse

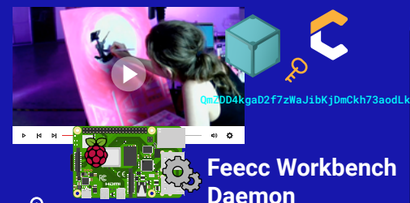
Cyber Illusion

Evolution of Freedom



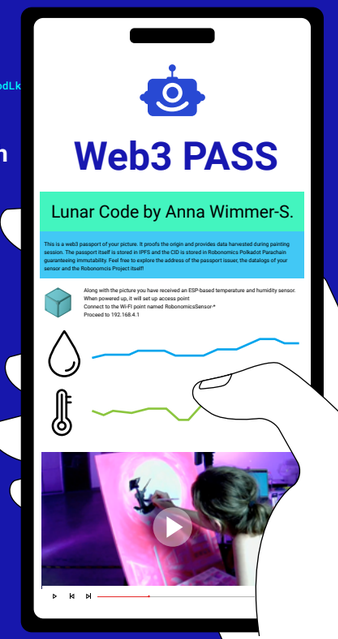
Вдохновение под Jam от dr. Gavin Wood

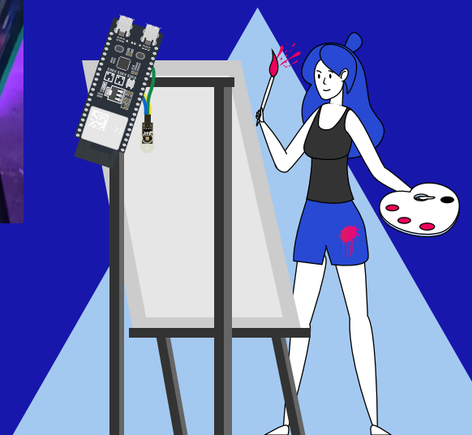
datalog



Feecc Workbench Daemon

REC





English version

ROBONOMICS.NETWORK · ALMANAC №7 · 2024 >> 2025

ROBONOMICS