WRIO Internet OS
A web 3.0 IoT platform
wr.io

Alexey Anshakov, CEO WRIO Ltd

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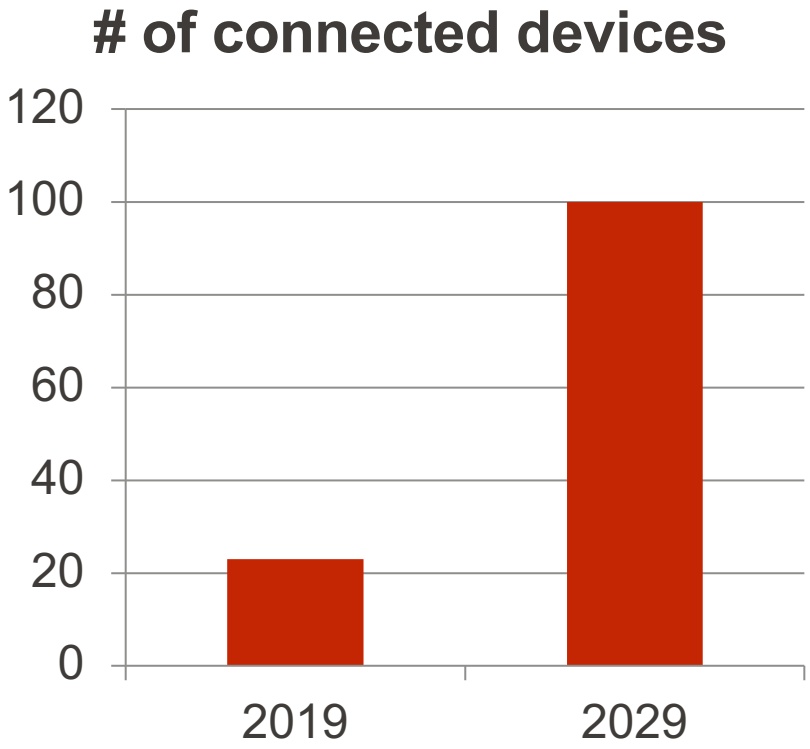
MISSION

Develop an open-source, decentralized and secure Facebook for smart devices and sensors

A WEB 3.0 IOT PLATFORM

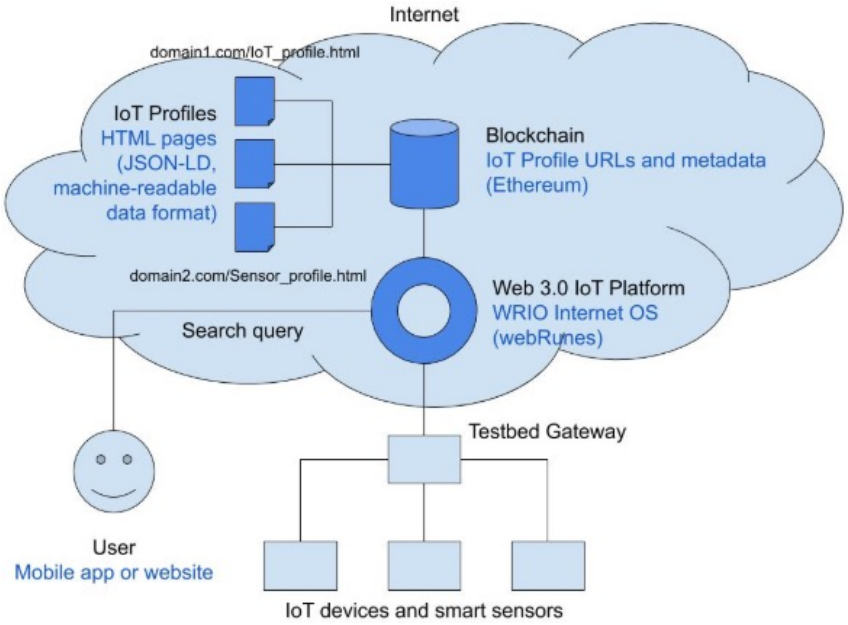
Demand



There are 23 billion connected devices in the world; this number doubles every 36 months and will exceed 100 billion in the next decade.

All these autonomous sensors require secure auto management and tracking.

Concept and objectives

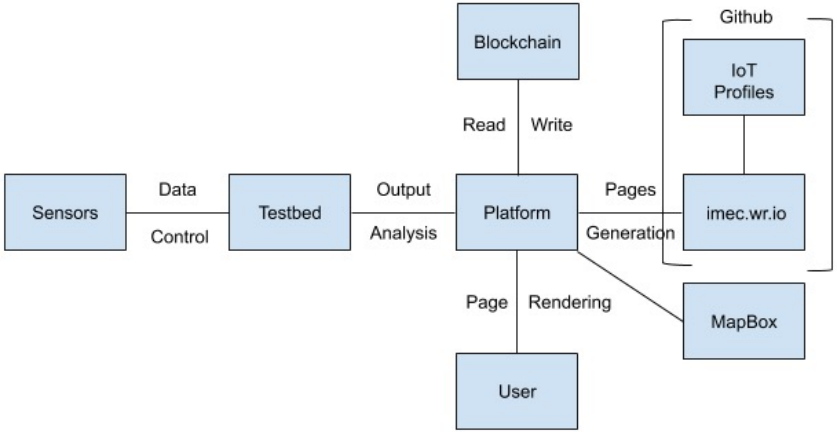


The project objective is to store full details of registered IoT devices, tracking and logging data transferred by them.

Background and motivation

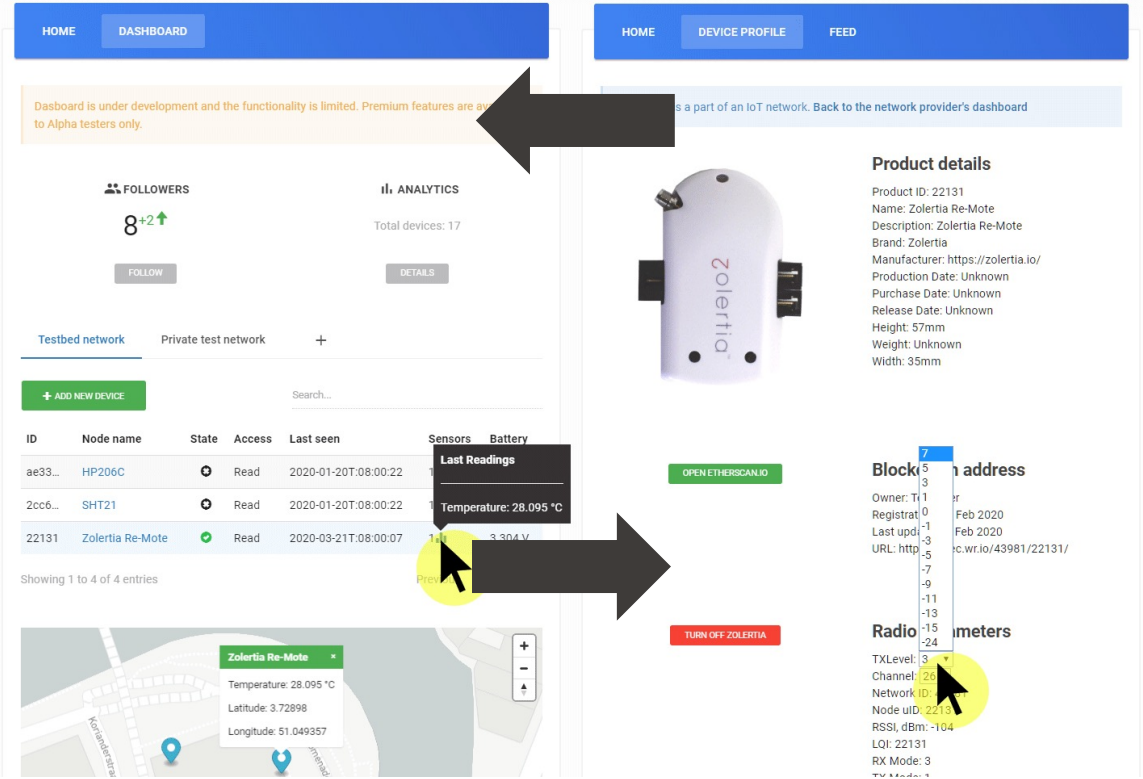
- Verify technological assumptions and selected solutions
- A step-by-step running of the entire cycle: from connecting to sensors to processing, storing and visualizing acquired data
- Choose a proper tech to assemble Demo Kits
- The minimal, yet valid product for demo to pilot clients

Experiment set-up



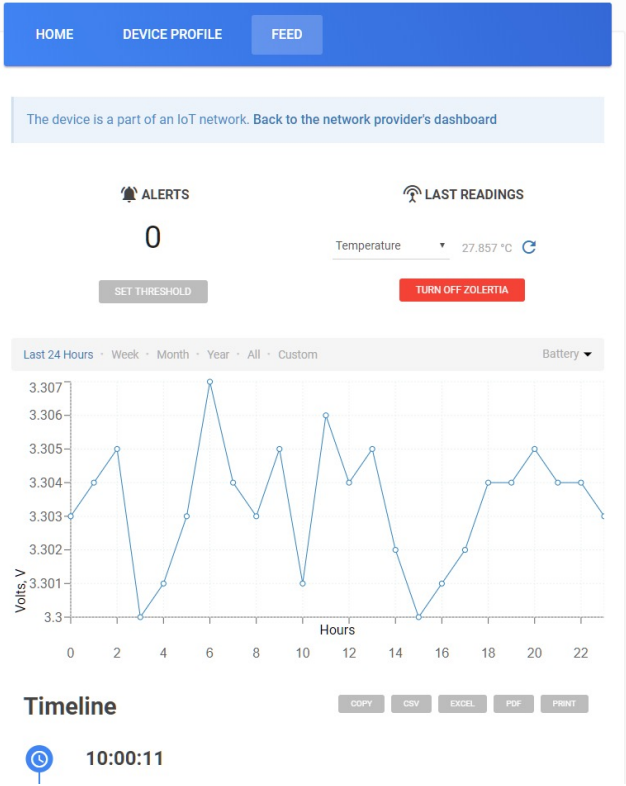
- Access to the Testbed
- Reservation
- Tools installation
- Getting static & dynamic data
- Storing data on AWS and GitHub
- Writing metadata into blockchain
- Management on-the-fly
- Live reprogramming
- Report and demo

Results



- Improved and optimized the structure of pages
- Blockchain record and data retrieving from it
- Decentralized database
- Improved demo https://imec.wr.io/#dashboard
- Ready to participate in accelerators

Lessons learned



The experiment confirmed that there are no technical constraints for using various sensors with any types of datasets.

Based on the experiment results we decided to develop Demo Kits using Zolertia sensors as a proven and convenient tool.

Output: No restrictions for further usage, development and dissemination of the achieved results.

Business impact

THE EXPERIMENT ALLOWED US:

- To identify problems that could result in excessive system maintenance costs in the future
- To create a solution with the next level of TRL and obtain new options for finding grants and investors
- To develop the Demo to find pilot clients

Business impact

HOW DID FED4FIRE HELPED

- Gained actual knowledge of IoT WRIO Platform limitations
- Verified the existing technical structure and determined the vector of future development of the Platform
- Gained additional practice and knowledge on working with new types of sensors and nodes
- Identified issues that will have to be solved when developing our own IoT gate solution (Demo Kits)

Business impact

VALUE

- Received scalable solution that can be extrapolated to different business cases
- Gained new ideas for connecting devices with the Platform

IoT WRIO Platform is a game-changing solution applicable to a wide range of other scenarios, products and industries.

Business impact

WHY DID WE COME TO FED4FIRE

- To manage the risk of selecting a wrong technical implementation
- As a result – we avoided possible negative effect on the financial sustainability of the project
- Advanced chances during negotiations with pilot clients and investors

Feedback

USED RESOURCES

w-iLab.t (imec)

Zolertia Re-Mote sensors:

- x1 temperature + battery data

Sensor nodes:

- x1 RM090

Note: due to patron's supplier issue we were unable to prepare a report containing more diverse data. Nevertheless, it had no effect on the running of the experiment.

Feedback

USED TOOLS

w-iLab.t (imec)

- JFed
- JFed command Line (CLI)

Feedback

WHAT WE WOULD LIKE TO SEE NEXT TIME

- Web API, to get access to shared resources like sensors
- Different types of sensors
- Qualified expert opinion and feedback concerning results
- Contacts of potential partners, accelerators and clients

Feedback

ADDED VALUE OF FED4FIRE

- Support and documentation
- Easy setup of experiments
- Diversity of available testbeds and resources
- Tools offered
- Combining infrastructures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WWW.FED4FIRE.EU