

The OASEES project will deliver a European, fully open-source, decentralized, and secure Swarm programmability framework for edge devices and leveraging various AI/ML accelerators (FPGAs, SNNs, Quantum) while supporting a privacy-preserving Object ID federation process.



OASEES-  
HorizonEurope



OASEES3



## OASEES



/communities  
/oasees  
project

[oasees-project.eu](http://oasees-project.eu)

## Our pilots

### e-Health

The outcome of this pilot will be an intelligent edge device capable of sensing, recording and analysing patients' utterances, as well as providing smart, adaptive and personalised guidance on rhythm and intonation. The system will be usable both in rehabilitation centres during sessions with therapists and at home. We will adopt a privacy-by-design approach when collecting and treating patients' acoustic data

### Energy

The real-field pilot will demonstrate the capability of deploying and coordinating in a scalable yet near the real-time way the operation and management of swarms of IoT-based devices (e-vehicles), which will be coordinated and programmed through the OASEES SDK and orchestration platform.

### Drone Swarm for area and infrastructure inspection

Autonomous drone inspections provide tower companies with data and insights to expand their infrastructure by gathering high-resolution aerial data, generating accurate 3D models and a 360-degree panoramic view of a potential antennae location. It helps to identify potential obstructions, establish the distance from nearby existing antennae, and acquire local permits easily. It also enables tower companies to adapt their existing site to the 5G network needs in urban environments.

### Structural Safety for Building and Critical Infrastructure


The structural condition of critical infrastructures is inferred by processing data from local sensors, SENSO operates a decision support software that collects this structural data and helps in decision-making during critical times. Currently, the collection of sensor data takes place on customer's premises, but it is inefficient and causes data privacy concerns and increased response time. A distributed DSS architecture, with components at the edge and the central cloud, would be more beneficial.

### Collaborative robotic automation

This use case investigates the application of a finishing machine in the context of medium and large-scale industrial operations. The machine is specifically designed to meet the demands of companies that prioritize high-quality sanding and finishing outcomes. The study takes into consideration the ongoing transformation of the furniture market, which is shifting from mass production to a more customized approach characterized by small batch production and even single piece fabrication. The research highlights the machine's ability to enhance the thermal properties of treated wood materials.

### Wind Energy

Blockchain can be used in the distribution and operation of IoT networks as a target for DAO paradigms, providing a backend for distributed data structures to securely store transactions in a decentralized manner. Smart metering is a key enabler for integrating smart energy renewable systems to existing infrastructure. In the OASEES project, novel IoT-based meters will be implemented to support on-the-fly programmability, using IoT sound transducer (microphones) applied to wind turbines



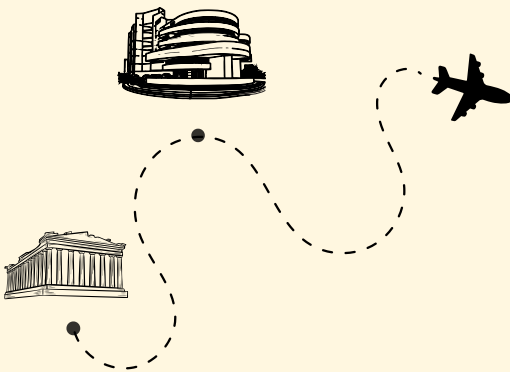
## 3rd Plenary Meeting



OASEES' 3rd Plenary Meeting took place at the Premises of Tecnalia Research & Innovation, in Bilbao, Spain.

The meeting lasted 2 days, 17th and 18th of October, 2023.

All 21 partners from across Europe got together and fruitful conversations regarding the project's objectives, architecture, and overall vision took place! The following two plenary meetings were also organized. The participants that couldn't physically attend the meeting, had the opportunity to participate via Zoom.



The consortium during the Plenary Meeting at the premises of Tecnalia





## Events



### IEEE: Nexus Forum 2023

On October 5th, 2023, OASEES successfully participated with Enrique Areizaga from TECNALIA Research & Innovation, on the EUCloudEdgeIoT session, in Brussels, Belgium!



### IEEE Future Networks World Forum 2023

On November 13th and 15th 2023, OASEES was presented by Akis Kourtis, Ph.D., during the Workshop on Beyond Current 5G Architectures for 6G Services, in Baltimore, MD, USA.

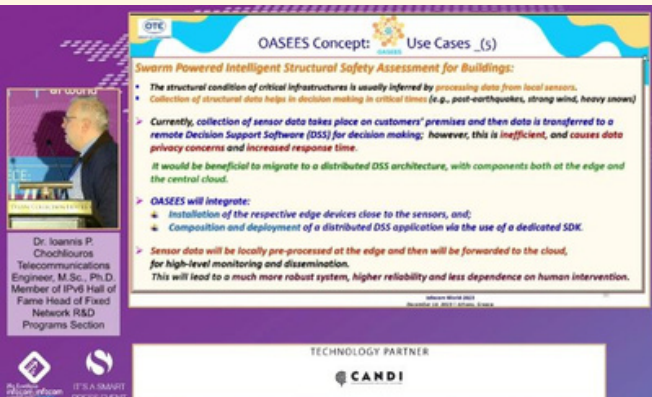


### CROSS BORDER DATA EXCHANGES FROM THEORY TO REALITY

On December 1st, 2023, OASEES was featured TRUSTEE's Workshop on Cross Border Data Exchanges. A detailed conversation to identify needs, requirements, opportunities, and challenges from open data, data manipulation, AI, and the TRUSTEE platform.

# OASEES Newsletter #2

January 2024



OASEES was present at the 25th Infocom World Conference 2023, Diginvest in Greece: New Horizons, on the 14th of December in Athens!

OASEES project was represented by Dr. Ioannis Chochliouros, Dr. Michail-Alexandros Kourtis, and Mrs. Vasiliki Vlachodimitropoulou in Session 1: Creating a New Programmability Framework for Open Autonomous Cloud Applications and Smart Edge Sensors” of the Research Workshop “Modern Research and Development Projects: Creating the Pillar for Investment and Innovations in the ICT Converged (Vertical) Markets”.



Dr. Ioannis Chochliouros and Dr. Michail-Alexandros Kourtis presented the tutorial “Creating a Decentralised Autonomous Organization (DAO) based Programmable Swarm Solution, for the Support of Decentralizing AI Applications Close to Data Generation Locations – The Innovative Vision of the OASEES Project”.

Mrs. Vasiliki Vlachodimitropoulou presented “The GAIA-X Framework – Correlation and Relevance to the OASEES Project”.

## Next Issue



OASEES Fourth Plenary Meeting will take place on February 1st and 2nd, in Ghent and will bring the consortium together in order for them to discuss the evolution of the project!

**Make sure to follow OASEES' LinkedIn and Twitter to not miss any updates!**

## Consortium

Get to know the OASEES Consortium!



adrestia  
Equilibrium in Research & Development



imec



Emotion



tecnal:a  
MEMBER OF BASQUE RESEARCH  
& TECHNOLOGY ALLIANCE

SPACE

Robotnik

ENGINEERING  
THE DIGITAL TRANSFORMATION COMPANY

Vibration Solutions  
Sensoo

axon logic

Capgemini engineering

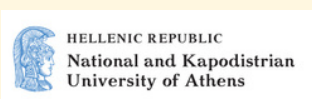
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