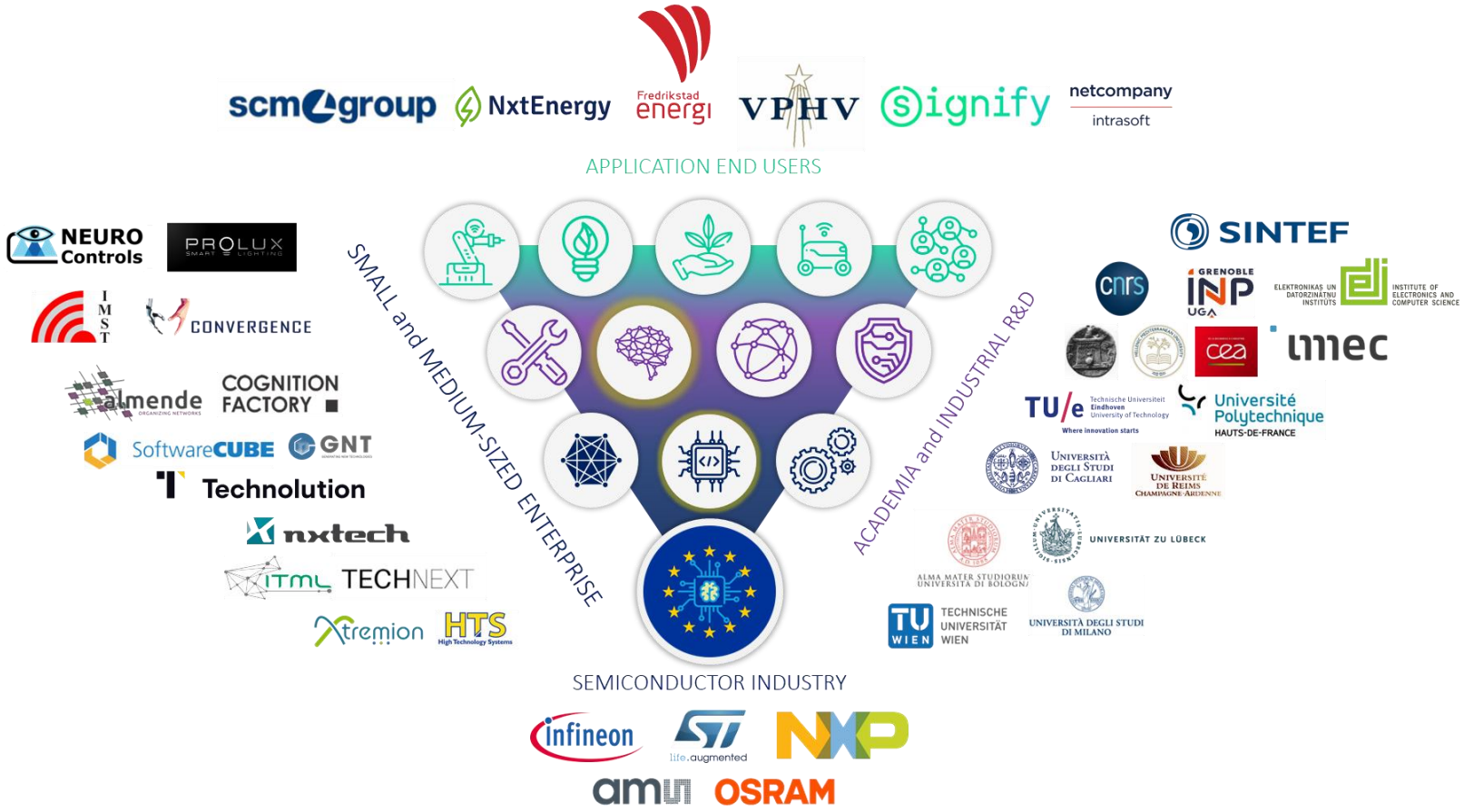
EdgeAI

PROJECT PRESENTATION

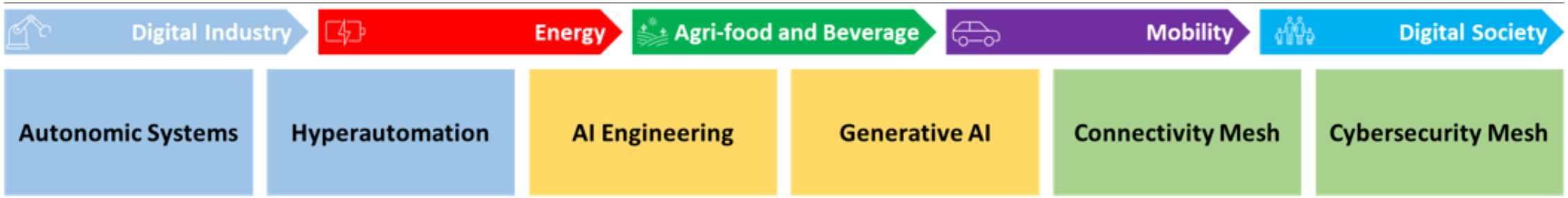
EdgeAI at a glance

- Starting period: 01 December 2022
- Duration: 37 months
- Beneficiaries: 42
- Affiliated entities: 5
- Associated partners: 2
- Total resources: 3707 PMs
- Total budget: 35,43 M€
- 11 European countries



Aim

- Develop new electronic components and systems, processing architectures, connectivity, software, algorithms, and middleware through the combination of microelectronics, AI, embedded systems, and edge computing.
- Demonstrate the applicability of the developed edge AI hardware/software/algorithms approaches across various vertical solutions, considering security, trust, and energy efficiency demands inherent in several use cases.
- The project covers key strategic application areas such as Digital Industry, Energy, Agri-food and Beverage, Mobility, and Digital Society.



Vision and Mission

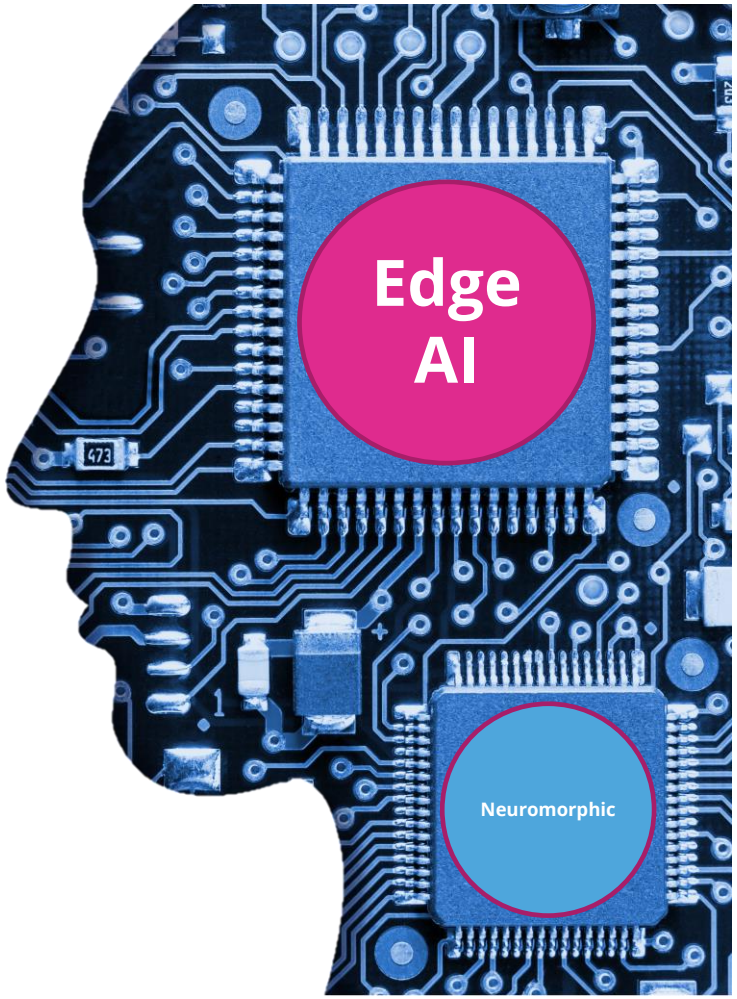
Vision

To contribute towards the creation of a resilient, resource efficient and sustainable society by bringing excellence and innovation to the development of advanced edge AI technologies and applications.

EdgeAI

Mission

To accelerate edge AI design, innovation, development, and deployment in Europe in different strategic industrial application areas, supporting the twin green and digital transitions.



Goals

04

To advance research and innovation in edge AI-based technologies, new processor architectures, electronic components and systems, tools, AI-design methods, and middleware that guarantee security, trust and energy efficiency for infrastructures and industrial sectors across Europe.

02

To increase energy efficiency, improve processing capability, increase trustworthiness, and reduce the CO_2 footprint of embedded edge AI applications across multiple industrial sectors.

03

To foster a dynamic edge AI European ecosystem based on the AI technology stack and digital value-chains across industrial sectors and increased competence and skills, leading to new industrial applications and new market opportunities for Europe.

01

To create a new framework embedding intelligence at the edge, and strengthening the development of low-power, real-time, energy-efficient AI hardware, embedded AI and software addressing multiple computing paradigms across the edge continuum.

EdgeAI objectives

- The project vision and mission is realised by achieving six defined objectives
- The 6 objectives address the realization of embedded intelligence for a secure connected, cooperative and autonomous mobility, for a climate neutral and Vision Zero transportation in 2050 through automotive intelligence sharing applications inside and outside the vehicles.
- Detailed Key Performance Indicators (KPIs) are defined per each objective

Objective 1

Develop secure AI-based edge platforms for end-to-end hardware/software solutions addressing the AI design stack and middleware.

Objective 2

Provide scalable edge AI-based energy-efficient techniques, methods and frameworks supporting different OSs and hardware platforms.

Objective 3

Advance multi core SoC and SoM AI-based designs with embedded hybrid architectures, connectivity and IIoT devices for industrial environments.

Objective 4

Integration of scalable and modular AI Co-design: hardware/software, algorithms, topologies into novel AI open architecture platforms.

Objective 5

Implementation of reconfigurable AI-based architectures for increasing the re-use, updatability, upgradability and service life of AI.

Objective 6

Provide trustworthy and explainable edge-AI by design solutions with real-time operation capabilities and dynamic online learning.

EdgeAI overview

Vision

To contribute towards the creation of a resilient, resource efficient and sustainable society by bringing excellence and innovation to the development of advanced edge AI technologies and applications.

Mission

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- Digital Industry
- Energy
- Agri-food and Beverage
- Mobility
- Digital Society

Trends

- Autonomic Systems
- Hyperautomation
- AI Engineering
- Generative AI
- Connectivity Mesh
- Cybersecurity Mesh

Goals

I. To create a new framework embedding intelligence at the edge, and strengthening the development of low-power, real-time, energy-efficient AI hardware, embedded AI and software addressing multiple computing paradigms across the edge continuum.

II. To increase energy efficiency, improve processing capability, increase trustworthiness, and reduce the CO_2 footprint of embedded edge AI applications across multiple industrial sectors.

III. To foster a dynamic edge AI European ecosystem based on the AI technology stack and digital value-chains across industrial sectors and increased competence and skills, leading to new industrial applications and new market opportunities for Europe.

IV. To advance research and innovation in edge AI-based technologies, new processor architectures, electronic components and systems, tools, AI-design methods, and middleware that guarantee security, trust and energy efficiency for infrastructures and industrial sectors across Europe.

Objectives

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KDT JU KEY DIGITAL TECHNOLOGIES JOINT UNDERTAKING

2023

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THANK YOU!

@ Ovidiu.Vermesan@sintef.no

https://edge-ai-tech.eu/

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