AI-Enabled Data Lifecycles Optimization and Data Spaces Integration for Increased Efficiency and Interoperability

PLIADES

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No. 101135988

Mission

PLIADES envisions an advanced **AI-enabled** framework for **Full Data Lifecycles Optimisation** and **Data Spaces Integration** that will:

- **interconnect diverse sectors** such as **mobility**, **healthcare**, **manufacturing**, **energy**, and **green deal** increasing **efficiency** and **interoperability**
- provide **data** and **services** for improving **car technologies** like CCAM[1] & ADAS/AD[2] and HRI[3] for robot operators and patients

1. Cooperative, Connected, and Automated Mobility, 2. Advanced Driver Assistance & Autonomous Driving, 3. Human-Robot Interaction

Timeline

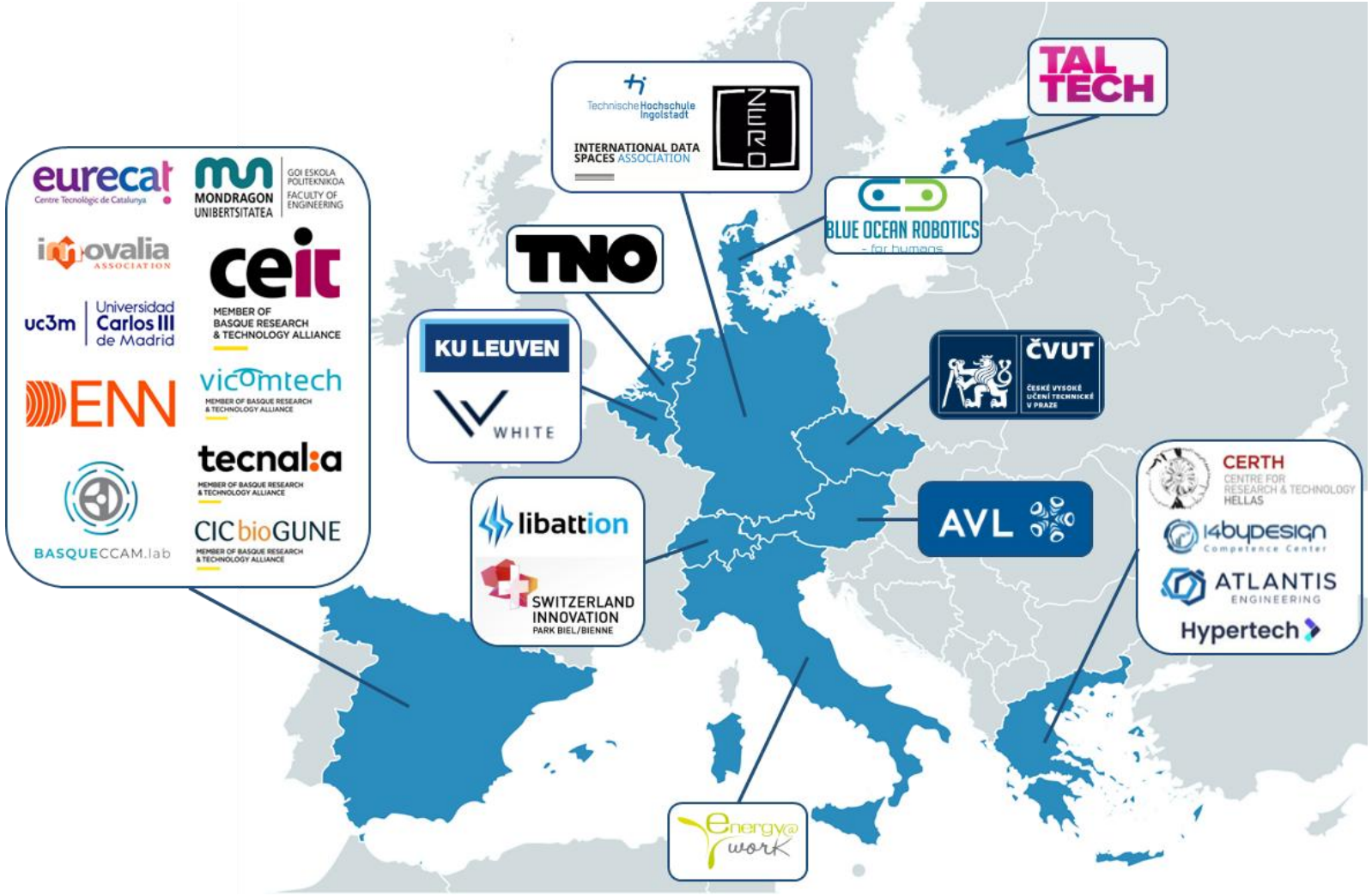
PLIADES timeline:

- Start date: **January 1st 2024**
- End date: **June 30th 2027** (42 months)

Important **milestones**:

- Definition of the **system's architecture** (2024)
- Preliminary **deployment** of the **framework** with **partially integrated solutions** (2026)
- Launch of the **initial version** of the PLIADES **data spaces** (2026)
- **Pilot testing** and **evaluation** (2027)

Consortium



PLIADES Consortium

- 28 Partners
- 10 EU Member States & Switzerland

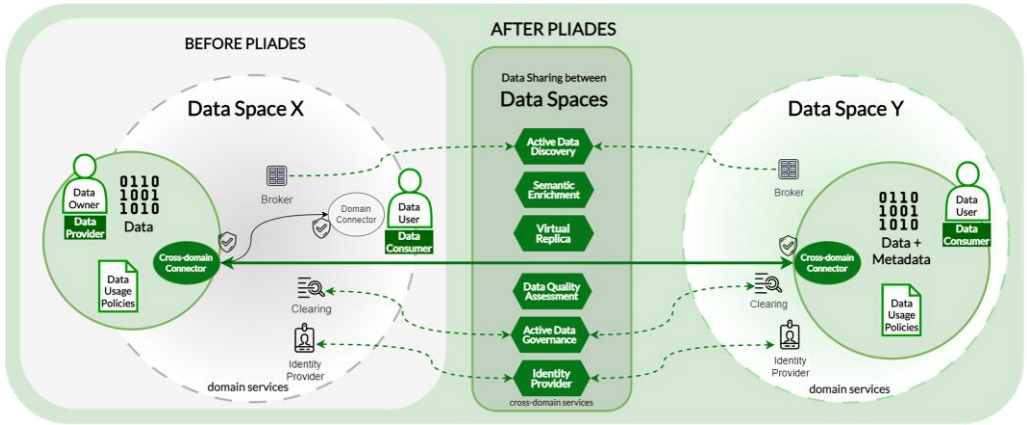
Consortium Breakdown

- 13 RTOs
- 10 SMEs
- 5 NPOs

Objectives

The PLIADES project aims to research and develop:

- novel **AI-enabled tools** for **sustainable** and **human-factors-aware data creation** in **diverse dataspaces**
- advanced **data spaces connectors** for extended **interoperability** across different data spaces
- novel **AI-boosted** data **brokers** matching **data consumers** with **data providers** across **different sectors** utilizing International Data Spaces – Reference Architecture Model - **IDS-RAM**
- novel **data processing** and **analytics** services, ensuring **data privacy**, **trustworthiness**, **security**, **re-use**, and **disposal**



Use cases

PLIADES outcomes will utilise **different types** of **data** spanning **six use cases**, focusing on diverse dataspaces, such as:

- data from **smart vehicles** to improve their **ADAS/AD** & **CCAM** functions and **energy** management **(mobility dataspace)**,
- patient/doctor HRI data to improve **service robots' HRI** effectiveness and **patient** data to improve **diagnostic & prognostic** clinical models for **personalised** medicine services **(healthcare dataspace)**,
- manufacturing data to improve **zero-waste manufacturing, predictive maintenance** and **HRI (industrial dataspace)**.

Alignment and contributions towards dataspaces and beyond

PLIADES will utilise the **IDSA's Reference Architecture Model** *(IDSA is a PLIADES partner)*

- **use** and further **build** upon the **IDS-RAM** layers for extending **cross-domain interoperability** of data spaces
- use **guidelines** from **Data Spaces Support Centre** (DSSC) **Blueprint** building blocks **complementary** with **IDS-RAM** to address **Business**, **Governance**, and **Legal** aspects
- exploit **flexibility** and **adaptability** of **DSSC's blueprint** to specific **needs** and **characteristics** of **different sectors** and domains to adapt to **PLIADES Use Cases**

Target Values

- **Scientific:** Research and development of **innovative tools** and **standards**
  - that address critical challenges in **data creation**, **storage**, **ownership**, **discovery**, and **disposal** across **diverse data spaces**.

- **Societal:** Produce **greener** data and **enhanced** services and products
  - using advanced yet **eco-friendly data processing** methods for **data generation**,
  - and improve everyday life through personalised healthcare products, smart vehicles, etc.

- **Economic/ Technological:** The deployment of the PLIADES framework aims to:
  - **reduce resource** requirements for **data acquisition**,
  - **improve technological solutions** and promote **advancements** across multiple industries, through the utilisation of vast amounts of **high-quality data**,
  - enable **synergies** between **multiple data spaces** for development of **innovative technologies**.

More information

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Thank you for your attention!

Any Questions?

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