

AI-Enabled Data Lifecycles Optimization and Semantic Interoperability for Enhanced Cross-Domain Data Spaces Integration

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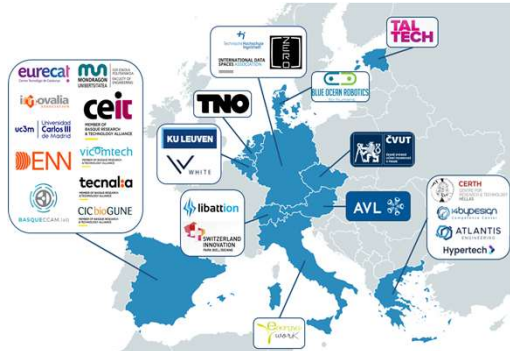
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Introduction

As data spaces gain traction across Europe, the need for semantic interoperability and intelligent data lifecycle management becomes critical—especially in cross-domain environments where data formats, ontologies, and standards vary widely.

The PLIADES project aims to research and develop:

- novel **AI-enabled tools** for **sustainable** and **human-factors-aware data creation** in **diverse data spaces**
- 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 & analytics** services, ensuring **data privacy, trustworthiness, security, re-use & disposal**.



Consortium: 28 partners, 10 EU countries & Switzerland

Started: January 1st, 2024

Duration: 42 months

Project Excellence & Contribution

Enhanced Data Integration: Tools for data **creation, storage, ownership, discovery & disposal**.

Fostering Innovation: Securely combines data from multiple sources, overcoming business, technical & legal barriers to data sharing, boosting EU **economic development**.

Sustainability: Environmentally friendly data operations, **context-aware & cost-effective** solution.

Improved Quality of Life: Leads to advanced services & products, from smart vehicles to personalized healthcare.

Interoperability: Extends **cross-domain interoperability** by implementing the **latest Data Space Protocol** and following the DSSC Blueprint for **business, governance & legal** aspects.

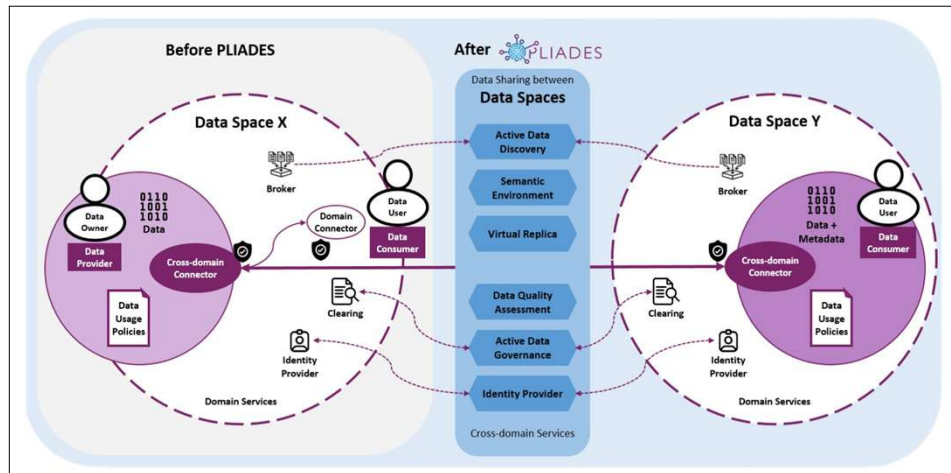
Impact

Scientific: Innovative **tools** and **standards** for data creation, storage, ownership, discovery, & disposal, leading to enhanced **data governance** and **accessibility**.

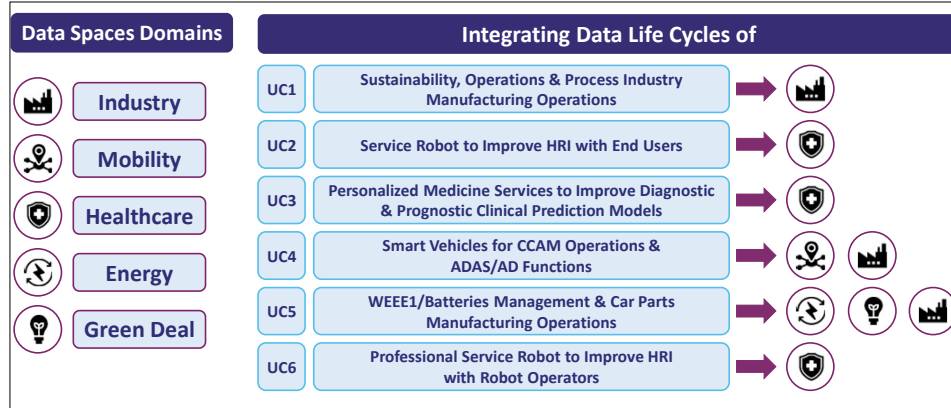
Societal: Prioritizes **greener** data & **sustainable** services/products, enabling **personalized** healthcare and CCAM.

Economic & Technological: **Reduces** energy/resource needs for data processing, fosters **industry advancements** & accelerates **digital transformation** by enabling data space **synergies**.

Mission & Objectives



Use Cases



PLIADES Architecture – Extending on IDSA

- Building upon the **IDSA Reference Architecture Model** layers, extending for cross-domain interoperability.
- Implements the latest **IDS RAM 5** and the latest **Data Space Protocol (DSP)**.

