What drives us

The objectives that GLACIATION will pursue over the three years

- **Creation of a sustainable and scalable metadata fabric** that binds datasets with energy and compute capacity to best serve analytics needs.

- **Introduction of novel algorithmic mechanisms for AI enhanced service placement** that supports, and coordinates Centralized, Distributed and Federated computations

- **Development of a flexible, open, vendor- neutral architecture** that can support distribution of knowledge graphs with energy- aware edge-core-cloud components

- **Creation of microservices for the energy-efficient distribution** of services and trustworthiness of digital services in support of the privacy of citizens

- **Development of privacy-preserving models and technologies** for supporting the distributed processing of data

- **Beyond state of the art distributed knowledge graph technology** towards energy-efficiency

- **Development of data centric power consumption measurement framework** and protocols

- **Creation of an AI-enabled data movement engine** for real-time predictive optimization of data based on energy availability and requirements

Our partners

MEF Ministero dell'Economia e delle Finanze

DELLTechnologies

hiro MICRODATACENTERS

Leibniz Universität Hannover

theLisboncouncil think tank for the 21st century

UNIVERSITÀ DEGLI STUDI DI MILANO

UNIVERSITÀ DEGLI STUDI DI BERGAMO

ERCIM European Research Consortium for Informatics and Mathematics

EURECOM Sophia Antipolis

SAP

UCC University College Cork, Ireland Coláiste na hOllscoile Corcaigh

ETHzürich

sogei

Lakeside Labs SELF-ORGANIZING NETWORKED SYSTEMS

ENGINEERING THE DIGITAL TRANSFORMATION COMPANY

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GLACIATION

Green responsib**L**e priv**AC**y preserv**I**ng d**A**ta opera**TION**s

The context

Our goal

Our mission

GLACIATION brings together 15 leading organisations with long-lasting expertise in business information systems and cutting edge research and innovation.
Today's technological landscape consists of a deeply interconnected architecture made of devices (mobile phones, sensors, etc.) that upstream data towards the cloud. People and businesses produce and collect data at the edge and share them across the network. Whereas energy consumption and privacy needs will push towards the edge, performance (analytics and storage) will pull towards the core. **GLACIATION** optimises between these trade-offs.

GLACIATION will develop its technological solution and governance framework in line with the European data ecosystem architecture, contributing to its further advancement.

The main goal of **GLACIATION** is the development of Distributed Knowledge Graph as the building block for a data operations platform that improves the enviornmental sustainability of data processing through AI enforced minimal data operations and enables organisations to optimise energy consumption and performance while ensuring privacy.

The results of the project will be a digital platform for green and privacy- preserving data operations across a edge-to-cloud architecture.

GLACIATION will improve the efficiency and the use of trustworthy digital technologies to address the requirements of citizens, companies and administrations/public organizations on privacy and commercial and administrative confidentiality as well as responsible, fair and environmentally friendly (e.g. in terms of energy/carbon/material footprint) data operations in data spaces, across the data life cycle.

GLACIATION will increase the maturity of the EU data ecosystem by demonstrating its solution within the Gaia-X and Catena-X framework.