

Practice Abstract #5

Information Factory implementation and alignment on requirements for green data spaces

Summary

OBJECTIVES. EARTHONE is building the Information Factory, a digital solution that supports the entire data and information lifecycle in EARTHONE land use and climate management processes. Information Factory core system includes:

- The design of the general architecture;
- The definition of the IoT environment for multimodal data collection;
- The development of the different core modules (APIs, EDS, data storage, federated orchestrator etc.) by following best practices for continuous integration/development and deployment;
- The definition of a comprehensive framework to manage data flows and AI models, including the regulation, control and monitoring of data gathering, storage, use and sharing within the ecosystem.

RESULTS. During the initial phase, EARTHONE has:

- Defined core system requirements and architectural specifications, based on an iterative process combining project objectives with evidence from stakeholder co-creation workshops and targeted technical consultations. This translates functional and non-functional needs into concrete platform specifications.
- Identified, developed and integrated key platform components required to manage data flows across different sources.
- Delivered a first rapid prototype capable of receiving data from sensors and other sources and displaying them through dashboards and web-based visualisation tools.

PRACTICAL IMPLICATIONS. The work carried out lays the foundations of a new data and information digital platform that will allow diverse stakeholders to analyse and understand the key drivers that influence GHG (greenhouse gas) emissions fluxes. Information factory supports an innovative interdisciplinary approach, combining advanced data-driven technologies with on-the-ground heterogeneous data/information from vulnerable regions in Southern and Mediterranean Europe.

Additional information

Information Factory will manage monitoring data, pre-existing and legacy data siloes to centrally gather relevant indicators of climate, soil and land change in the EU. All available data will be used to develop geoAI-based models for effective simulations and visualisations enabled data-driven services for target users (policy makers, urban and rural land managers and landowners) in the sector.

EARTHONE's Information Factory contributes to promoting open strategic autonomy by developing key digital and enabling technologies to accelerate and steer the digital and green transitions through human-centred technologies. The core system provides tools to analyse, model and project impact of past, present and future land use and land use change on the local and regional evolution of the climate.

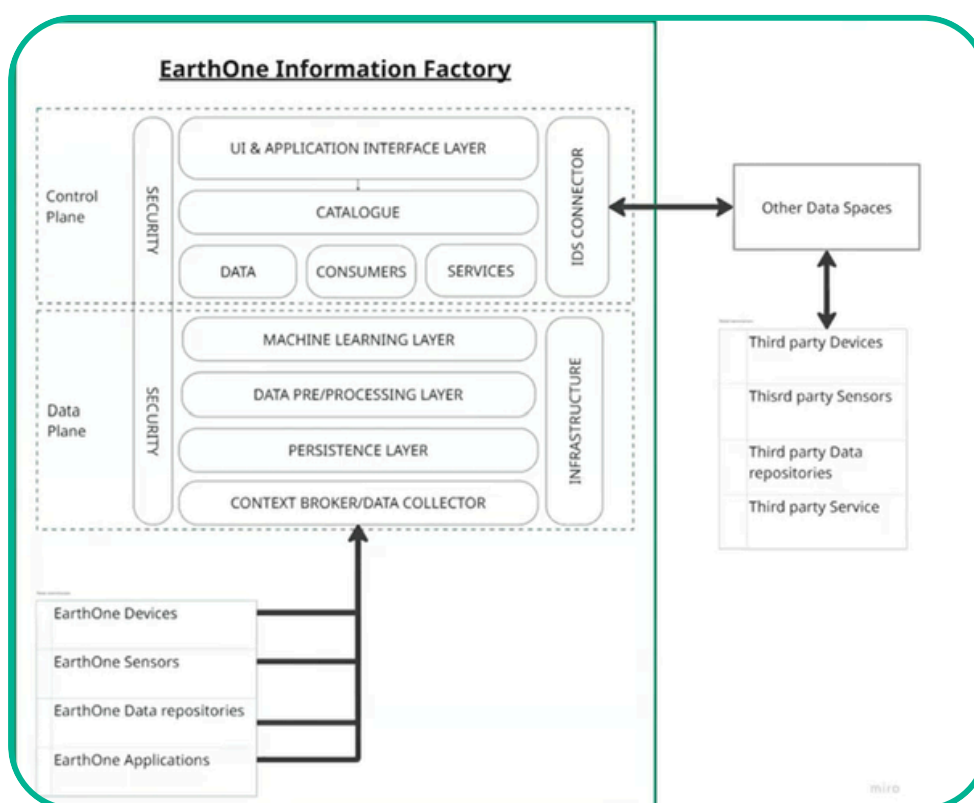


Figure 1. EARTHONE Information Factory Architecture

Useful links: [Blog - Introducing the EARTHONE Information Factory](#)

Authors: Miguel Angel López (SATEC)
Juan Sebastián Ochoa (SATEC)
Mónica Gómez (SATEC)