ANNUAL REPORT 2024

LNDS

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Message from the Minister

The Luxembourg National Data Service (LNDS) is crucial to Luxembourg's Data and AI strategies. At the Data Summit Luxembourg in December 2024, leaders discussed the transformative power of data. Despite its small size, Luxembourg prioritises quality over quantity, strategy over scale, and innovation over imitation, aiming to create enriched data that provides valuable insights.

Luxembourg's data strategy includes breaking down data silos with a One-Stop-Shop approach, simplifying data management, and fostering trust. Emphasising decentralised data use ensures interoperability and compliance. Luxembourg aims to be a Data Entry Point for the EU, facilitating data flow from non-EU countries with GDPR-aligned frameworks.

A new bill, the draft of which I introduced in Parliament in 2024, will complement the European Data Governance Act, designating the Ministry for Digitalisation to develop a data catalogue, appointing the Government Data Protection Commissioner's Office as the central Data Authority, and assigning the Government IT Center and LNDS to assist in data access and re-use. This fosters a regulatory environment supporting innovation and advanced processing capabilities, making Luxembourg a prime destination for data-driven businesses.

Stéphanie Obertin
Minister for Digitalisation
Minister for Research
and Higher Education

Message from the Board

Since its inception in November 2022, the Luxembourg National Data Service (LNDS) has gained momentum and is now operating at full capacity. In 2024, the team made significant contributions to updating the national Data and AI strategies and supported various teams in defining flagship projects aimed at driving major societal and economic impact. LNDS is actively preparing for the implementation of new legislation introduced by the Minister of Digitalisation and continues its mission to support the access and re-use of public sector data.

We balance local support for national data partners with active international participation, serving as a source of both expertise and funding. Collaborations with European data space initiatives, the ELIXIR research infrastructure for genomics, and the testbed project with Japan are crucial steps towards establishing a strong international presence.

In 2025, we expect LNDS to become a leading force in helping to implement the Data strategy, the new legislations, and the Luxembourg AI factory.

Romain Martin
Chairman of the
Board of Directors

The Board of Directors

LNDS is governed by its Board of Directors:

- Ministry of Research & Higher Education: **Romain Martin**
- Ministry of Digitalisation: **Gaston Schmit**
- Ministry of Economy: **Mario Grotz**
- Ministry of Finance: **Alyssa Di Cara**
- Ministry of Social Security: **Thomas Dominique**
- Ministry of State: **Max Gindt**
- Luxembourg Institute of Health (LIH): **Ulf Nehrbass**
- Luxembourg Institute of Socio-Economic Research (LISER): **Aline Muller**

Leadership Team

Bert Verdonck, CEO

Christophe Trefois, Head of Technology

Wei Gu, Head of Service

Matthieu Paret, Head of People

Regina Becker, Fellow ELSI

Key figures

Since 2022
Founded in July, Started in November

63
Collaborators

€5.4M
Subsidies granted

€10.8M
spent since the start

19
Data projects active

23
Data projects completed

54
Data sets in catalogue

9
Tools in production

15
Services released

2
Data Summit Luxembourg events

Welcome

In this second Annual Report, we summarise our achievements since our establishment in November 2022. In 2024, we broadened our support across a growing range of domains, including health, education, mobility, environment, energy, and connectivity. This expansion allows us to identify and drive synergies in expertise, services, and tools that can make a significant impact across sectors.

We have continued to grow and strengthen the LNDS team, which remains our most crucial asset. Our team is highly diverse, comprising of 61 individuals from over 30 different nationalities, with expertise spanning the entire data processing pipeline, including legal, data, AI, and information technology. We collaborate with various technology partners, such as Incert, CTIE, Fraunhofer ISST, DataThings, NTT Data, and more, ensuring we do not work in isolation.

With AI developments advancing rapidly, we have integrated AI into our tools and services, redirecting some of our data services to support and accelerate the supply of quality data for AI. This has become our primary focus within the Luxembourg AI Factory, kickstarted in 2025.

As outlined in the message from our Board, LNDS is designated as a competent body in the forthcoming law proposal, formalising our support for the access and reuse of public sector data, as illustrated in the end-to-end data journey introduced at the Data Summit Luxembourg last December.

Thank you for reading this annual report and please reach out with your feedback, questions, or suggestions for collaboration.
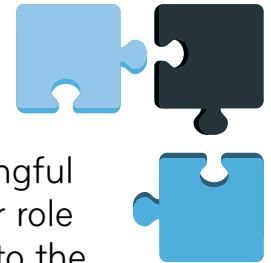
Bert Verdonck
CEO

Watch the
video recap

Vision, mission & purpose

At LNDS, we believe that data has the power to drive meaningful transformation - socially, economically, and ecologically. Our role is to ensure that data is used responsibly, transparently, and to the benefit of all. Hence, we promote a sustainable, knowledge-driven, and human-centric digital future.

## Vision – to make Luxembourg the European innovation leader towards a responsible digital society.

Building on the foundations laid in our first year, we are taking steps towards our vision to strengthen Luxembourg's role in Europe's digital future by contributing to national and European strategies, advancing interoperability and the reuse of public sector data.

Mission – to support research, innovation, and policy making through high-quality data services.

Our growing portfolio of co-developed tools and services empowers public administrations, researchers, and private actors to collaborate and innovate across the entire end-to-end data journey — from discovery and processing to reuse.

Purpose – to enable value creation from the secondary use of data – with transparency, control, and trust.

We work to make data FAIR – Findable, Accessible, Interoperable, Reusable – unlocking value from existing datasets. We put our purpose into practice by collaborating with public and private partners on concrete data projects (see Impact – Data projects p.18).
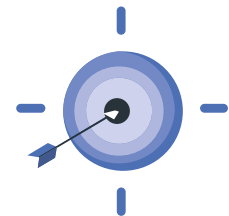
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Values & way of working

In 2024, our organisational culture evolved further into a dynamic and inspiring environment, characterised by dedication, compliance, enjoyment, and collaboration. Our core values – Trustable, Thriving, and Transparent – are the pillars that support our mission. Our values guide our daily actions, ensuring we remain a reliable, innovative, and open organisation.

Values – guiding our way of working

At LNDS, our values shape our day-to-day decisions, team dynamics, and partnerships.

Trustable: We care about your rights and honour our commitments. Security and reliability are at the core of all our processes.

Thriving: We listen, adapt, and support you to succeed. We foster collaboration and innovation for societal impact with our partners

Transparent: We communicate truthfully and explain limits and constraints. We share our know-how for your benefit.

SAFe methodology – a means for creativity & innovation

We embrace the Scaled Agile Framework (SAFe), as a means to guide our processes and team dynamics. The SAFe agile methodology encourages a flat organisational structure, empowering every team member to take initiative. This structure avoids bureaucratic barriers and fosters progress through creativity and innovation.

By maintaining a flat organisational structure, we promote an atmosphere where autonomy and fresh ideas thrive. This approach allows our teams to navigate challenges with agility and inventiveness, continuously driving improvement and success.

We are committed to creating an environment where every individual feels valued and inspired to contribute their best. As within our SAFe methodology, we lean on the power of collaboration and value the strength of diverse perspectives. Together, we build our way of working, driven by our shared values.

Means for building trust

Trust is the foundation of how we build and deliver our work. We ensure this by following strict data protection rules, maintaining strong information security systems, staying true to our values and being guided by ELSI – Ethical, Legal, and Social Implications.

Leading with privacy – Data protection at the core

2024 was a landmark year for data protection compliance, including clear commitment to dedicating the necessary resources for high standards of compliance. Given our mission, we aspire to be a leader in innovation within the data-sharing domain while upholding the principles of privacy and data security.

Starting 1 January 2024, we appointed our first Data Protection Officer (DPO). Supporting the DPO, is the ELSI team, with multidisciplinary expertise in legislation, policy making, ethics, information security, and innovative technologies (with a focus on AI).

Maintaining privacy compliance is an ongoing effort. Our focus is on data protection by design and by default, embedding privacy considerations in all new services and products.

ISO certification – achieving trust

To enhance trust and reliability among our partners, we continued the establishment and implementation of our compliance framework. This included investing significant efforts in the information and privacy security management systems (ISO 27001, ISO 27701) to align our practices with international standards. Because of our unified approach to compliance, we have also seamlessly integrated rules from the network and information security directive NIS2.

"Our journey toward ISO certification is about more than compliance. Integrity and trust are the foundations on which sustainable data innovation can flourish. In that sense, trust isn't a checkbox – it's a culture."

Christophe Trefois, Head of Technology, LNDS

This trust-building strategy goes beyond technical controls. By deeply embedding legislative, ethical and societal considerations into our compliance framework, we believe that we cultivate a culture of trust and integrity.

ELSI by design & the legislative scene

ELSI – Ethical, Legal, and Social Implications, is another essential building block both within LNDS, and in supporting the legislative scene in Luxembourg.

Internally, when ELSI aspects are considered in the early stages of the design of tools and services, it becomes easier to balance privacy and functionality. All our services are pursued jointly with an ELSI specialist, in order to help design tools and services in a privacy protective way, considering the rights and interests of all stakeholders.

Nationally, our ELSI support has been a cornerstone, supporting the Luxembourgish government in the finalisation of the European Health Data Space (EHDS) regulation, where political consensus was reached by the end of 2024.

LNDS engaged to move the draft legislation towards a more participatory and transparent approach for citizens and in providing more protection for researchers to generate results before data become re-useable by other stakeholders. The EHDS regulation came into force on 25 March 2025.

Additionally, we supported the Luxembourgish government by advising on responsible and practical aspects of secondary use of personal data in the context of the national implementation of the EU Data Governance Act (DGA) Regulation (EU) 2022/868 into the Luxembourg draft bill, Projet de Loi 8395. Our ELSI team also engaged in preparing our compliance with our organisational obligations under the EU AI Act, which came into force on 1 August 2024.

Significant updates in the Legislative Scene in 2024

Engaging in national & international projects in building trust

Building trust does not only come from compliance and ethical consideration. Contributing to strategically important national and international projects and missions, is equally important in establishing trust in data services. The LNDS team engages numerous European projects where we contribute to the development of the secondary use of personal data for societal benefit (see Impact – European level involvement p.22).

Watch the video recap

Our diverse & growing team

61   **Employees** (excluding externals - consultants, freelance, interim)

37   **Average age** (age range between 23 and 66)

48   Employees on-boarded

16   Employees off-boarded

32   Nationalities

Headcount Trend

Jan24	Feb24	Mar24	Abr24	May24	Jun24	Jul24	Aug24	Sep24	Oct24	Nov24	Dec24
42	42	49	54	62	63	60	58	59	58	61	61

⬤ Permanent contract   ⬤ Fixed-term contract   ⬤ Internship

38% Women

62% Men
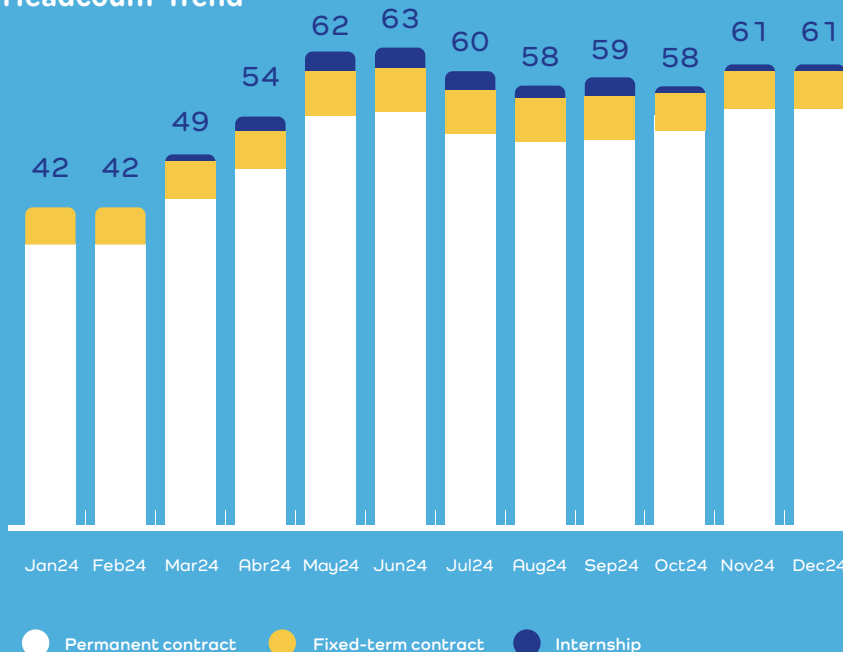
Watch the video recap

Year 2024 marked another impressive growth of the team. The expansion from 34 to 61 employees reflects our ongoing commitment to enhancing data services in Luxembourg. Representing 32 different nationalities, with 38% women, our team mirrors Luxembourg's multicultural environment and our belief in the power of diversity.

Embracing diversity & an inclusive workplace

We are dedicated to cultivating a diverse and inclusive workplace. Each team member brings unique expertise, strengthening our ability to manage impactful projects and support value creation for our partners. On 14 May 2024, we signed the Diversity Charter Lëtzebuerg, reinforcing our dedication to an inclusive work environment. We actively integrate the principles of the Diversity Charter into our daily activities, ensuring inclusivity remains central to our operations.

Employee well-being and work-life balance

We introduced wellness programs and flexible working arrangements to support a healthy work-life balance, enhancing our commitment to employee well-being.

➔ **Work from anywhere:** This new option allows work from international locations outside of Luxembourg for a limited number of working days per year, to support work-life balance of our international team.

➔ **Team building events:** We introduced individual budgets for team building events to foster collaboration and camaraderie, in addition to quarterly organisation-wide events.

➔ **6 Well-being sessions:** To promote mental and physical health, we organised sessions on breathing techniques, guided meditation, micro movements, and mindfulness practices.

Commitment to employee development

We introduced several training programs and professional development opportunities, including an online learning platform, to ensure our employees have the skills and knowledge to excel in their roles and drive innovation.

22 — Certifications for SAFe Training in advanced scrum master and product ownership.

20 — Internal Knowledge sharing-sessions.

90+ — Conferences and specialised trainings offered, including languages, IT security, operational excellence, communication and data protection trainings in Luxembourg and beyond.

1 — Leadership Development for the leadership team, focused on understanding individual working styles and improving team dynamics.

Fostering social impact

Our Social Impact Days initiative allows our people to dedicate two paid workdays per year to engage in social work or community service of their choice. The diverse experiences have fostered a strong sense of community and social responsibility among our team and make tangible difference in our local and global communities.

10 days of social impact work by **6** different employees, including our CEO

→ Cleanup project: helping to transform a severely neglected home and make a significant difference in the inhabitants' lives.

→ Volunteering at Second Harvest Food Bank in New Orleans / USA, preparing food and boxes for delivery to those in need.

→ Ju-Jutsu Bundesseminar in Germany as a Judo teacher: to teach and learn various martial arts techniques to develop new trainers.

→ Chaperone for anti-doping tests at the Paris 2024 Olympics supporting clean sports.

→ Participation in the European School's Christmas Market in Luxembourg, the proceeds of which support sustainable development projects in impoverished countries.

→ Assisting fundraising efforts at the Turkish Nephrology Institute's activities in Turkey to support important medical research and patient care.
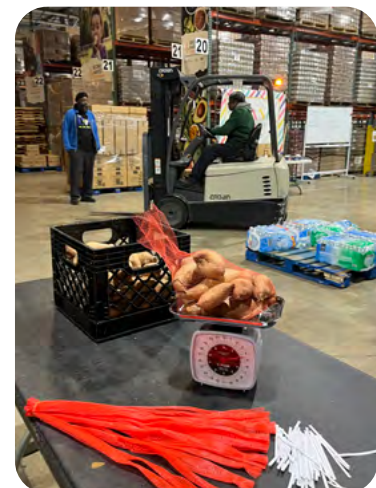
Service portfolio

Among our core mission, one area is to develop and deliver services to our users to generate value and impact via the reuse of data. We are committed to co-creating, developing and delivering data services that enhance data accessibility, security, and utility for our users. In 2024, we expanded our portfolio with new services and improved existing ones to better support Luxembourg's data ecosystem.

10
Services updated
with new features

5
New services
released
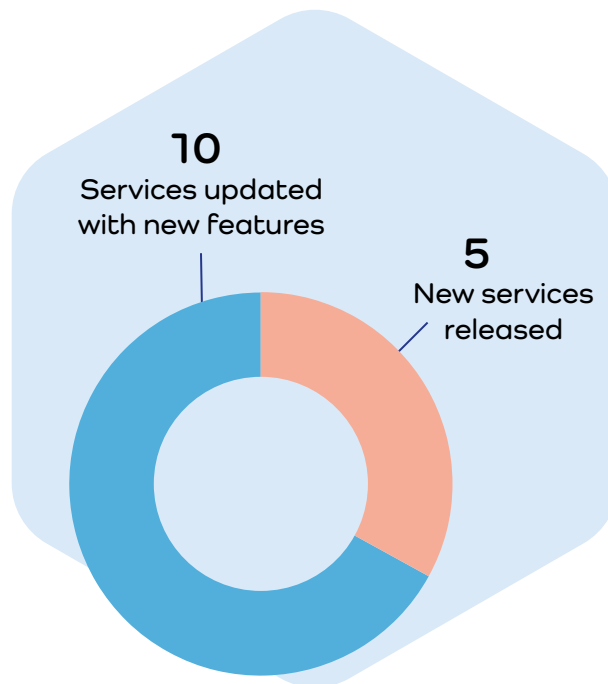
Services to enable reuse of data

Our service portfolio covers tools and infrastructure, data compliance, data management and stewardship, data content and quality, as well as community services. These services are co-created with our data partners, to respond to the needs of our data partners along the end-to-end data reuse journey. The end-to-end data journey combines the perspectives from both data user and a data provider, explaining the steps a data partner may need to solve challenges in the process of data reuse.

Watch the video recap

5 new services developed & released

As a result of our co-creation endeavor with our data partners, we developed and released 5 new services.

Secure Processing Environment

The Secure Processing Environment (SPE) service is our first infrastructure service. The SPE enables the safe reuse of confidential data by providing a sovereign, zero-trust virtual platform. Data holders can mitigate risks of unauthorised access and review outputs for sensitive information, while data users benefit from a secure environment for performing analytics. This collaborative solution is standards-compliant, flexible, and reliable, empowering data reuse with confidence.

Identifier-matching and Pseudonym Management Service

In collaboration with INCERT, we developed the Identifier-matching and Pseudonym Management Service to enable the pseudonymisation of sensitive data. Sensitive identifiers within data can be replaced with artificial identifiers (pseudonyms) to protect privacy while retaining the utility of the data. The customisable design of the service enables secure, privacy-preserving data sharing between organisations while allow data mapping and linkages when needed.

Research Data Archival

Recognising the challenges researchers and organisations face in preserving research data, the Research Data Archival service supports the preservation of research outputs, ensuring their long-term accessibility and reusability. It includes discipline-specific guidelines, practical recommendations, tailored training programmes, and a national helpdesk for real-time support.

Data Analysis and Visulisation Support

The Data Analysis and Visualisation Support service helps organisations articulate and address their data analysis needs effectively. By assessing project goals and recommending tailored methodologies, we support our partners to derive better insight from their data and empower organisations to create impactful visualisations.

Data Protection Training

This interactive e-learning course, tailored for public sector professionals, researchers, and data managers, combines foundational and advanced General Data Protection Regulation (GDPR) principles. The training includes practical examples and assessments to strengthen understanding.

In addition to releasing 5 new services in 2024, we updated and refined our 10 existing services to better meet the evolving needs of our data partners. These updates included adding new features, improving usability, and streamlining internal processes.

Data Project Consulting and Onboarding

Data Governance ELSI Expert Service

Data Quality and Curation

Data Access Request and Review

Data Management National Community of Practice

Data Cataloguing
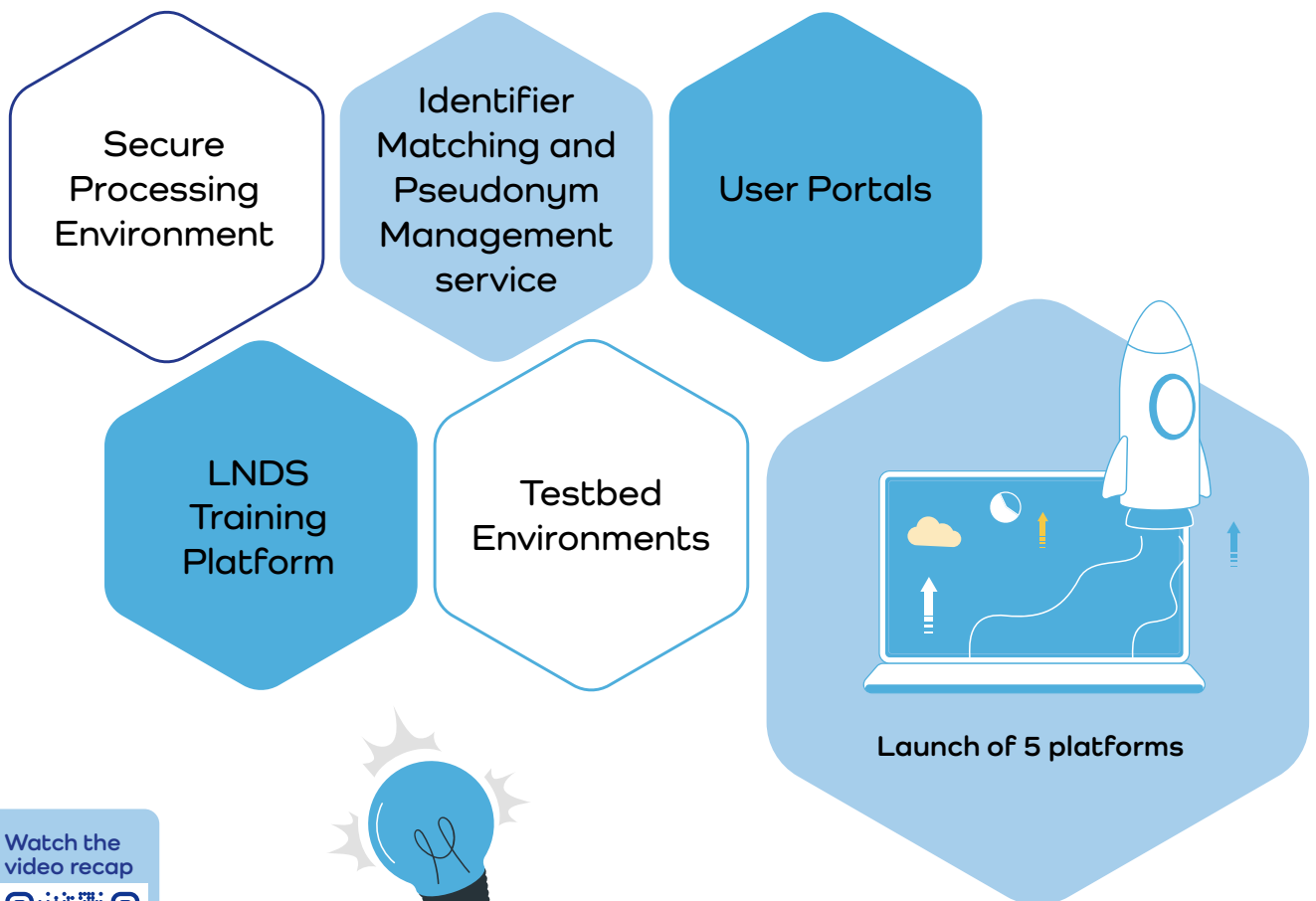
Data Management and Stewardship Support

GDPR Working Group

Synthetic Data Factory

Data Extraction, Enrichment & Merging

● Infrastructure & Tooling ● Data Stewardship ● Content and Quality ● Compliance ● Community Service

Technology & tooling for a data-driven ecosystem

Technology is at the core of our mission to enable secure, ethical and impactful use of data in Luxembourg and across borders. In 2024, we continued to shape our technological building blocks to support not only our operational needs but most importantly the broader public interests.

Secure Processing Environment

Identifier Matching and Pseudonym Management service

User Portals

LNDS Training Platform

Testbed Environments

Launch of 5 platforms

Watch the video recap
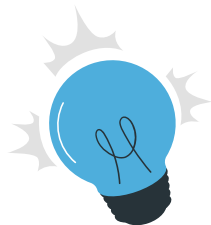
Laying a strong foundation

This year was about future-proofing our technological foundation in addition to stabilising our operations. We focused on a long-term perspective, by ensuring that our developments can grow and evolve along new policy developments, rapid technology advances and user expectations. We strengthened our internal platforms, improved service delivery and most importantly released critical components supporting the data journey.

Several key components were released in 2024, including:

→ **Secure Processing Environments** that enable secure re-use of data in a compliant remote virtual environment. These environments were designed based on International best practices and are compliant with international standards.

→ The **Identifier Matching and Pseudonym Management** portal that allows the management of pseudonymisation contexts and projects in a trustable way.

→ A **data space testbed** based on the Eclipse Data Space Connector, supporting experimentation and validation of secure data exchange scenarios across international borders.

→ The **LNDS Training Platform** supporting self-service virtual training capabilities with initial modules released on data protection training. This platform will complement existing national training offers and expand in the years to come.

→ A modern **Identity and Access Management** solution that serves as trusted gateway to authenticate users to our services. The solution also integrates with LuxTrust, the national digital identity provider, allowing trusted and seamless access to our partners from the public and private sector.

→ Modern and re-usable **user portal building blocks** for metadata catalogue browsing and access request management.

Tools to empower partners

We continued to invest in tools and tool development that enable our partners to innovate and collaborate more effectively. The LNDS Training Platform was launched to upskill users and foster a culture of continuous learning. Our testbed environments provide a safe space for experimentation, accelerating the development and validation of new solutions. We also develop custom tooling within data projects to support our partners. These can then be adapted and re-used for more general-purpose applications in the future.

Open & connected by design

Interoperability is key to our role in national and European data ecosystem development. We continue to build systems that are open by design, fully aligning with European standards and principles. By focussing on interface design, we remain adaptable to evolving technologies and can integrate with external systems seamlessly. Concretely this means we can adopt new technologies, such as emerging data space protocols or secure identity frameworks quickly, without overhauling our complete architecture.

Built to evolve

Our infrastructure is not static but built to adapt. From new technologies, shifting and upcoming regulations, or emerging social expectations, our infrastructure is ready to evolve. By expecting change rather than reacting to it, we position LNDS as a strong partner for a data-driven future that must be resilient, trustworthy and ethical.

Impact – Data projects

We deliver our services to the users via concrete data projects.
A data project is a defined project between LNDS and a partner organisation aiming to solve a problem, merge a gap, or to build new capacities.
The data projects usually involve the need to reuse Luxembourgish public sector data and have a well-defined scope. We call the partner organisations our data partners. A data partner can be a data user, a data provider, or both. By 2024, we have accomplished 23 data projects with our data partners.

23
Projects completed

106
Total projects encoded

Data projects by stage

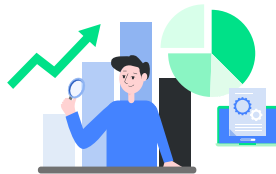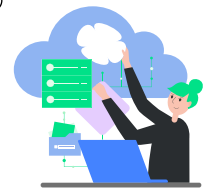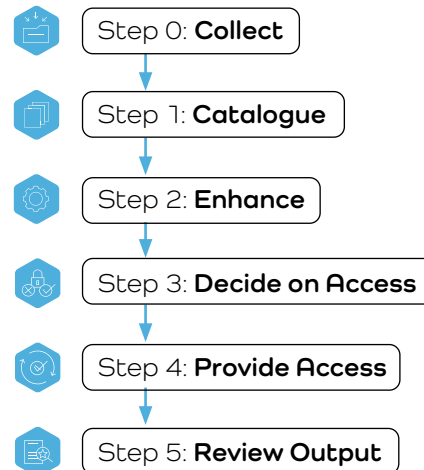| Stage	Value
Greenhouse	31
Conception & Initiation	19
Definition & Planning	6
Execution	13
Completed	23
Cancelled	14

Watch the video recap

Delivering our services throughout the End-to-End data journey

We use the End-to-End data journey as a framework to map real-world problems to our services and drive innovation through reuse of data. Our services encompass the entire End-to-End data journey, starting from data discovery all the way to analysing and reviewing results and supporting with archival. In the following pages, we provide examples of concrete data projects, supporting our data partners to solve challenges throughout the End-to-End data journey.

Data User Journey

Step 0: **Ideate**

Step 1: **Discover**

Step 2: **Request Access**

Step 3: **Access**

Step 4: **Analyse**

Step 5: **Review Result**

Step 6: **Finish**

Data Provider Journey

Step 0: **Collect**

Step 1: **Catalogue**

Step 2: **Enhance**

Step 3: **Decide on Access**

Step 4: **Provide Access**

Step 5: **Review Output**

Data projects by sector

- Population & Society — 3
- Energy — 2
- Justice, Legal system & Public safety — 2
- Transport — 9
- Science & Technology — 25
- Education, Culture & Sport — 9
- Environment — 11
- Economy & Finance — 11
- Health — 19
- Government & Public sector — 15

Supporting our data partners to
create impact

Data Discovery: Developing an internal data catalogue

The data project with the Administration de l'environnement (AEV) aims to enhance the management of AEV's extensive data sources and systematically inventory them. Using the Data Cataloguing service, we assisted AEV in developing an internal catalogue. This work included creating a structure to ensure relevance and usefulness of the internal data catalogue for AEV, all the way to developing a well-documented dataset registration and approval workflow. This project has also aimed to serve as a preparation work for the implementation of the Projet de loi n° 8395.

Data Discovery: Mapping datasets to a detailed inventory

Our collaboration with Direction de la Santé (DiSa) focuses on mapping their datasets to the interoperable metadata standard DCAT-AP. Using the Data Cataloguing service, we helped DiSa analyse its metadata and identify the "extract, transform, and load (ETL)" requirements, to align their metadata with the standard. This project defines a metadata indexing strategy to foster interoperability for DiSa, creating a detailed inventory of all data sources under their control. The outcome of this project would also contribute to the future work of implementing the European Health Data Space for the secondary use of health-related data.

Data Discovery: Development of a coherent data inventory strategy for the public sector

Our inaugural collaboration with the Ministry for Digitalisation focused on defining the first steps towards a harmonised strategy for systematically inventorying all data assets held in the public sector in Luxembourg. Driven by the emerging requirements of the national implementation of the Data Governance Act, the project brought together several national stakeholders, including the Information and Press Service (SIP), the National Library (BNL), the National Archives (ANL), Administration du Cadastre et de la Topograhie (ACT) and CTIE, to gain a shared understanding of the challenges involved. The outcome of the project was a short inventory strategy guide, which was used as the basis for a follow-on project for the Projet de loi n° 8395. We also completed the first phase towards the development of the national cataloguing metadata profile DCAT-AP-LU (based on the interoperable metadata standard DCAT-AP), newly released in March 2025.

Data Access: Anonymisation of electrical load profiles

In collaboration with Encevo and the Interdisciplinary Centre for Security, Reliability and Trust (SnT) at the University of Luxembourg, this pioneering project in Luxembourg's energy sector explores legal and technical requirements for anonymising smart meter data. It emphasises the necessity of tailoring anonymisation processes to specific data processing contexts and risks, and demonstrates that anonymisation must be context-specific, balancing data utility with privacy and regulatory compliance. Leveraging LNDS data services, tools and expertise, this project resulted in a position paper outlining suitable techniques for electricity consumption forecasting, and an implemented software based on the proposed algorithm. As the first project of its kind in Luxembourg's energy sector, this project sets a precedent for future initiatives and serves as a practical example for energy providers aiming to safely anonymise consumption data.

Data Access: Synthetic data – accelerating innovation while ensuring privacy

In a data project with the National Institute of statistics and economic studies, STATEC, we leveraged the Synthetic Data Factory service and expertise to generate high-quality, confidential datasets from Luxembourg's 2021 census. Using state-of-the-art methods and tools to generate synthetic data we could accelerate the data access of sensitive data and preserve essential data structure, while minimising disclosure risk. Our approach meets EU anonymisation and statistical disclosure guidelines, unlocking new opportunities for large-scale studies on sensitive personal data. By demonstrating its feasibility and utility, this project paves the way for broader, secure initiatives.

Data Quality: Optimising mobility through improving data quality

In our project with the Ministry of Mobility and Public Works, we assist in improving the data quality and interoperability of mobility data by adopting the Network Timetable Exchange (NeTEx) standards for the Observatoire Digital de la Mobilité (ODM), covering all bus lines in Luxembourg. The project involves developing a prototype workflow to ensure NeTEx compatibility, while addressing data quality issues. Structured in two phases over six months, this active data project aims to build a scalable, efficient solution for generating accurate timetables. Expected outcomes include enhanced data reliability, improved operational planning, and long-term benefits for public transport management and innovation.

Data Analysis: Closing the digital gap in ultra-high-speed connectivity

Partnering with MyConnectivity, we built further on the collaboration and the co-developed detector, with the goal to identify and quantify areas lacking ultra-high-speed connection points in Luxembourg and close the digital gap. Using our Data Enrichment and Data Analysis and Visualisation Support services, we further enhanced our data analysis and visualisation approach.

New features include data mapping per commune, integration of additional operators, improved visualisations with detailed tooltips, 5G grid information and layers export in GeoJSON format. These updates enhance interoperability and provide valuable insights, supporting the goal of closing the 5% gap in ultra-high-speed broadband connectivity in Luxembourg.
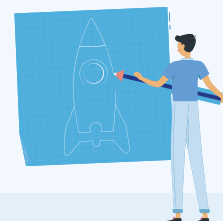
Data Management: Shaping a comprehensive data management plan on health data

Following the COVID-19 pandemic, the Laboratoire National de Santé (LNS) launched the EU-funded PANDOMIC project in 2023 to strengthen pandemic preparedness through integrated genomic surveillance. To support this, LNS partnered with us to further develop the project's Data Management Plan (DMP). Using our Data Management and Stewardship Support service, we helped shape a comprehensive DMP through workshops and reviews, ensuring robust infrastructure for sample collection, analysis, and reporting. The collaboration helped LNS align with funder expectations and document their diagnostic workflows, while also providing us with valuable insight into the legal and organisational frameworks of health data governance.
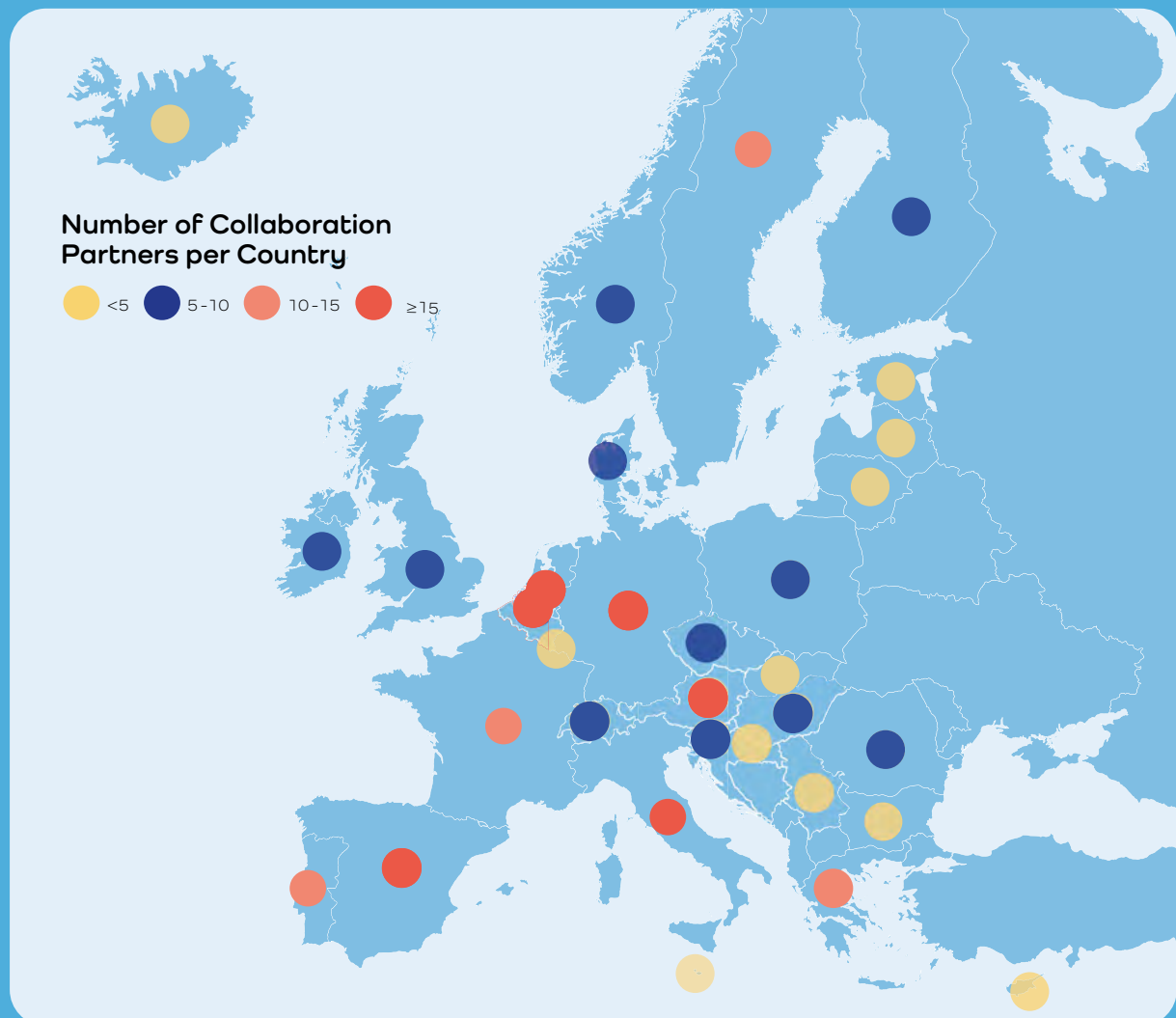
Data Management: Enhancing data management maturity through a data governance policy

In parallel with its data cataloguing efforts, the Direction de la Santé (DiSa) began drafting an organisational data management policy. We supported this initiative through our Data Management and Stewardship Support service, reviewing early drafts and recommending improvements based on best practices from leading data governance frameworks. Our feedback helped enhance the policy's clarity, structure, and alignment with emerging standards. Combined with internal input, DiSa refined the policy to support its data management maturity. Together, the policy and cataloguing efforts position DiSa to meet future data sharing requirements under Projet de Loi n° 8395 and the European Health Data Space.

Data Management: Supporting & enriching data management planning

We continued our collaboration with the Luxembourg Institute of Science and Technology (LIST) towards organisational solutions for Data Management Planning (DMP). Based on the results of our collaboration in 2023, LIST rolled out the Data Stewardship Wizard (DSW) to support their research teams in DMP development, aligning with funder requirements and LIST's own policies and processes. This year, we enriched LIST's DSW environment with additional DMP templates, such as the Horizon Europe template. We trained LIST staff to maintain existing templates and add new ones as necessary.

Impact – European level involvement

Alongside national projects and initiatives, we play an active role in major European initiatives. The international involvement is an essential instrument for LNDS' team to stay sharp in our business and expertise, making Luxembourg visible by contributing to EU and international development, and more importantly, to bring learnings, expertise and innovation back to Luxembourg, fostering knowledge sharing and interoperability.

Number of Collaboration Partners per Country

- <5
- 5-10
- 10-15
- ≥15

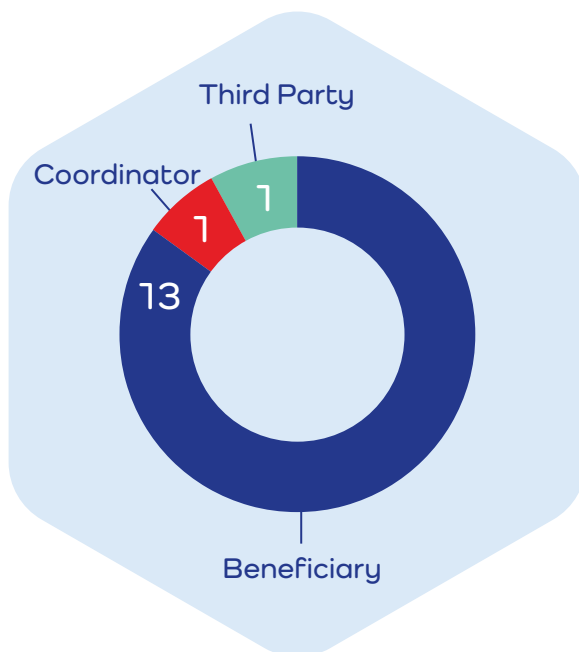## Projects to foster knowledge sharing & interoperability

By 2024, we have taken part in 15 European projects, of which landmark initiatives are described on the following pages. These projects span various sectors and purposes, from health data reuse to building an energy data space. Our involvement in European level projects and initiatives connects us with partners across the continent, and positions Luxembourg at the heart of Europe's digital transformation.

At LNDS, we contribute actively to the development of data spaces, standards, and best practices at the European level. This work includes strategic projects towards the implementation of the EU "1+ Million Genomes" (1+MG) initiatives (Geno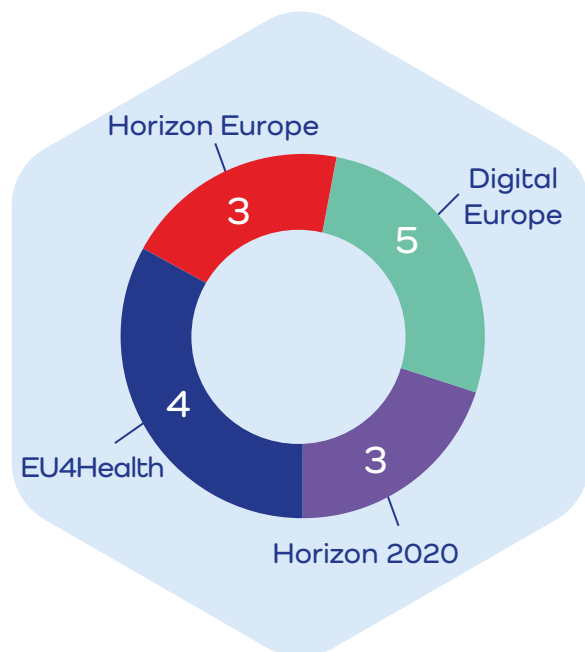me of Europe, European Genomics Data Infrastructure), the Second Joint Action Towards the European Health Data Space (TEHDAS2), as well as implementing services and tools for future Health Data Access Bodies (HDAB-LU). Together, these projects are bringing in 2,5 million euro of EC funding for Luxembourg.

In addition to bringing Luxembourg as a key participant on the European Union level for designing the data spaces for the future, our participation in European projects also supports the development of new data services and achieving interoperability across nations.

Roles

Third Party 1
Coordinator 1
Beneficiary 13

Programmes

Horizon Europe 3
Digital Europe 5
Horizon 2020 3
EU4Health 4

Watch the video recap

Subsidy projects

Genome of Europe (GoE)

Genome of Europe (GoE) is an ambitious project aimed at establishing the largest pan-European collection of genomic databases to date, bringing together genomic data from more than 100 000 individuals across Europe. The consortium includes 49 partner institutes from across 27 European countries. LNDS co-leads a work package dedicated to the Ethical, Legal, and Societal Issues (ELSI) of the project.

HDAB-LU

To support the implementation of EHDS for secondary use, the European Commission provides funding as Direct Grant to Member States to prepare and develop the services for future Health Data Access Bodies (HDABs) in the Member States. LNDS was nominated by the Ministry of Health and Social Security to apply and coordinate this Direct Grant project. This funded four-year project (HDAB-LU) aims to prepare and lay the technical foundations for the future HDABs in Luxembourg. Kicked-off in January 2024, the project will develop the digital business capacities, including Data Access Application Systems, Health Datasets Metadata Cataloguing, Secure Processing Environments, and Cross-Border Gateways.

Genomic Data Infrastructure (GDI)

The Genomic Data Infrastructure (GDI) is a cross-border collaboration with 54 partners from 20 countries, involving human genomic and related phenotypic and clinical data in order to support improved clinical diagnostics, treatments and predictive medicine for European citizens. In brief, the project targets better public health measures to benefit citizens, healthcare systems and the economy. LNDS leads the work packages in charge of data governance and long-term sustainability, and European level operations. LNDS is also leading the deployment of the functions of a national node as one of the vanguard nodes in the GDI network.

TEHDAS2

The Second Joint Action Towards the European Health Data Space – TEHDAS2, funded by the European Commission defines essential guidance towards HDAB implementation, and is a precursor for the preparation of the essential EHDS implementing acts. LNDS is contributing to the tasks related to "data discovery", "access to data", "safe and secure processing" as well as "serving citizen".

CAN.HEAL

By building synergies between public health and genomics across EU, the CAN.HEAL project presents a new approach of tackling the challenges which cancer poses to patients, their relatives, and the population at large. LNDS lead the work package focusing on developing legal, ethical and trust frameworks for clinical and public health cancer genomics. The project has been successfully concluded in March 2025.

ELIXIR-STEERS

ELIXIR-STEERS aims to enhance large-scale, cross-border federated analysis in the life sciences throughout the European Research Area. In particular, the ELIXIR-STEERS focusses on the need for good software and workflow management that are essential for reproducible and efficient analysis of life science data. By adopting common analysis tools and good workflow practices, ELIXIR-STEERS aims to minimise duplication, reduce energy consumption and lower the carbon footprint in computational life science. LNDS contributes to the development of infrastructure services to enable software best practices and capacity building in the ELIXIR Node.

ICUData4EU

ICUdata4EU addresses the challenges that Intensive Care Units (ICUs) are facing, such as aging society, combined with a shortage of specialised staff, with the possibility to also address crisis situations, such as future pandemics or wars. ICUdata4EU is deploying an ICU data space infrastructure to link and enable access and exploration of ICU databases on acute care, intensive care and telemedicine in the EU. LNDS leads the work package on "Design and Development of the Decentralised Data Sharing Platform".

EOSC-ENTRUST

EOSC-ENTRUST will build a European network of Trusted Research Environments (TREs) for sensitive data and develop a common blueprint for federated data access and analysis. The blueprint is also known as a reference architecture. TREs provide secure platforms for handling sensitive datasets, enabling data privacy and legal compliance in research involving confidential information. LNDS participates in the "TRE Provider Forum" to exchange expertise and good practices for the common interoperability blueprint, to advance convergence of TRE implementations, and to contribute to an updated set of requirements for the architecture and technology team.

EPND

The European Platform for Neurodegenerative Diseases (EPND) aims to revolutionise scientific breakthroughs in the effort to diagnose, treat, and prevent neurodegenerative diseases. The multidisciplinary consortium connects public and private leaders across Europe to combine technology, security, and governance for real, collective progress on neurodegenerative diseases. LNDS leads the work related to legal and ethical aspects.

International collaborations

ELIXIR

ELIXIR is a European life sciences infrastructure under the framework set by the European Strategy Forum on Research Infrastructures. ELIXIR brings together scientists from 23 countries and over 250 research institutes. As an intergovernmental organisation, ELIXIR connects life science resources, including databases, software tools, training materials, cloud storage and supercomputers, across Europe. The goal of ELIXIR is to coordinate these resources to form a single infrastructure, hence making it easier for scientists to find and share data, exchange expertise, and agree on best practices. Via collaboration with the Luxembourg Centre for Systems Biomedicine of the University Luxembourg, LNDS is a member of the ELIXIR Luxembourg Node and serves in the ELIXIR Board of Directors.
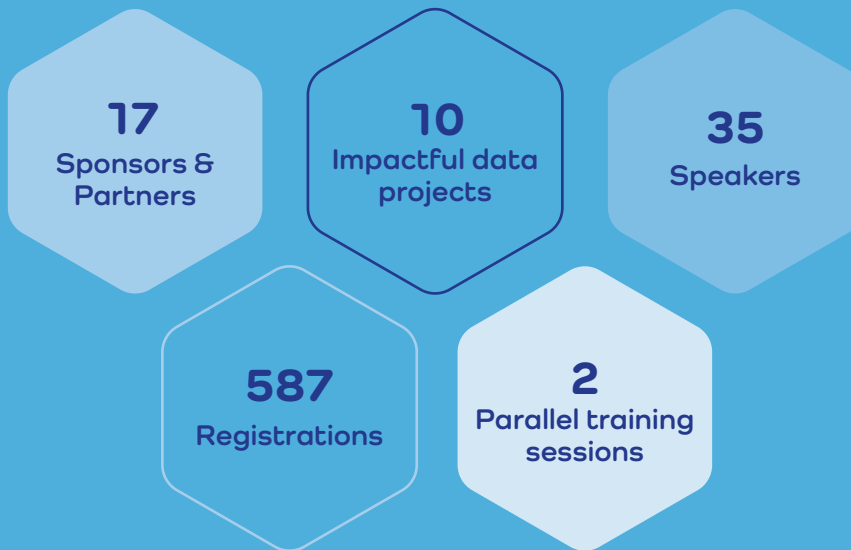
GAIA-X

Gaia-X is an initiative that develops a digital governance framework based on European values. Its goal is to create a federated, secure data infrastructure that can be applied to existing cloud and edge technology stacks. By emphasising transparency, controllability, portability, and interoperability across data and services, Gaia-X aims to foster an economy of data in various domains, spanning both private and public sectors. LNDS is an active Gaia-X member and part of the Gaia-X Board of Directors.

DSSC

The Data Spaces Support Center (DSSC) is an initiative focused on accelerating the creation of European sovereign data spaces. These data spaces aim to enhance data availability while upholding EU values. By fostering collaboration and ensuring secure data sharing, the DSSC contributes to a more interconnected and data-driven European landscape. The CEO of LNDS is an invited expert to the DSSC project, to provide advice and to contribute to the deliverables of this project.

Data Summit Luxembourg 2024

The Data Summit Luxembourg brings together local and international participants from academia, government, and industry to foster collaboration and advance data sharing and analysis.

17 Sponsors & Partners

10 Impactful data projects

35 Speakers

587 Registrations

2 Parallel training sessions

Innovation throughout the Data Journey

After a successful inaugural edition, the second edition of Data Summit Luxembourg took stage on the 11 December 2024 in the European Convention Center Luxembourg. In the presence of around 500 on-site participants, supported by 17 partners and sponsors, the second Data Summit Luxembourg lived up to the promise – to be larger in scope and scale compared to the first edition. After national level discussions in the morning, the Data Summit programme zoomed out to European level, discussing the importance of trust. To counter the challenge of data and AI today - we need to build trust, be persistent and have a solid strategy and preparation.

Thank you to our partners, sponsors, guests, and staff for taking Data Summit Luxembourg to a new level. The next Data Summit Luxembourg will take place on the 2 December 2025, in the European Convention Center Luxembourg, with a new update on the realm of public sector data and AI.

Watch the video recap

Key moments & takeaways

➔ Keynote addresses by **Minister Stéphanie Obertin** and **Minister Elisabeth Margue**.

➔ Engaging panel discussions on data governance and digital futures, practical training sessions on data protection and data stewardship

➔ Insights from European perspectives; to create value from data, we need a stronger network of trust.

➔ Impactful stories of data reuse across sectors from Data Partners, demonstrating how secondary use of data can support innovation and informed policymaking in areas such as mobility, health, environment, and education.

➔ A forward-looking closing keynote exploring Web 3.0 and the evolution of data ecosystems.

Events & media

LinkedIn

25 % growth since 2023

3 782
followers by end of 2024

9,2 %
engagement rate

172 065
post impressions

85 638
members reached

Website

~8 500
website visitors

3min30s
average visit duration

46 %
average bounce rate

25
news articles published

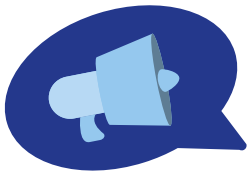## News-letters

426
subscribers

99 %
retention rate

Press

3
press releases

In 2024, we actively strengthened our presence across national and international stages, through participation in key events and conferences, as well as expanding our media footprint through our active website (lnds.lu) and our growing LinkedIn platform.

Sharing expertise & bringing knowledge to Luxembourg through events

Locally, we hosted the second edition of Data Summit Luxembourg in December, welcoming around 500 participants and 17 partners to explore innovation throughout the data journey. Our presence at the Nexus2050 event in June and numerous other events and conferences across tech, data, AI and health, supported building public visibility and trust.

Internationally, we participated in several major events and conferences such as the Official Trade Missions to Japan and Belgium, as well as various key data and technology centred events. In addition we took part in numerous conferences related to European-wide projects and initiatives on the evolving landscape of data sharing and data spaces development, including ELIXIR, Gaia-X, and meetings related to various EU subsidy projects (see Impact sections p.18).

Engaging in events and conferences enables us to contribute to meaningful dialogues with stakeholders from across sectors, share expertise, and represent Luxembourg in the evolving European data ecosystem.

Evolving our media presence with a growing website & social media

We strengthened our media outreach through publishing our first annual report, engaging our website, starting our LNDS monthly newsletter and growing our LinkedIn presence, closing the year with over 3,700 followers.

Our website, lnds.lu, which we launched at the end of November 2023, grew in activity and content. Online, our website was visited by around 8500 people who spent on average 3,5 minutes on the site, reflecting interest in our activities and data-driven innovation.

Our growing online and offline presence supports us to anchor both LNDS and Luxembourg as a trusted voice for responsible and collaborative data use in Europe.
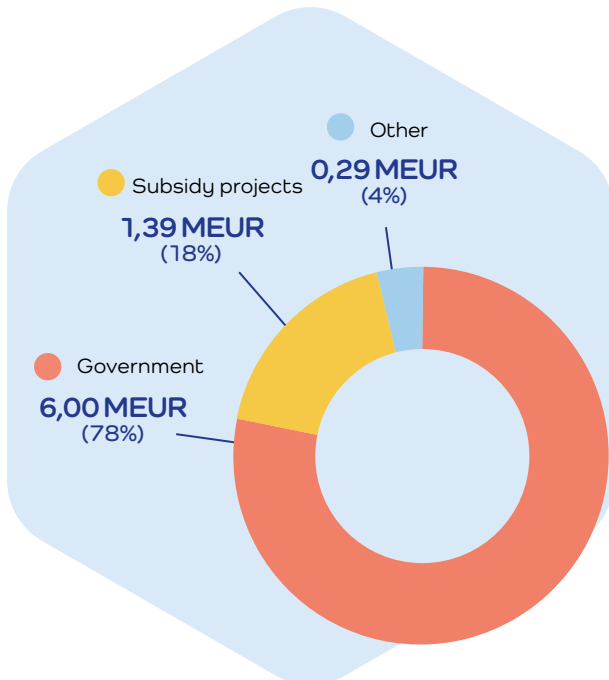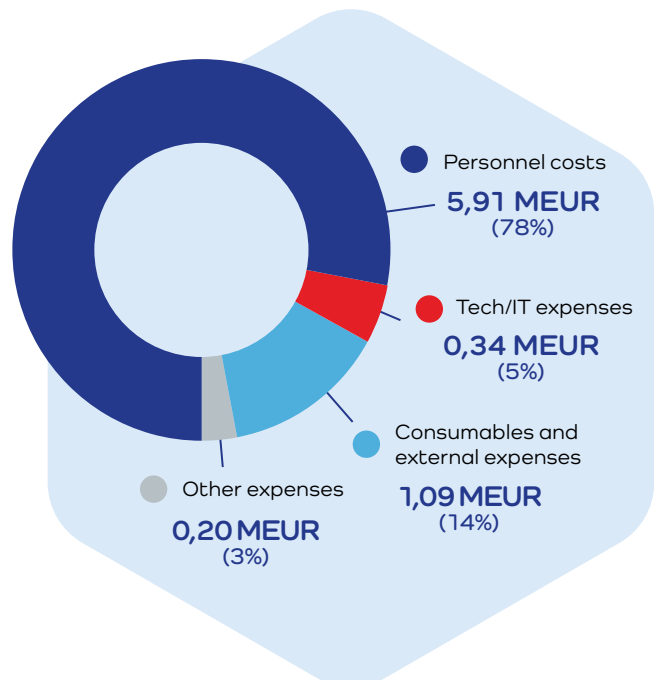
Watch the video recap

Financial report

The accounts were audited by external auditors Grant Thornton Luxembourg and approved by the LNDS Board of Directors and the Annual General Assembly. The financial results are summarised here below.

Sources of funding

Other
0,29 MEUR
(4%)

Subsidy projects
1,39 MEUR
(18%)

Government
6,00 MEUR
(78%)

Cost categories

Personnel costs
5,91 MEUR
(78%)

Tech/IT expenses
0,34 MEUR
(5%)

Consumables and external expenses
1,09 MEUR
(14%)

Other expenses
0,20 MEUR
(3%)

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Balance sheet (in euros)

ASSETS	2024	2023
Subscribed capital unpaid	0	750,00
Formation expenses	623,24	872,53
Fixed assets	313.848,21	285.637,86
Current assets	9.637.057,19	9.442.626,47
Prepayments and accrued income	106.971,53	46.805,68
Balance sheet total (Assets)	10.058.500,17	9.776.692,54

CAPITAL, RESERVES AND LIABILITIES	2024	2023
Capital and reserves	7.636.639,82	7.491.719,20
Provisions	446.759,30	242.738,01
Creditors	654.350,62	478.016,10
Deferred income	1.320.750,43	1.564.219,23
Balance sheet total (Capital, Reserves and Liabilities)	10.058.500,17	9.776.692,54

Profit and loss account (in euros)

	2024	2023
Net turnover	115.660,99	20.900,28
Other operating income	7.388.568,58	5.329.146,17
Other interest receivable and similar income	178.977,11	2.915,42
Total incoming	7.683.206,68	5.352.961,87

	2024	2023
Raw materials and consumables and other external expenses	-1.334.992,04	-667.187,90
Staff costs		
a) Wages and salaries	-5.353.759,35	-2.663.684,99
b) Social security costs	-553.755,20	-289.624,62
Value adjustments	-159.318,02	-84.934,41
Other operating expenses	-136.181,61	-35.980,94
Interest payable and similar charges	-279,84	-64,61
Total Outgoing	-7.538.286,06	-3.741.477,47
Profit* for the financial year	144.920,62	1.611.484,40

*Profit is transferred to the reserves, to further invest into LNDS projects
and services (not distributed to the owners / shareholders).

Future outlook

We can already share an outlook of what 2025 has in store.

Watch the video recap

In 2025, we continue to contribute both locally and globally, supporting the implementation of the new law proposal, participating in European subsidy projects, preparing for the European Health Data Space, and bringing data space frameworks and technologies to life in Luxembourg. Internally, we also continue to invest in compliance and trust-building efforts and aim to become ISO 27001 and 27701 certified.

Supporting the national strategies on data and AI, will take a front seat in 2025. At the same time, we continue to mature and to evolve our data services, tooling and enabling capabilities. We will contribute to the kickstart of the Data Factory, as described in the newly published national Data Strategy. In addition, our involvement in the Luxembourg AI Factory will bring AI to a more prominent position also within our activities and our data projects.

This year's Data Summit Luxembourg will also place a stronger focus on AI. The third edition will bring up critical discussions of data (re)use, data sharing and how to enable and to accelerate positive societal impact through responsible use of data and AI.

These highlights set the stage for our activities in 2025. We look forward to welcoming you at the next Data Summit Luxembourg on 2 December 2025, or at an earlier occasion to discuss and collaborate.

Watch the Annual Report 2024

Catch the highlights as told by our people in short-videos

Our responsibility

LNDS is committed to sustainable reporting and carbon offsetting linked to the publication of this report.

See the certificate

Stay informed

Receive updates on LNDS activities, new services, impact projects.

Subscribe to our **newsletter!**

Join the Data Summit Luxembourg

Follow updates on the journey leading up to the leading data and AI event of the year:

datasummit.lu

Thank you

Thank you to our partners, contributors, and community for your ongoing support. We look forward to continuing to shape Luxembourg's data ecosystem together.

Thank you to everyone who has contributed to building the foundation and delivering fast results in LNDS in 2024:

Adam, Aleksandar, Alemayehu, Alexis, Aline, Aline, Alper, Alyssa, Ana, Anais, Antoine, Ariane, Basheer, Bert, Bishoy, Bruno, Bruno, Camille, Carolina, Catharina, Christophe, Clement, Coline, Danielle, Davit, Denis, Dominique, Ekaterina, Eline, Emiliana, Erin, Fabien, Francesco, Gabriela, Gaston, Gergő, Guilherme, Hadiza, Inderpal, Ines, Irena, Irma, Jacek, Jad, Jaroslav, Jephter, Karim, Kerstin, Khaoula, Kheireddine, Laure-Anne, Leonard, Luuk, Magdalena, Mariann, Marie-Laure, Marina, Mario, Matthieu, Max, Mickael, Milica, Kacem, Nene Djenaba, Nijat, Pallavi, Pauline, Peiman, Pinar, Rafael, Rafael, Rafael, Regina, Rene Peter, Romain, Ruth, Sebastien, Seha, Zia, Silvia, Sulejman, Thomas, Thomas, Todor, Ulf, Ulisse, Victor, Vincent, Vitalii, Wei, Xavier, Yohan, Younès, Youssef, Zeineb.

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