Familiarise yourself with the latest **Project Updates** `p.12`

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gaia-x

"Trust remains a fundamental piece of the puzzle to resolve. In this sense, the Gaia-X Trust Framework represents a crucial element in connecting the various complementary pieces necessary to make this European vision effective"

Alberto Palomo

HIGHLIGHT

Meet Alberto Palomo, Gaia-X's New CSO

Picture from Saioa Hermosa – Ministerio de Asuntos Económicos y Transformación Digital

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FOREWORD – WELCOME OPENING

Dear readers,

Welcome to the latest edition of the Gaia-X Magazine, a testament to our ongoing commitment to fostering digital sovereignty and data sharing in the European cloud ecosystem. In this edition, we are excited to showcase the significant strides made in the Gaia-X project, highlighting the innovative solutions and collaborative efforts that continue to shape the Gaia-X initiative and the European cloud infrastructure as we know it today.

Furthermore, we are pleased to provide you with insightful community updates, showcasing the diverse voices and perspectives that contribute to the vibrant Gaia-X community. From success stories to best practices, these updates underscore the collective strength and shared vision that drive our mission forward.

Lastly, we are thrilled to present a comprehensive overview of upcoming events and initiatives that will further engage and empower our community. From virtual conferences to networking opportunities, these events serve as valuable platforms for knowledge sharing, collaboration, and growth within the Gaia-X ecosystem.

We invite you to dive into this issue and explore the dynamic developments, inspiring stories, and exciting opportunities that define Gaia-X. Together, we are shaping the future of cloud infrastructure and paving the way for a more connected and resilient digital future.

Warm regards,

Ulrich Ahle

> *To be sustainable, it is necessary, in a digital world, to have solutions that are accepted and adopted on a global scale.*
>
> **Ulrich Ahle**

02

MAIN STORY
HIGHLIGHTED

In every edition of our magazine, we are thrilled to present you with a highlighted story, offering a comprehensive and captivating exploration of a significant topic. Within this section, you can expect to find engaging interviews with key figures, expert analysis, and the latest updates.

In this highlighted story we would like to introduce you to Alberto Palomo, Gaia-X's new Chief Strategy Officer.

02

Meet Alberto Palomo, Gaia-X's new Chief Strategy Officer

Jodie Emery, Internal Communications Officer at Gaia-X

On 5 April 2024, Gaia-X European Association for Data and Cloud appointed Dr. Alberto Palomo as the Chief Strategy Officer (CSO), a new role within the organisation set to enhance its reach and impact.

Alberto Palomo is no stranger to Gaia-X, he previously chaired the Governmental Advisory Board for the last two years and has worked closely with the organisation at that time. Whilst chairing the board, he also held the position of Chief Data Officer for the Government of Spain, a novel technopolitical role aimed at prescribing data innovation policy. An integral part of this role was compiling various reference architectural models to generate a governmental model to advance Spain's national industries and its public sector towards the Euro sovereign data economy vision. Alberto's previous experience and his close ties to Gaia-X will set him in good stead for his new position as CSO, giving him valuable insights into the organisation's operations. Working together with the CEO and management board, Alberto will implement strategies that create value from the Gaia-X standard, drive global reach, enhance collaboration within existing data spaces, and align with governments and key European industries, to ensure that Gaia-X deliverables satisfy both.

Strategy

In the next six months, Alberto Palomo along with the Strategy Team, plan to facilitate Gaia-X Members, Hubs, Ecosystems, and Lighthouse Projects in shaping their digital value propositions within data and infrastructure federated ecosystems. This initiative is poised to transform how organisations leverage data and digital solutions, facilitating faster times to delivery, and also encouraging participation across small and medium-sized enterprises (SMEs) so they can also capitalise on this novel Data Economy.

In this sense, the team aims to analyse the levers that facilitate the creation of a Gaia-X-based ecosystem where demand for datasets, algorithms and computing infrastructure is met by a set of innovative and fast-to-respond providers. This matching of demand-and-offer is key for the effective deployment of sovereign digital solutions, the European federated way for the data-driven digitalisation of the future. This collaborative approach will not only enhance operational efficiency in building new data solutions, but also reduce entry barriers for SMEs, enabling them (the largest group within the European corporation spectrum) to compete on a level playing field.

Picture from Saioa Hermosa – Ministerio de Asuntos Económicos y Transformación Digital

However, given the complexity of the interconnecting parts across the different activities and initiatives within the federated data and cloud landscape, Trust remains a fundamental piece of the puzzle to resolve. In this sense, the Gaia-X Trust Framework represents a crucial element in connecting the various complementary pieces (organisational, legal, functional and technological) necessary to make this European vision effective. The Gaia-X Labels, built upon the Gaia-X model, address the governance layer of these federated ecosystems, uplifting cybersecurity, privacy, transparency, openness, composability and compliance values. Altogether, this builds Trust.

Furthermore, the deployment of this coherent and harmonised model enables users to better leverage preexisting private and public investments in the data and cloud areas. And it also facilitates government authorities enhancing digital governance, as per the novel set of European regulations, for which Gaia-X will continue to support practical implementations.

Outside the Gaia-X Office

Originally from Madrid, Alberto Palomo completed postgraduate studies at Cambridge and Edinburgh in the UK, prior to obtaining a PhD in Mathematical Physics. Alberto then went on to work at an R&D lab in Canada developing numerical simulations for artificial neural networks. He has also worked in the USA, where he led the technical development of Data Science applications for a large electric utility company.

Picture from Alberto Polo – Secretaría de Estado de Digitalización e Inteligencia Artificial

At a personal level, he is an amateur ice hockey player, influenced by his many years living in Canada and the USA. He is also currently finalising a chapter on an EU Regulation and Policy book edited by the European Commission.

As Alberto Palomo assumes his new role as CSO and leads Gaia-X's strategic initiatives, he and his team will work to empower its members and revolutionise how organisations leverage their data and digital solutions. We are confident that Alberto's expertise will significantly contribute to the growth and development of our association, and we look forward to witnessing the impact he will have as Gaia-X works towards creating a digitally integrated and sustainable future.

Gaia-X
PROJECT
DEVELOPMENTS

This dedicated section about project developments aims to bring you closer to the forefront of the progress made on the Gaia-X project. It discusses the latest advancements, initiatives, and achievements both from a technical and operational perspective. Whether you are part of the Gaia-X community, an industry professional seeking information or simply an avid reader with a curiosity, this section is for you.

Technology

Operations

03

TECHNOLOGY

The Gaia-X Academy

Julien Vanwambeke, Functional Architect at Gaia-X
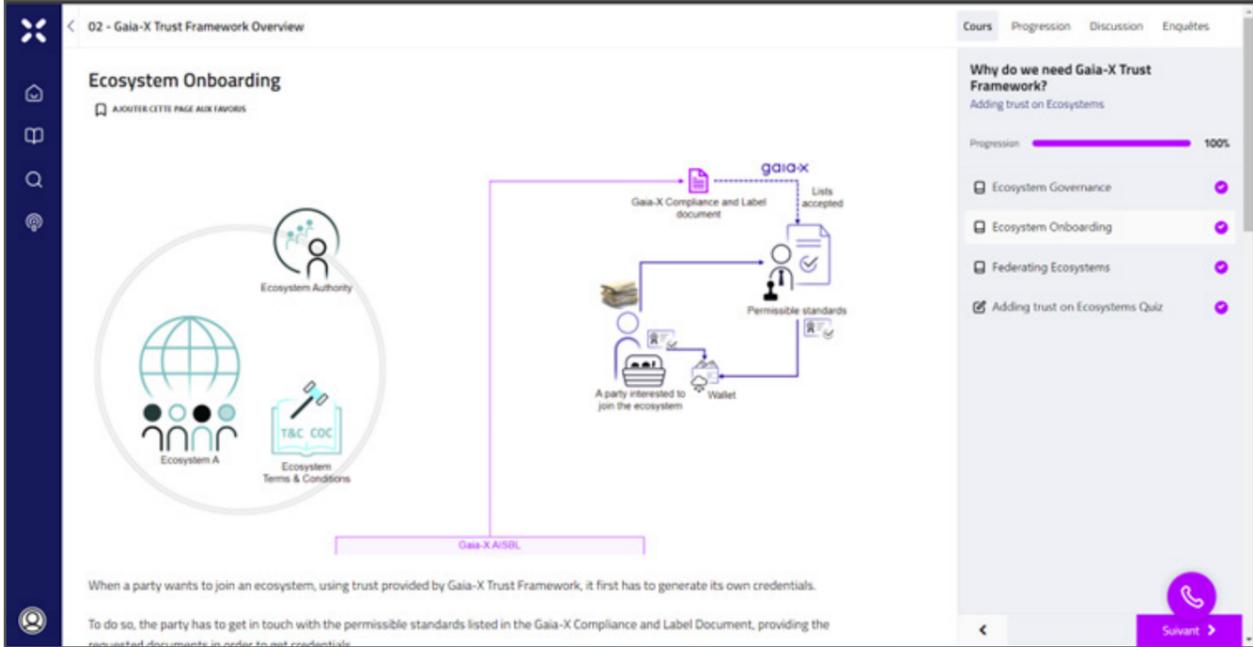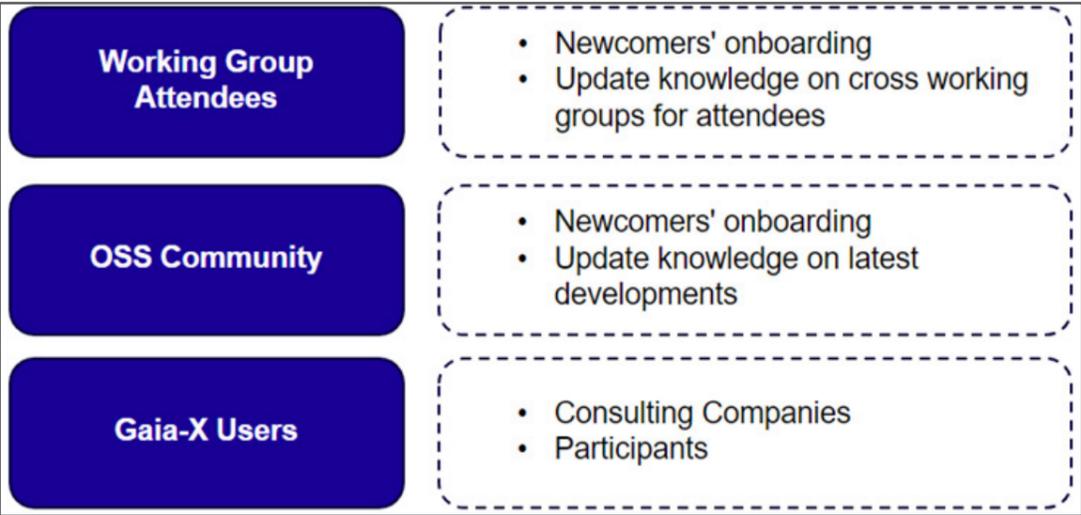
Why a Gaia-X Academy?

Since last year's Tech-X in Bilbao, the Gaia-X Team has determined that a tool is required to help people **better understand the Association and its mission**. This tool will aim to target profiles of interested personas who wish to know more about Gaia-X concepts.

It will not only help interested personas, but it will be a vital tool for our long-established members and newcomers to the Gaia-X world who for instance, may require introductions and more information about the association and its deliverables. Furthermore, it could help **working group attendees** who want to update their knowledge of what has been produced by other working groups in different fields, aiding knowledge sharing and cross-communication.

Gaia-X is also relying on a strong **OSS Community**. People involved in it are facing the same kind of questions but maybe more on a technical side: **newcomers onboarding** and updates on the **latest developments**.

Then, we also need to provide some content to **Gaia-X users**. Indeed, **participants** who have to exchange data using Gaia-X Concepts need clear explanations about what Gaia-X is and what to do. These participants can also rely on **Consultancy companies**, who are also interested in training.

As you can see, **functional and technical knowledge** must be spread over the Gaia-X landscape, and we are convinced that a good way to do it is to publish courses to explain all the concepts involved.

That's why we started building the **Gaia-X Academy**, released in mid-April 2024 with some basic courses as a good starting point.

What kind of content?

The Gaia-X Academy is constantly evolving, trying to fit what could be interesting for all its learners.

So far, the Academy has a lot of courses giving functional or technical details, but also some tutorials.

Let us give a quick tour of the available courses starting with the functional ones:

- **Gaia-X Fundamentals**: the doorstep to enter the Gaia-X Academy. This module explains the concept and core values of Gaia-X, its organisation, and its governance model. It will give you an overview of what we do and who we are, the scope and deliverables of Gaia-X.

- **Gaia-X Trust Framework Overview** explains where it comes from and its purpose.

- **Catalogue Browsing Overview** gives you the basics to understand how data catalogues interact with participants using Gaia-X concepts.

- **Contracts and Policy Reasoning Overview** guides you through the understanding of what a contract is, and what policy reasoning means.

All these courses are open to everyone.

The **technical courses and tutorials are members-only courses**, to help our partners go beyond the concepts to understand how they are built and how to use them.

Now, you can find on the Gaia-X Academy, the following courses:

- **Gaia-X Trust Framework Technical Focus** explains the technologies and standards used, and also how the Gaia-X components involved in the Gaia-X Compliance are working.

- **Catalogue Browsing Technical Focus** gives you clues about the technologies and standards used and also describes how the Gaia-X Credential Event Services and the Gaia-X trust indexes are working.

- **Policy Reasoning Technical Focus** details how the Gaia-X Policy Reasoning Engine works.

- **How to deploy a Gaia-X Digital Clearing House**, as a tutorial, gives you an extensive description of the actions required to deploy all the technical components involved in a Gaia-X Digital Clearing House.

How to access the Gaia-X Academy?

As mentioned, **the Gaia-X Academy is open to everyone** using the URL: https://academy.gaia-x.eu/

On the login page, you have two options.

If you are already a Gaia-X member, then your access will be easy, because you only need to click on the **members platform** button to use your Gaia-X Account to enter the Academy (by the way. If you are employed by a Gaia-X member but do not have access to the member's platform, reach out to the primary contact in your organisation. That person has the right to create your account).

If you are not employed by a Gaia-X member, you have to follow a standard account creation process.

On the Academy, you can browse the courses you're enrolled in, beginning your journey to discover Gaia-X concepts.

What's next for the Gaia-X Academy?

The Gaia-X Academy is evolving all the time.

First, all the feedback from our learners is taken into account, and some **evolutions** in the tool may arrive soon.

Then, the Gaia-X Academy team is working to constantly release **new courses** including new **tutorials**, explanations about the new **documents published by the association**, but also some more **functional and technical content**.

No need to worry—all learners will receive email notifications about new courses, and updates will also be posted on Gaia-X social media channels.

Pierre Gronlier appointed new Chief Innovation Officer at Gaia-X

Jodie Emery, Internal Communications Officer at Gaia-X

On 24 May 2024, the Gaia-X Board of Directors announced the appointment of Pierre Gronlier, currently serving as Chief Technology Officer (CTO), as the new Chief Innovation Officer of Gaia-X AISBL. Pierre has played a key role within Gaia-X over the last few years, previously heading up the CTO team.

In his new role, Pierre will closely collaborate with the Executive Team and Board of Directors to shape and execute the association's innovation strategy. His responsibilities will include developing and overseeing the innovation roadmap, ensuring it aligns with the contributions and goals of the association's members.

Pierre will also work with the executive team to maintain a cohesive vision and mission. He will mentor and engage with staff and volunteers at all levels to create a culture of growth and open innovation. A key part of his role will further include the effective communication of the innovation objectives to members, funders, policymakers, industry stakeholders, and partners, working to build trust and credibility. Additionally, Pierre will ensure that Gaia-X's innovation initiatives comply with relevant regulations and align with the strategy and directives from the Business, Policy Rules, and Technical Committees.

This marks an exciting new chapter for Gaia-X. With Pierre at the helm of our innovation strategy, continuously exploring and implementing innovative solutions, we are confident that our association will further lead the way in digitalisation and the future of the data economy.

OPERATIONS

Enjoy lower membership fees as an end user

Cosmina Gantner, Digital Communications Director at Gaia-X

Gaia-X introduced the end user membership fee starting with the General Assembly, which took place on 24 June 2024.

During its General Assembly held on 24 June 2024, Gaia-X members voted and approved the newly introduced End User Membership Fee. This decision marks a strategic shift in the organisation's funding structure, aiming to sustain operations and enhance services for its members. The introduction of the end user membership fee reflects Gaia-X's commitment to long-term sustainability, and its proactive approach to meeting the evolving needs of its stakeholders, precisely as end users, constitutes a valuable asset for our association and the broader ecosystem. This financial model is designed to ensure continued growth and effectiveness in advancing Gaia-X's goals within the digital ecosystem.

This membership level is dedicated to companies and organisations that use Information and Communications Technology (ICT) but not ICT companies or organisations as such.

A yearly membership fee of 40,000 Euro was agreed upon for eligible end-users in the highest membership group, which is significantly lower than the previously considered fees of 45,000 Euro or 75,000 Euro.

New End User Membership Fee:

Annual Consolidated Revenue [EUR]	Annual Reduced Membership Fee [EUR]
> = 10bn	40.000
> = 1bn	20.000
> = 500m	10.000
< 500m	5.000

The new End User Membership Fee will apply to new members from the date of the Second OGA (24 June 2024). Existing members will be eligible to adopt this new fee structure starting from the following year. To benefit from the new rate, existing members must submit their applications by the end of June 2024.

Gaia-X acknowledges the importance of ICT as a critical enabler across various sectors and aims to provide tailored benefits and support to such organisations within the broader context of ICT utilisation.

During the General Assembly, we launched two new membership options: the **Start-up Membership Fee** and the **Logo Membership**, designed to enhance recognition and visibility within the Gaia-X community.

Start-up Membership Fee

- Applicable to Full Membership
- The start-up must be younger than 5 years
- The start-up must have an annual revenue of less than 5 million EUR
- This fee is only for new memberships and does not apply to former members
- The membership fee will be revisited after 3 years for a possible update to a different membership category
- The fee is set at 1000 EUR

Logo Membership

The Gaia-X Logo Membership is intended to provide recognition and visibility to projects and dataspaces that meet specific Gaia-X compliance criteria. To be eligible for Logo Membership, entities must adhere to the following conditions:

- The Logo Membership does not confer any rights as outlined in the Articles of Association and Bylaws of the Gaia-X Association, including voting rights or participation rights in the AISBL Working Groups, Committees, Board of Directors, or General Assembly.
- Utilise an accredited Gaia-X Digital Clearing House (GXDCH).
- Offer at least 5 Gaia-X compliant services through an accredited GXDCH.
- Apply for Logo Membership, which grants the right to use the Gaia-X Logo solely in direct relation to and reference the approved project or dataspace.
- The start-up must be younger than 5 years
- The start-up must have an annual revenue of less than 5 million EUR
- This fee is only for new memberships and does not apply to former members
- The fee is set at 750 EUR

04

COMMUNITY

The Gaia-X Community plays an instrumental role in shaping our organisation. This section celebrates and highlights the invaluable contributions made by Gaia-X Hubs, Lighthouses and Members and showcases their stories, expertise, and the remarkable impact they have had on our journey. We will explore their innovative solutions, industry insights, and the collaborative projects that have propelled us forward. As we embark on this exciting journey of showcasing our community, we extend our heartfelt appreciation to every one of them. Their dedication, expertise, and unwavering belief in our shared goals have been instrumental in propelling us towards greater heights.

Members Stories

Hub Highlights

Lighthouse Updates

04

MEMBERS STORIES

Cubbit

How Cubbit is supporting Gaia-X's mission by delivering digital independence to every MSP and enterprise in Europe

Alessandro Cillario, Co-CEO & Co-founder, Cubbit

We've partnered with Gaia-X to help build a European framework for cloud storage. Like Gaia-X, we believe digital sovereignty is key, and that's why we conduct ongoing outreach on the subject and consistently host expert-led webinars.

With this guiding principle, we're building Cubbit, Europe's first geo-distributed cloud storage enabler. Organisations can use our platform to aggregate resources from anywhere, be it on-prem, in the cloud or at the edge, and build their own fully customisable cloud storage in minutes, with no upfront investment required.

Cubbit enables every partner and enterprise worldwide to create their dedicated cloud storage network. Moreover, multiple partners can join forces to create a federated network in the spirit of Gaia-X. The first example was the Next Generation Cloud, where hundreds of Italian companies collaborated to create a

sovereign infrastructure. In Cubbit, every data is encrypted, fragmented, and replicated across multiple locations within one or more European countries, ensuring data localisation and hyper-resiliency against ransomware and disasters.

Two years ago, we launched with 50 companies. Today, we count more than 300 organisations across Europe — including globally renowned partners like HPE, Leonardo, and Exclusive Networks. Our solution is platform-agnostic and we're open to collaborating with any and all Gaia-X members.

Decentralised identities and self-sovereign identities in Gaia-X

Frédéric Bellaiche PhD, Vice President of Technology and Research, Dawex

The digital advancements have transformed data into a valuable asset. Nevertheless, current data storage technologies and identity management give rise to apprehensions regarding privacy, security, and user autonomy. As a response to these challenges, decentralised identities (DiD) and self-sovereign identities (SSI) have emerged as promising remedies. This article aims to delve into the concepts of DiD and SSI, examining their importance within the context of Gaia-X's recent work.

Decentralised identities (DiD) refer to a paradigm where individuals have control over their digital identities without relying on a central authority or intermediary. Traditional identity systems often suffer from issues like data breaches, single points of failure, and lack of user autonomy. DiD can tackle these shortcomings by leveraging blockchain and distributed ledger technologies to create a more secure and user-centric approach.

Self-sovereign identities (SSI) can be seen as a specific subset of DiD. SSI emphasises the individual's right to control their own identity information. SSI empowers users by enabling them to store their identity attributes in a secure, tamper-evident manner while granting them the ability to selectively share these attributes with service providers or other entities. This approach ensures privacy, reduces reliance on third parties, and promotes user autonomy.

The European Gaia-X association promotes the standards to establish European data ecosystems based on guiding principles such as data sovereignty, interoperability, and trustworthiness. Ultimately, Gaia-X looks at enabling a federated and secure data infrastructure to foster innovation and strengthen European digital sovereignty.

In this context, decentralised identities and self-sovereign identities play a crucial role. By adopting these principles, Gaia-X can provide a robust framework for managing user identities while ensuring privacy and data protection. Users will have full control over their personal information, deciding when and with whom they share it, while service providers can rely on trusted and verified identities without being burdened by the complexities of managing personal data.

The benefits of DiD and SSI in Gaia-X are the following:

1. **Interoperability**: DiDs facilitate seamless interoperability between different services and platforms within the Gaia-X data spaces. This enables users to navigate multiple applications and services with a unified identity, eliminating the need for multiple accounts and reducing administrative burdens for orchestrators of the ecosystems.

2. **User Empowerment**: SSIs put users in control of their digital identities, allowing them to manage their data according to their preferences. Individuals can build trust by selectively disclosing verified information, fostering a more transparent and accountable digital environment.

3. **Privacy and Security**: both DiD and SSI reduce the reliance on centralised infrastructure for Identity Management, minimising the risk of data breaches and unauthorised access. Users can share only the necessary attributes, preserving their privacy while still meeting service providers requirements.

Decentralised identities is a transformative concept that can revolutionise the way we manage digital identities. In the context of the Gaia-X works, DiD and SSI provide a powerful framework for empowering users, ensuring privacy, and promoting data sovereignty. By embracing these principles, each data space can foster a thriving digital ecosystem built on trust, transparency, and user-centricity. As the world continues to grapple with evolving data challenges, DiDs offer a promising path towards a more secure, inclusive, and privacy-respecting digital future.

Myra Security

Protecting what matters – in the digital world

Stephan Meisenzahl, Senior Manager Revenue Operations, Myra Security

Myra Security protects the digital availability of European public authorities, banks, insurance companies and other critical institutions. (Illustration: Myra Security)

Myra Security is a German cybersecurity company that protects digital business operations and embodies European values. We have joined Gaia-X to leverage our extensive experience in safeguarding critical institutions to contribute to the development of a robust and secure data infrastructure for Europe.

Myra provides a certified platform to protect digital business processes from infrastructure and application-level threats. Our technology monitors, analyses and filters malicious Internet traffic before virtual attacks can cause real damage. To ensure that we meet the highest quality and regulatory standards, we undergo regular audits and comprehensive certifications.

Gaia-X and Myra share a strong belief in the value of European champions that offer a high level of security, privacy and transparency.

Security in a time of uncertainty

As cyberattacks become more sophisticated and threats increase, being prepared is key to ensuring business continuity. Therefore, we work closely with governments and businesses to develop effective solutions that meet the highest standards. Last year alone, Myra's systems recorded a 59 percent increase in attempted attacks against government agencies, banks, insurance companies, and other critical institutions. This underlines the importance of security solutions for European organisations to tackle the harsh reality of the current threat landscape.

Stephan Meisenzahl, Senior Manager Revenue Operations at Myra Security. (Photo: Myra Security)

Luxembourg launches Dataspace 4 Health: A Pioneering Dataspace and Governance Framework for Secure and Compliant Health Data Exchange

Dr. Marc Berna, CEO of the Robert Schuman Hospitals Group (HRS) , **Olivier Posty,** Managing Director of NTT Ltd. Luxembourg, **Prof. Yves Le Traon,** Director of the University of Luxembourg's SnT, **Prof. Dr. Ulf Nehrbass,** CEO at Luxembourg Institute of Health (LIH), **Bert Verdonck**, CEO at LNDS , **Ian Tewes**, General Director at Agence eSanté, **Ralf Hustadt,** Special Advisor, Digitalisation, Data Economy and National Gaia-X Coordinator, at Luxinnovation

On 25 March 2024 the official project launch of **Dataspace 4 Health** (Dataspace4Health) was announced, a groundbreaking open ecosystem designed to revolutionise secure and compliant health data exchange in the country and beyond. This innovative initiative aims to transform healthcare by leveraging the power of data while fully adhering to EU regulations and Gaia-X standards. It aligns perfectly with the national and European digital strategies. This collaborative project is led by NTT DATA, Hôpitaux Robert Schuman (HRS), Luxembourg Institute of Health (LIH), the University of Luxembourg, Agence eSanté, Luxembourg National Data Service (LNDS) and is co-financed by the Ministry of Economy of Luxembourg as part of Luxembourg's national Gaia-X strategy.

Ushering in a New Era of Healthcare

The Dataspace4Health project will bring numerous advances to Luxembourg's healthcare landscape. One of the key benefits is enhanced patient care, which includes improved diagnoses and treatments, a better understanding of diseases, and effective preventive measures. Additionally, the platform will foster research and innovation by providing secure access to health data, enabling research that will ultimately lead to improved healthcare outcomes. Furthermore, the platform will help build a connected ecosystem by establishing a secure and efficient layer for data sharing across institutions, fostering collaboration and advancements.

The project is motivated by the need for a new approach to health data sharing that respects the GDPR and the patient's rights. Currently health data is often siloed, fragmented and underutilised, which limits the potential for innovation and research. The project will explore how to use Gaia-X as a European framework for data spaces that ensures data protection, security and interoperability. It will also demonstrate the benefits of data-driven innovation and AI for healthcare and research, such as improving diagnosis, treatment, and prevention of diseases, enhancing patient outcomes and quality of life, and advancing scientific knowledge and discovery.

The Dataspace4Health project has several key highlights. Firstly, it is a Gaia-X Lighthouse candidate in healthcare for Europe, setting the standard for secure and compliant health data exchange across the continent. A concept fully supporting the goals of the international precision health initiative Clinnova, coordinated by LIH. Secondly, the platform is a collaborative effort led by a consortium of domain and industry leaders and open to onboard additional members. Thirdly, it will be exploring and unlocking new medical treatments through data and AI. Lastly, the built ecosystem is use case driven and has been validated through initial use cases in diabetes and oncology, paving the way for future applications in other healthcare sectors.
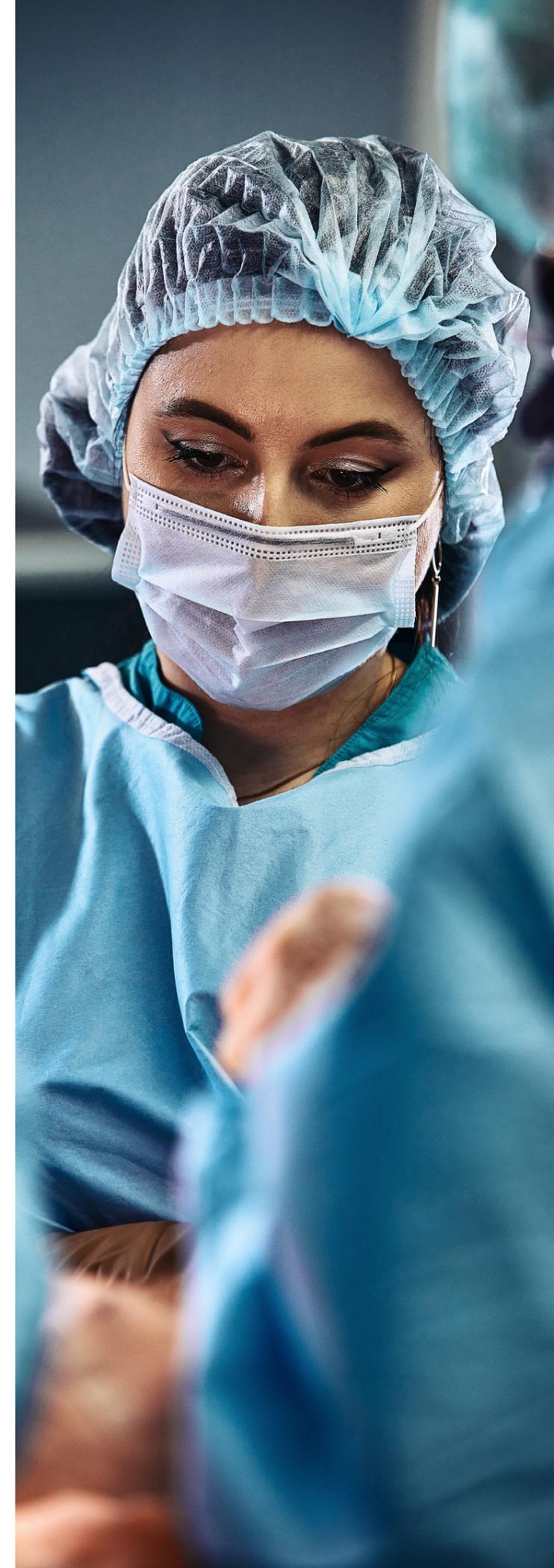
- Diabetes affects over half a billion people globally, and this number is projected to increase to 783 million by 2045. Diabetes is not a uniform disease (there are type 1, type 2…), causing different complications that need individualised care. AI is seen as a potential technology to prevent them. A decision support system based on AI that can prevent diabetes complications might be a key step in the treatment of Diabetes. In one use-case, that reliable decision support system uses thousands of anonymised patient records linked to a Digital Twin of patients from LIH to provide personalised treatment.

- Cancer is the second leading cause of death in many countries, after cardiovascular diseases. Every year, cancer affects tens of millions of people worldwide, and more than half of them die from it. While hospitals are in charge of diagnosis and therapy, researchers bring novel solutions, treatments, and insights on disease mechanisms to the oncology field. The primary goal of this use-case is to implement a precision oncology programme and a federated data architecture that enables better data interoperability and exchange between healthcare providers and research institutions.

Dataspace4Health not only focuses on two of the most important medical use cases in healthcare, it also pays attention to the legal foundation and uses European Regulation to address health data sharing in Luxembourg.

A Collaboration for the Future of Healthcare

Olivier Posty, Managing Director at NTT Ltd Luxembourg, expresses the vision behind this initiative, "Dataspace4Health represents a significant stride in our mission towards digital transformation in healthcare. Our aim is to build a healthcare ecosystem that is more connected, secure, and efficient. With this open platform, we're not only leveraging our global technological expertise but also integrating our deep understanding of local needs."

Dr. Marc Berna, CEO of Hôpitaux Robert Schuman, emphasised the significance of the collaboration: "The Dataspace4Health project represents a pivotal moment for healthcare in Luxembourg. We see this initiative as a crucial step towards realising our vision of a digitally transformed healthcare system."

Driving Research and Innovation

Prof. Yves Le Traon, Director of University of Luxembourg SNT comments on the research opportunities, "Our role is to drive the AI component of this project, developing new algorithms for medical research, thus opening new frontiers in healthcare innovation."

Prof. Dr. Ulf Nehrbass, CEO at Luxembourg Institute of Health, adds to this vision, "At LIH, we focus on translational research to support improving healthcare outcomes."

Transforming Healthcare Data Utilisation

Bert Verdonck, CEO at LNDS explains the transformative nature of the project, "Dataspace4Health allows us to bring the data space concepts to Luxembourg and to pioneer its application in the health domain, to advance the capabilities of clinicians and to the benefit of their patients."

Ian Tewes, General Director at Agence eSanté adds, "The Dataspace4Health project reinforces the role of Agence eSanté as technological third party in the healthcare sector. At the Agence, we are deeply involved in facilitating this collaboration."

Ralf Hustadt, Gaia-X National Coordinator for Luxembourg concludes: "Health is perhaps the hardest challenge to address on the European scene. It involves working together with different stakeholders and meeting high standards for security and compliance. That's why I'm very pleased that the consortium members of Dataspace4Health joined forces and approached this issue."

A Major Investment in the Future of Healthcare

Dataspace4Health represents a multi-million investment in the future of healthcare in Luxembourg. This visionary project paves the way for secure and compliant health data exchange, ultimately leading to a healthier future for all.

About Dataspace4Health

Dataspace4Health (D4H) is a project aiming to build a Health Dataspace through interconnecting various stakeholders from the healthcare ecosystem. By creating a secure health dataspace offering Gaia-X compliant services, the project aims to enable new healthcare services and improve patient outcomes. D4H is a collaboration between NTT DATA, Hôpitaux Robert Schuman (HRS), Luxembourg Institute of Health (LIH), the University of Luxembourg, Agence eSanté, and Luxembourg National Data Service (LNDS). The goal is to interconnect various systems from the healthcare sector, offering secure health data to researchers while preserving data ownership and privacy. D4H is based on the EU Strategy for Data and the Gaia-X initiative, which aims to create a federated and secure data infrastructure. This initiative is an innovative step towards the digital transformation of the healthcare sector in Luxembourg and Europe.

About NTT Ltd.

As part of NTT DATA, a USD 30 billion IT services provider, NTT Ltd. is a leading IT infrastructure and services company serving 65% of the Fortune Global 500 and more than 75% of the Fortune Global 100. We lay the foundation for organisations' edge-to-cloud networking ecosystem, simplify the complexity of their workloads across multicloud environments, and innovate at the edge of their IT environments where networks, cloud and applications converge. We enable a connected future. Visit us at www.services.global.ntt

About Hôpitaux Robert Schuman

The Robert Schuman Hospitals (HRS) in the Grand Duchy of Luxembourg were created in 2014 from the union of the Clinique Bohler, the Hôpital Kirchberg and the ZithaKlinik located in Luxembourg City and the Clinique Sainte Marie located in Esch-sur-Alzette: around 311 physicians and more than 2,300 employees are committed to providing high-quality care and a personalised service with a strong human element. Visit us at www.hopitauxschuman.lu

About Luxembourg Institute of Health

The Luxembourg Institute of Health (LIH) is a public biomedical research organisation focused on precision health and invested in becoming a leading reference in Europe for the translation of scientific excellence into meaningful benefits for patients.

LIH places the patient at the heart of all its activities, driven by a collective obligation towards society to use knowledge and technology arising from research on patient derived data to have a direct impact on people's health. Its dedicated teams of multidisciplinary researchers strive for excellence, generating relevant knowledge linked to immune related diseases and cancer.

The institute embraces collaborations, disruptive technology and process innovation as unique opportunities to improve the application of diagnostics and therapeutics with the long-term goal of preventing disease. Visit us at: www.lih.lu

About the University of Luxembourg (SnT)

SnT, the Interdisciplinary Centre for Security, Reliability and Trust (SnT), is a leading research and innovation centre within the University of Luxembourg. SnT is driven by a mission to revolutionise the world of Information and Communication Technologies (ICT) by focusing on security, reliability, and trust. Visit us at: https://www.uni.lu/snt-en/

About Agence eSanté

Agence eSanté is Luxembourg's national eHealth competence centre in charge of facilitating the sharing and exchange of patient health data between healthcare professionals, with the aim to facilitate an optimal medical follow-up and care coordination. This is pursued both through the provision of its e-health services and indirectly through the development of national policies aimed at promoting the interoperability of the various IT systems used in the healthcare sector.

The scope of this exchange and sharing of health information is not limited to the national level, but also covers the aspect of cross-border exchange. Visit us at: www.esante.lu

About Luxembourg National Data Service

Luxembourg National Data Service (LNDS) is a brand of PNED G.I.E. an economic interest group created by the Luxembourg Government, to implement Luxembourg's strategies in research, innovation, and digitalisation. LNDS enables value creation from secondary use of data, for public

and private partners and supports the sharing and re-use of public sector data, in a trustable manner. The LNDS service portfolio includes know-how, capabilities, tools, infrastructure, and data services. Through efficient & responsible use of data and improving the secondary use of data, LNDS will support the acceleration of economic, ecological, and societal transitions. Visit us at: www.lnds.lu

About Luxinnovation GIE

Luxinnovation as Innovation Agency, empowers companies to innovate today to be ready for tomorrow and contributes to the development of the economy as a whole by identifying innovation opportunities and fostering collaborative innovation projects that stimulate the development of a sustainable, competitive, and digital economy.

Set up as an Economic Interest Group, Luxinnovation is supported by the Ministry of the Economy, the Ministry for Higher Education and Research, the Luxembourg Chamber of Commerce, the Luxembourg Chamber of Skilled Crafts and FEDIL – The Voice of Luxembourg's Industry. Visit us at www.luxinnovation.lu

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4.2.1   **Hub Austria**

Unveiling the Future of Data-Centric Administration: Insights from the New Gaia-X Position Paper

Jodkowski Agnes, Gaia-X Hub Austria

In April, at the ADV Data Excellence Conference in Vienna, a groundbreaking position paper titled 'Navigation: Gaia-X and the Future of Data-Centric Administration' was unveiled. This paper, a collaborative effort between the Gaia-X Hubs of Germany and Austria, marks a significant milestone in envisioning the future of digital governance.

The presentation took place during a panel discussion featuring Brigitte Lutz, a board member of Gaia-X Hub Austria and a representative of the City of Vienna, and Martin Traunmüller from AIT. They were joined by members from the Gaia-X Hub Germany and Roland Fadrany, COO of Gaia-X AISBL, demonstrating a robust cross-border collaboration.

The term 'Smart Cities' and 'Smart Regions' has been part of the urban lexicon for over two decades, epitomising the evolution of urban areas through advanced data networking. This concept encompasses the integration of sustainable practices across ecological, economic, and social spheres, facilitated by sophisticated information and communication technologies. The new position paper takes these ideas further, exploring how data-centric approaches can transform the administrative functions of cities and regions.

One of the critical discussions in the paper is the expansion and enhancement of public services through data-driven systems. The increasing involvement of both public and private sectors in digital value chains is crucial, especially as cities seek more sustainable, resilient methods of development. The need for digital tools that can propel transformations in energy, transportation, and infrastructure is more pressing than ever.

The position paper provides a comprehensive guide on the technical and organisational prerequisites for data-centric administration. It addresses the administrative challenges and legal frameworks that need consideration and offers ten strategic recommendations. These recommendations are designed to assist practitioners in navigating the complexities of digital transformation in their administrative practices.

Moreover, the paper highlights the potential of the Gaia-X initiative as a pivotal tool for enhancing data networking capabilities that are essential for municipal administration. It also delves into various technical aspects of digital transformation and presents several use cases that exemplify the advantages of digitalisation and data orientation.

This new position paper is not merely a document; it is a roadmap that outlines the next steps for connected, data-centric administrations. It aims to foster a deeper understanding among stakeholders about the benefits of digital transformation, encouraging them to engage actively in this evolving landscape. As cities and regions continue to adapt and evolve, the principles laid out in the Gaia-X position paper will undoubtedly play a crucial role in shaping the future of urban and regional administration.

Link: https://www.gaia-x.at/en/news/new-gaia-x-position-paper-the-future-of-data-centric-administration/

The panel discussion participants (from left to right): Brigitte Lutz (Gaia-X Hub Austria & Stadt Wien), Martin Traunmüller (AIT Austrian Institute of Technology), Roland Fadrany (COO of Gaia-X AISBL), Anna-Lena Meiners (Civitas Connect e.V.), Winnie Schöngut (acatech – Deutsche Akademie der Technikwissenschaften), Nora Abu-Oun (Daten-Kompetenzzentrum Städte und Regionen DKSR) and Juliane Schmeling (Fraunhofer FOKUS Institut für Offene Kommunikationssysteme).

Data space for the energy transition

Oliver Warweg, Prof. Dr. Michael Laskowski and **Thomas Sprenger,** Gaia-X Hub Germany

With the expansion of renewable energies, the volume of data in the electricity market is growing exponentially.
Image by prostooleh on Freepik

Electricity producers and grid operators have been using an early form of data space for longer than other sectors. However, with the restructuring of the German energy market, the old order is reaching its limits. The energy domain of the Gaia-X Hub Germany is looking for new approaches to data-based cooperation in an increasingly complex market environment.

Renewables drive demand for data-based cooperation

Since the turn of the millennium, customers in Germany have been able to choose their own electricity supplier. In order to coordinate the growing number of supplier changes, the industry introduced its own system for automatic data exchange in 2006. The so-called market communication (maco) not only handles business transactions. It also intervenes in the schedules of power plants in order to counteract overloads in the electricity grid. Similar to a data space, maco organises the exchange of data between market participants through fixed roles as well as standardised processes, formats and transmission rules.

Today, 25 years after market liberalisation, renewable energies are forcing the second major restructuring of the German electricity market.

Tens of thousands of wind turbines, hundreds of thousands of battery storage systems and heat pumps and millions of solar panels and electric cars are driving up the coordination effort for the increasingly fragmented business. Once again, data is the key to a stable supply - just a lot more data and more and more of it in real time.

By 2021, interventions in generation capacity were limited to just under 700 large power plants. Today, maco also has to process data from hundreds of thousands power plants that generate electricity from solar, wind and biomass on a decentralised basis. In the long term, the granularity will increase by further orders of magnitude: The energy industry will then have to cope with many millions of data points, right down to the individual heat pump: Too much for a data space in which 98% of information was still exchanged via encrypted emails until recently!

Local and regional energy suppliers at a disadvantage

One of the main problems is the high level of fixed costs of the transformation that lies ahead. Small and medium-sized utilities in particular are overwhelmed by this. This is because the size of the company does not affect the cost of running and upgrading the maco. Whether you are a large
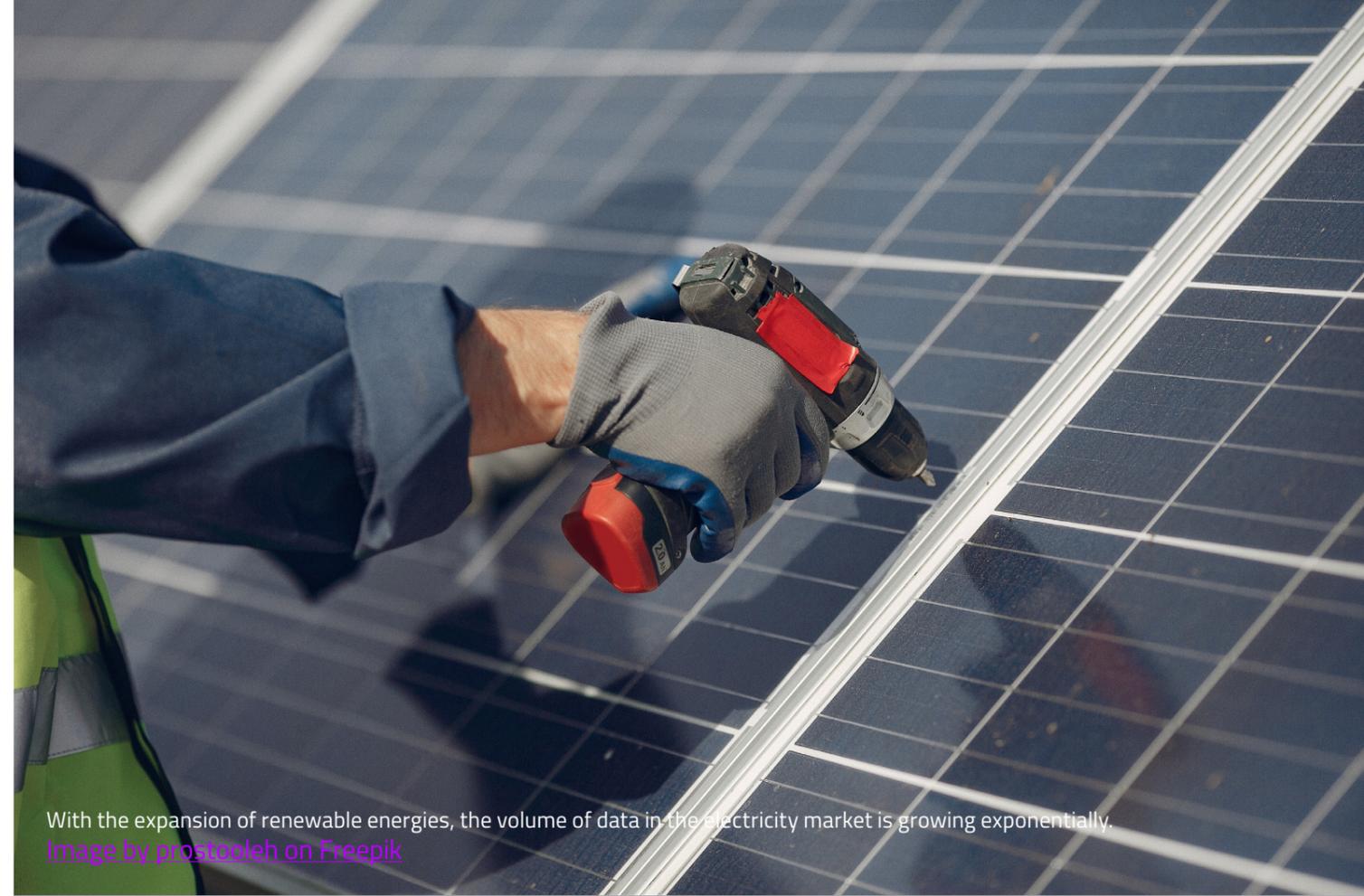
supplier or a municipal utility, the bill is roughly the same for everyone.

One of the reasons for this is that suppliers operate the technical infrastructure for maco themselves. High data protection hurdles prevent market participants from outsourcing this work and obtaining maco services from specialists.

This results in rigid IT structures in many places. Small utilities in particular are dependent on a small number of infrastructure and software suppliers. What is missing is a broad range of equivalent and interoperable IT and data services. Instead, the industry fears that only the dominant software houses and platforms will ultimately benefit and that technical dependency will grow as digitalisation continues.

Ecosystem for more flexibility and innovation in the energy market

At the Gaia-X Hub Germany, utilities, grid operators, research institutions and service providers are therefore looking for a better alternative. Under the umbrella of the energy domain, they want to support the development of a data space and a data ecosystem for the energy industry based on Gaia-X.

Their goal: more flexibility and innovation in digital services for the energy industry. Instead of doing everything themselves, smaller market participants in particular should be able to outsource infrastructure, software and data services and change suppliers more easily. The European data ecosystem Gaia-X supports this project with uniform standards, rules and processes for digital value chains at all three

levels of data-based cooperation:

- at the IT infrastructure level for hardware, software and cloud services,

- at the level of data spaces and data cooperation

- and at the shared ecosystem level of different energy and data services.

Advantages of Gaia-X for market communication

With Gaia-X, the domain wants to create the conditions for transparent and at the same time more efficient data infrastructures in the energy market. This would not only make it possible to adapt market communication to the increased complexity, but also to expand the circle of technical suppliers. This is because Gaia-X guarantees that data owners retain control over their data at all times. The outsourcing of maco services would therefore be legally compliant. Trusted service providers would enable utilities and grid operators to spread the costs of digital modernisation across more shoulders. At the

same time, local suppliers and municipal utilities would also gain a business perspective in a sustainable energy market.

New market for data services in the energy industry

However, a data ecosystem based on Gaia-X not only offers advantages in terms of costs and division of labour. Secure data exchange with anonymous third parties, powerful programming interfaces and artificial intelligence create the conditions for a completely new market for data-based energy services.

In such an environment, start-ups could develop processes for checking the quality of billing-relevant data from intelligent electricity meters, known as smart meters. Specialised software companies would find a sales market for AI services that calculate more reliable forecasts for grid usage and balancing processes.

Electricity customers and local green electricity producers would also benefit from greater service

convenience. Data services could, for example, monitor and display the current progress of a change of supplier. Electricity production and consumption in one's own household could be coordinated using apps and optimised in terms of costs and carbon footprint. Customers could make their consumption data available to comparison portals at times and have optimal market prices calculated.

More operational resilience

The development of a data ecosystem based on Gaia-X can even make a contribution to security of supply in Germany: in order to adapt their systems flexibly to changing market conditions and absorb technical problems, suppliers and grid operators need a resilient IT and data infrastructure.

Its advantage: Gaia-X data spaces not only allow data to flow more efficiently. Reference architectures, technical standards and common rules create an ecosystem for infrastructure and data services that are interoperable and therefore

interchangeable. This reduces dependency on individual technology providers and increases the overall operational resilience of the energy system.

Gaia-X can finally create an open market for IT services with more competition and freedom of choice for companies and customers, new business models, and high legal certainty for all participants at scalable costs.

Connectivity to other sectors

Despite its own rules and market laws, the digitalised energy sector is not a closed event. The energy system is producing more and more data that is also valuable for other sectors. Vice versa, grid operators and utilities benefit from data from other sectors such as the transport sector, industry or digitally networked communities. Thanks to openness and interoperability, Gaia-X data ecosystems can pay off across sectors as a driver of data-based value creation and network across the energy system more effectively with other sectors.
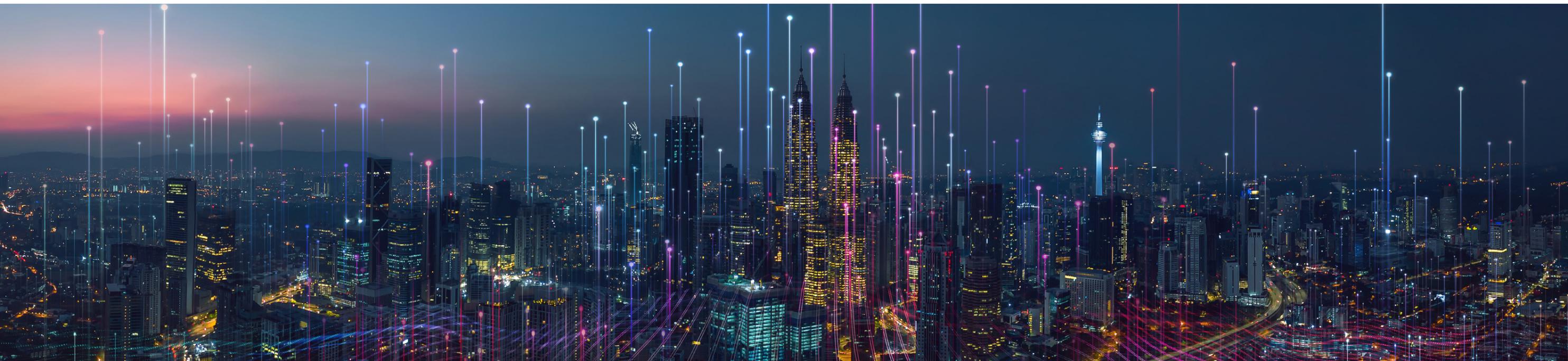
Conclusion

The transition to a decarbonised energy supply requires significantly more data exchange and networking in the energy market.

A working group at the Gaia-X Hub Germany is supporting the development of a dedicated data ecosystem for the German energy sector based on Gaia-X.

Benefits are lower transformation costs, more flexible use of decentralised energy potentials, new innovative data services and greater reliability through operational resilience in critical infrastructures.

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10 myths about Gaia-X

Manuel Krieg & Dr. Crispin Niebel, Gaia-X Hub Germany

*This article was first published in German on 31 January 2024 in the Gaia-X Hub Germany blog.

The debate surrounding Gaia-X, Europe's ambitious initiative for an open and sovereign data infrastructure, has given rise to a multitude of misconceptions and false facts. Here are the 10 most common myths circulating and the corresponding facts to clarify them.

Myth 1: Gaia-X is the European cloud.

Gaia-X is often thought to be the European cloud. However, this is wrong. Rather than a cloud, the aim is to build trustworthy data ecosystems in which various stakeholders and service providers are connected in a shared digital infrastructure, and can provide or utilise data or data-related services. To this end, the Gaia-X European Association for Cloud and Data is working with the entire Gaia-X community – consisting of the public sector, associations and small, medium-sized and large companies – to develop common standards, data spaces and digital applications. Cloud computing services are therefore just one of many services that are offered in Gaia-X-compatible data ecosystems.

Myth 2: Gaia-X was only designed for Europe.

Due to increasing digitalisation and the creation of more and more data, data sovereignty and thus secure data exchange is becoming increasingly important all over the world. Gaia-X was developed in line with European values such as transparency, openness and interoperability and laws, for example the General Data Protection Regulation (GDPR) and many others. These values are also internationally recognised as a seal of quality for security in the handling of data and emerging digital infrastructures and business models.

A digitally sovereign Europe is required, as the economic potential of collaborative digital business models is undisputed. If Europe wants to be competitive in the global data economy in the future, then Germany must focus on infrastructures for sovereign and secure data exchange.

The international interest in this European approach and the implementation of Gaia-X is already reflected in several non-European Gaia-X hubs in South Korea, Japan and the USA.

Myth 3: Gaia-X is designed to exclude large non-European technology companies.

The widespread assumption that Gaia-X should exclude dominant, non-European technology companies from the USA or China, for example, does not represent the actual objectives of the initiative.

Gaia-X pursues an open and inclusive approach and encourages broad participation, regardless of the geographical origin of the companies, turnover or size of the players. However, it is crucial for participation that the basic principles of Gaia-X (data sovereignty, interoperability, openness and transparency) are implemented. Gaia-X is about diversity and competition, about a data infrastructure that is characterised by a broad range of providers. The clear rules and standards of Gaia-X create an environment in which all players and companies, regardless of their size or origin, can work together in a trustworthy and self-determined manner.

Gaia-X offers a high and unprecedented level of trust in digital platforms. In doing so, Gaia-X recognises the different requirements for different consumer scenarios in different countries and industries. For this reason, a technological framework for compliance and labelling has been developed for all Gaia-X solution providers to ensure that all standards are met.

There are three levels of labelling, depending on the requirements:

Level 1 - Privacy, transparency, security, portability and flexibility are guaranteed according to the rules set out in the Gaia-X framework and the basic set of technical requirements from the Gaia-X architecture document.

Level 2 - This advanced labelling level extends the basic requirements of Level 1 and reflects a higher level of security, transparency of applicable legal requirements and potential dependencies. The consumer must be offered the option of a service location in Europe.

Level 3 - This level aims for the highest standards of data protection, security,
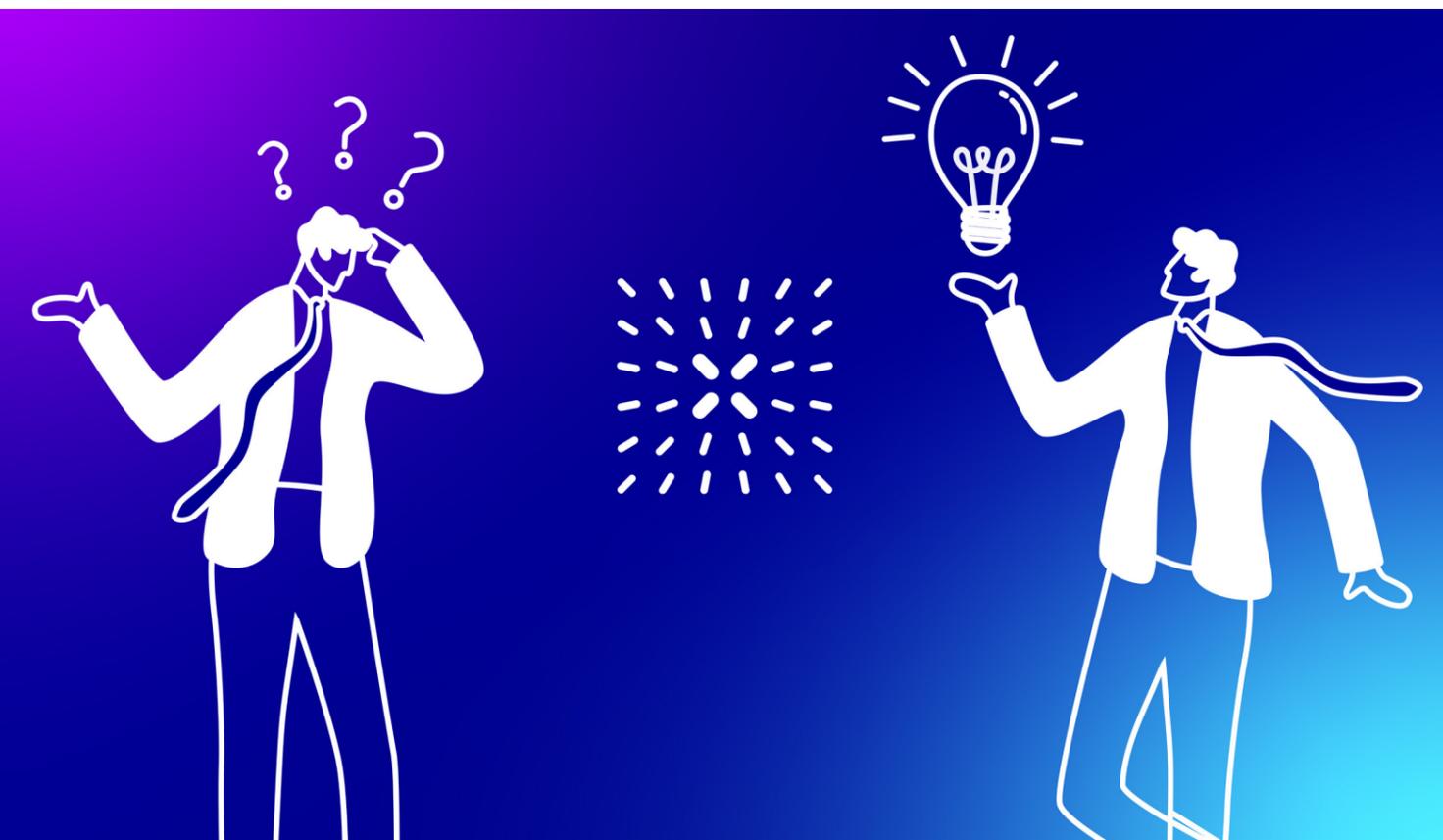
transparency, portability and flexibility as well as European control. It extends the requirements of levels 1 and 2 to include criteria that provide immunity from non-European access and largely avoids vendor lock-in. A service location in Europe is mandatory.

Myth 4: Gaia-X made no progress and was ended.

Gaia-X is not over, but more alive than ever and part of the German government's digital strategy with initiatives and industry-driven projects such as Catena-X and Manufacturing-X. In parallel to the European legal framework, the Gaia-X initiative continues to grow in the member states and is developing into a data ecosystem based on European values and standards. Following the set-up phase, Gaia-X is now in the application and scaling phase. The focus is on the technical implementation of data spaces and scaling data-based business models.

Since its launch in 2019, various parts of the Gaia-X community have been driving the development of the Gaia-X reference architecture and specifications. In the German Gaia-X Hub, there are 14 industry-specific working groups, known as domains, which define industry-specific requirements for the implementation of Gaia-X and analyse use cases. In addition, since 2022 there have been eleven Gaia-X projects funded by the Federal Ministry for Economic Affairs and Climate Action (BMWK). The aim of these projects is to show how the Gaia-X framework can be used to create added value and innovative data-driven business models for SMEs, organisations and public administrations. Best practices and

blueprints will be developed. In future, these will serve as a showcase for Gaia-X users to develop their own business models and applications.

In addition, the Gaia-X lighthouse project Catena-X, a data space for the automotive industry, went into operation in October 2023. Data from the industry's entire value chain can now be shared across companies based on Gaia-X principles in order to achieve for example, more sustainable production conditions or reduce production costs.

Gaia-X started as a pan-European project and is strongly characterised by a community approach. As such, Gaia-X is constantly evolving. Many different stakeholders are involved in setting up the organisational structures on the one hand and developing the Gaia-X framework on the other. Different opinions, comments and remarks have their right to exist, but require clear processes and structures for harmonisation. The large number of different projects, initiatives and endeavours relating to Gaia-X shows above all that the initiative has created a momentum that is driving the discussion forward. The high pressure of expectation is now being followed by clarity, transparency and a showcase that demonstrates the possibilities that the Gaia-X components can provide.

Myth 5: Gaia-X is progressing too slowly.

Gaia-X is building a decentralised, federated data infrastructure based on open-source software that can be used by stakeholders from a wide range of sectors. This will enable them to exchange data with each other in an

interoperable manner in the future. This is much more complex than setting up individual data silos, as was previously the case.

Developing good, practicable solutions for this new challenge takes time. Building a centralised infrastructure from the top down, on the other hand, would be much easier and quicker. For the participants, however, this would mean much less digital sovereignty and numerous new dependencies. This is why Gaia-X is taking the necessary time to consider the concerns, interests and perspectives of the various interest groups in order to create an ecosystem that is both flexible and resilient.

Myth 6: Getting started with Gaia-X is complicated, especially for SMEs.

The national Gaia-X Hubs offer an easy Gaia-X entry point for interested companies and organisations and also take care of further onboarding. The Gaia-X Hub Germany, for example, offers a simple registration form on its website (gaia-x-hub.de) under 'Join now', in which a selection of relevant domains can already be made. Interested parties will then receive further information and details about upcoming domain meetings. At the regular virtual meetings, interested parties can ask questions and actively participate in the design and technical implementation of Gaia-X.

Participation in the meetings and domain membership are free of charge and offer small and medium-sized companies in particular a quick and easy introduction to the Gaia-X world without prior knowledge. The hubs make entry

into the Gaia-X community as uncomplicated as possible. However, it is also clear that Gaia-X is more than just an IT application and that familiarisation with data-driven business model development takes time.

Interested parties can contact us via the onboarding form on our website https://gaia-x-hub.de/mitmachen/.

Myth 7: Gaia-X hinders innovation by having too many rules.

Gaia-X is committed to European values and compliance with European regulations such as data protection and data security requirements. These rules are designed to create trust while enabling a dynamic environment for digital innovation.

Through clear regulations, the use of uniform standards and the seamless integration of different systems, Gaia-X offers a flexible, open and holistic approach. This gives companies the opportunity to utilise their existing technologies effectively and at the same time take advantage of a networked digital infrastructure with a wide range of cloud solutions. Further details on this can also be found under myth number 9.

Myth 8: Gaia-X is a government project and not independent.

Gaia-X is managed by an international, independent, non-profit organisation, the Gaia-X Association for Data and Cloud Infrastructure, under Belgian law (French: association internationale sans but lucratif, abbreviated to AISBL). The management structure is designed to ensure the neutrality and independence of the Gaia-X initiative. https://gaia-x.eu/who-we-are/association.

Myth 9: Gaia-X is dominated by large companies and puts small providers at a disadvantage.

Gaia-X places great importance on balanced participation and governance. The initiative is particularly active in promoting the involvement of small and medium-sized enterprises in order to create a diverse and efficient European digital infrastructure. Thanks to its decentralised and federal organisational structure, Gaia-X enables a fair coexistence of players and companies of all sizes. Small and medium-sized enterprises in particular can benefit from Gaia-X, drive forward their digitalisation and generate added value from their data.

Myth 10: Gaia-X does not create any real advantages over existing cloud solutions.

Gaia-X is not another cloud solution or a finished product. Overall, Gaia-X strives to create a framework for decentralised data and data service infrastructures that meets the specific requirements of European companies, for example in terms of data protection. Through data sovereignty, interoperability, openness and transparency, Gaia-X offers added value that goes far beyond that of existing providers.

With clear rules, the use of uniform standards and thus the ability to seamlessly integrate different systems, Gaia-X offers a more flexible, open and comprehensive approach. This enables companies to utilise their existing technologies while benefiting from the advantages of a networked digital infrastructure with various cloud solutions.

The initiative aims to create an interoperable data ecosystem as an alternative to global providers, who often have a dominant market position. Gaia-X offers a European solution that reduces dependence on individual companies or market leaders and strengthens the company's own digital sovereignty. Another important point is the integration of data protection principles into the core of the Gaia-X architecture. This enables companies to fulfil compliance requirements more easily and better and to enable secure data exchange. From an economic perspective, Gaia-X therefore aims to place the data provider at the centre of the data economy and thus create a common level playing field, i.e. a level and fair playing field for all market participants.

How to help our region to participate in international projects and initiatives at DATA SPACES and CLOUD solutions?

Gaia-X workshop 1 March 2024 in Slovakia co – organised with MIRRI (Ministry of informatisation, investment and regional development) and Industry Innovation Cluster (Gaia–X Hub Slovakia)

Martina Le Gall Maláková, Gaia-X Hub Slovakia

The actual situation in our region:

1. Our presentation of knowledge and capabilities is not sufficiently impacting third parties. However, when we conduct live presentations, there appears to be significant foreign interest.

2. Best practises are not presented in our region. If we have better knowledge on the topics, projects, and initiatives abroad, we could better participate in international projects as (Catena–X, Magnufacturing–X, and in Mobility, Smart cities, Smart regions...).

3. Regional cooperation between the countries is not strong enough. We have to strenghten our regional cooperation through the existing strong network such as Gaia–X, eDIH, Clusters,...

4. Not participating enough in european initiatives, (Green Deal, Data Act, Data Governance Act, AIA, ESG reporting, CO_2 footprint..), which reduces the competitiveness of our companies, as well as our academic institutions and startups.

During the workshop, we asked ourself these questions:

- How to strenghten this region in Digital Transformation and Data Economy?

- How can the competitiveness gap between this region and Western Europe be reduced?

- How can we practically join forces and on which topics should we strengthen regional cooperation to become more visible and active in projects, initiatives, and the data economy?

- What are the needs from each stakeholder – public or private? (For exemple more Interreg´s project, HE, DEP, ESIF, RRF in a positive sense...)

- How can we make our regional ideas more visible outside our region (How could Gaia-X help with this?)

- Could we have a Regional Gaia–X Clearing House?

We found several answers:

- A regional coordinator could help – Austria

- EDIC Mobility and Logistic (DE, AU, SK on board,....)

- According to information from Poland, Catena-X wants a regional hub, and Manufacturing-X also seeks a hub in the region, both based on the Gaia-X network.

- Benefit from the Gaia-X network and its activities, which will help this region integrate into the broader European and global data economy, while also strengthening Western Europe through collective collaboration.

- Funding and common projects
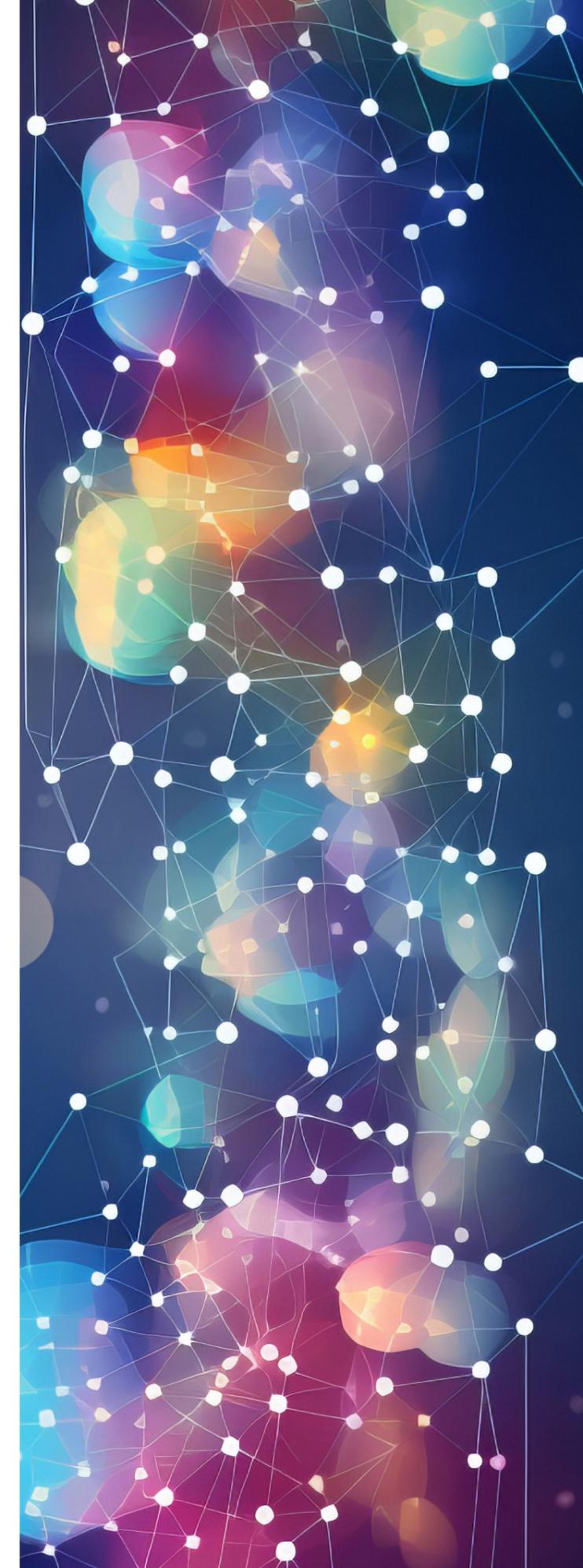
The goal of our workshop:

- Promote regional results abroad with **international recognition** (for exemple network Gaia–X,...)

- Enhance **best practises for our region.** Support our region's participation in the digital transformation by engaging in European initiatives such as Gaia-X, IDSA, DSSC, eDIH, EDIC, DSBA, and others.

- Support the creation of an ecosystem for data economy (DATA SPACES)

- Make real connections with the aim to participate on concrete projects

- Thanks to new smart technologies, solutions are found to address increasing new legislation from the EU and other goals such as the Green Deal and sustainability.

A workshop was held in Bratislava on 1 March 2024, with 25 participants. The welcome speech was delivered by Martin Déneši, General Director of MIRRI. COO of Gaia-X, Roland Fadrany, presented on Data Spaces and the Gaia-X Clearing House, followed by Petra Makovec, Operations Manager, presenting on value-added projects related to Data Spaces. Gaia-X Hubs from Germany, Austria, and Hungary shared their best practices. The workshop was moderated by President Martina Le Gall Maláková of Gaia-X Hub Slovakia. It was highly successful, and we are progressing ideas into tangible projects. Gaia-X Hub Slovakia has already submitted two proposals and is preparing additional ones.

Lets work together!

# Position paper: Value of Gaia-X in the development of the European economy using generative AI solutions

Marine de Sury, Gaia-X Hub France

The development of AI has accelerated spectacularly in recent months, with its annual impact on the global economy estimated at between 2.6 and 4.4 trillion dollars (McKinsey study, June 2023). It now seems certain that AI will determine the prosperity and sustainability of entire sectors of the economy, industry and even society. That's why businesses and public authorities are showing an appetite for these new technologies and are experimenting with them to harness their full potential. They are rethinking the way they operate in the light of this technology to seize its opportunities.

AI needs data to function and progress, and it also needs massive computing and storage capacity, which the cloud makes possible thanks to pooled investment. AI tools continually feed off data to make predictions, automate processes, improve analyses or personalise experiences. Learning data is essential to the proper functioning of these Artificial Intelligences, and must represent a broad field of observation to cover what needs to be modelled. These data are not necessarily located in a single company, but can come from the entire process chain that they seek to represent. This is where we talk about the circulation of data between players in the sector.

75% of data comes from companies. This is an incredible manna to be exploited by AI, especially as it is often of better quality than that available on the web. However, it must be able to be shared and used in an environment of trust if it is to be exploited effectively. Trust in AI systems depends not only on trust in the cloud infrastructure hosting the models and learning data, but also on the origin of the data and respect for the consent given for its use. The description of the chain of consent must therefore comply with standards that ensure that consent has been given for the uses envisaged. This is why organisations developing or customising AI models need to think carefully and in a structured way about the data they use and the various cloud services available to them. Gaia-X is the answer to this very objective.
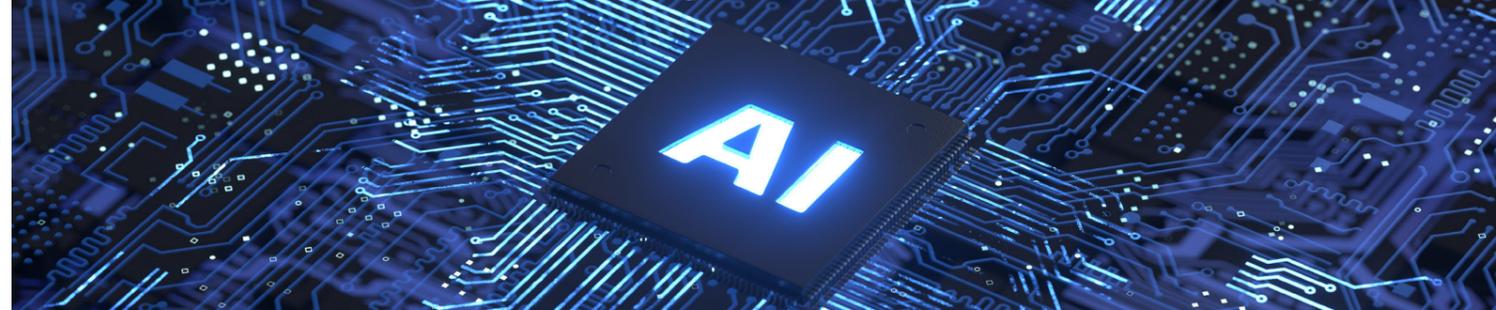
From the outset, the Gaia-X Association's ambition has been to enable organisations to make the most of their data. Through its technical and legal frameworks, it gives data producers, consumers and users control over the use of data and the underlying technology, with verifiable rules for accessing and using data. To this end, Gaia-X has set up an interface at the crossroads of data and infrastructure, proposing the definition of the technical and legal standards to which the services needed to create value around this data must conform. As a result, users have access to a decentralised, trusted ecosystem that meets these standards, and can choose between service offerings from suppliers that are described in a harmonised way, according to clearly defined, shared, verifiable and standardised criteria.

The members of Gaia-X have defined a trust framework, which brings together all the rules that define the minimum basis for being part of the Gaia-X ecosystem. These rules guarantee common governance and the basic levels of interoperability between participants in the Gaia-X ecosystem, while leaving users in full control of how their data is used.

They have also defined and specified three levels of labels guaranteeing data protection, transparency, security, portability and reversibility, as well as European control, and making it possible to list and compare all cloud provider solutions in service catalogues. These catalogues, such as the one proposed by the Aster-X project, make it possible to search for and select cloud services according to different criteria: the Gaia-X Label level (1, 2 or 3), the type of service, the location or the certifications attached, thus facilitating the use of solutions adapted to the needs of organisations or ecosystems.

Transparency, openness and interoperability are the prerequisites for the development of a trusted European AI, trained on ethical data and open models, and which does not lock its users in by concealing how it works.

The issues of competition and informed choice that led to the creation of Gaia-X and encouraged hundreds of organisations to take part in its work over the past 3 years are taking on new importance at a time when demand for computing and storage capacity is exploding and the risk of an AI market concentrated around a few dominant players is looming.

Europe must not miss the turning point in AI and must do everything in its power to offer innovation that respects its values, and Gaia-X is contributing to this thanks to the foundations it has laid, which give a hand to the producers and users of data. Doesn't confidence in services using artificial intelligence tools come from confidence in the learning data and cloud services used? It is important for users of these services to have a complete and transparent view of the entire chain. This is what Gaia-X makes possible, with a standard recognised throughout Europe that is central to this chain of trust.

4.3.1 Data4Industry-X

Towards a more resilient, sustainable and competitive manufacturing

Laurent Lafaye, Dawex co-CEO and co-lead of Data4Industry-X Lighthouse project

The industry is experiencing a significant evolution, primarily influenced by the integration of digital technologies, where the shift towards data-centric strategies is affecting nearly every aspect of the manufacturing value chain. Aiming for more efficient use of resources, optimisation of production processes, and the development of smarter, more connected products, the sector has also had to address sustainability challenges and CSR reporting, which can be complex to manage with organisations and shop floors spread across the globe.

In this rapidly evolving landscape, data exchange emerges as a game-changing force, facilitating the creation of robust data ecosystems and data spaces by enabling secure, compliant and trusted data exchanges among the entire industry value chain. By accelerating the circulation of data across all ecosystem stakeholders, data exchange is revolutionising how industries interact and collaborate, driving innovation and efficiency. The success of a company depends on its leaders' ability to see the big picture. In

traditional management this rarely happens. Most companies are a network of multiple entities and branches, with complex and troubled relationships. For a traditional management team, it's almost impossible to be fully informed. As a result, decisions are too often based on reports from team leaders, rather than on a 360-degree view of what is going on within the company. Data exchange technology allows to federate data spaces to cover many departments and functions, from resolving simple operational challenges to making strategic decisions for the future of the company. Over time, many sectors are increasingly recognising this versatility, making data a key element of the 4th Industrial Revolution, also known as the Industry of the Future.

In this overall context we launched Data4Industry-X, the trusted, secure, compliant and sovereign Data Exchange Solution for Industry. The ambition of Data4Industry-X is to address the industry challenge of data exchange in decentralised manufacturing, improving

efficiency and productivity, accelerating data-driven innovation, boosting competitiveness, minimizing the carbon footprint across the manufacturing value chain, while keeping control over the data produced locally and abroad. In doing so, Data4Industry-X ultimately fosters a compelling and sustainable European industry ecosystem, encompassing all sizes of organisations, by leveraging the full potential of broad cross-border, cross-company, cross-factory industrial data exchanges.

To address these challenges, a consortium was created with Schneider Electric, Valeo, CEA, Dawex and Prosyst bringing strong expertise in data exchange, production & manufacturing, shop floor and plant technologies: Connected products & captors, OTPaaS, Industrial data formatting tools, Edge devices and control modules, Historian servers…, and Industrial applications, AI/ML.

To facilitate the interoperability between data spaces, Data4Industry-X solution aligns with Gaia-X principles and implements Gaia-X de facto standards. This led Data4Industry-X to be recognised as a Lighthouse Project by Gaia-X, demonstrating the compliance of the technology with the European value carried by Gaia-X. Therefore Data4Industry-X will more easily access the communities built by other lighthouse projects addressing other data spaces. Powered by Dawex Data Exchange technology, the Data4Industry-X solution is based on open and cloud-agnostic architecture, and will use the Eclipse Dataspace Component framework to facilitate interoperability between data spaces. Additionally, thanks to the UDC (Unified Data

Collector) Prosyst solution, Data4Industry-X interfaces with OPC UA protocol to retrieve industrial data and exchange them at scale with the broad ecosystem.

Additionally to support the broader objective of creating a compelling and competitive European industry, Data4Industry-X contributes to the Manufacturing-X ambition and interoperates with other Manufacturing-X initiatives such as Factory-X. Manufacturing-X is a European and international initiative designed to showcase, in a coordinated way, manufacturing data spaces in key industry sectors, across the entire production and supply chain. Manufacturing-X looks at bringing resilience, sustainability and competitiveness to the industry by leveraging secure, open and sovereign data exchange. Data4Industry-X is therefore a flagship project and key contributor to Manufacturing-X, to foster the emergence in the industry of data exchange initiatives and their valorisation in the form of services, therefore creating an attractive and sustainable industry ecosystem.

Data spaces and data ecosystems are evolving in a more and more regulated environment. As such, organisations engaging in data exchange need to comply with the European Data Governance Act, especially for use cases where data intermediation services are in place. Additionally, connected products manufacturers fall under the European Data Act requirements, and in particular related to the obligation of connected devices to make usage and contextual data available to the users of such connected devices or third parties designated by the connected product user. Both regulations, the Data Act

and the Data Governance Act, aim at facilitating access to data, removing silos, creating trust, fostering innovation and stimulating competition. Data4Industry-X complies with the DGA and the DA, offering industry stakeholders a secure, traceable and compliant data exchange solution to address their challenges. Other EU legislations such as the Corporate Sustainability Reporting Directive (CSRD) can be addressed with Data4Industry-X by helping large companies to continuously and reliably collect information to publish regular reports on their environmental and social risks and impacts. In a current example, by improving the monitoring of CO2 emissions and the plans to minimise them. More recently, the new EU ESPR regulation is making data spaces indispensable. As a matter of fact, the Ecodesign for Sustainable Products Regulation (ESPR) imposes the DPP (Digital Product Passport) for some products as early as 2027, such as batteries, and will be generalised later for all products. The DPP therefore requires data exchange between organisations that may belong to different sectors.

A large variety of impactful industry use cases are addressed by Data4Industry-X, in sectors such as:

- **Automotive industry** - Address environmental objectives requires to facilitate data consolidation at group level, and foster interoperability between plants & partners. The Data4Industry-X solution demonstrates useful impatriation of all data from plants across the world, keeping the decision making in France while reinforcing the company's efficiency.

- **Power generation industry** - Improve default detection and predictive maintenance through semantic analysis and data normalisation automated by data exchange between AI models trained on large historical knowledge bases and industrial organisations.

- **Engineering and R&D** - Enable advanced materials research through molecular mechanics simulations, and bring innovation for satellites, planes or car conception, thanks to improved modeling.

- **Supply chain traceability** - Enable the modeling of perturbations and the resilience of the supply chain, including stochastic forecasts and risk management, as well as increase the warehouse dynamic optimisation.

- **Production process optimisation** - Trigger process optimisation (robotics, performance, control, …), improved demand forecast, refined customer requirements management, and enhanced carbon footprint management.

These apply to a wide range of sectors, including aerospace and defense, automation, energy and transportation. Impactful use cases are limitless, and more ambitious and innovative examples are emerging.

Industrial organisations with plants, shop floors and suppliers, spread across the globe with decentralised manufacturing, are concerned for their ability to bring innovations and operational efficiencies to increase competitiveness, while reducing CO2 emissions to meet and report on their sustainability obligations. The Data4Industry-X solution will bridge the entire industry data ecosystem by enabling large and small organisations in all sectors to exchange, distribute and valorise industrial data, securely, to ultimately improve operational efficiency and meet decarbonation objectives.

To learn more about Data4Industry-X, contact us on https://www.data4industry-x.com.

EuProGigant – Gaia-X in the manufacturing industry

Lukas Nagel, PTW Darmstadt; **Gerald Ristow**, Software AG; **Levon Harutyunyan**, TU Vienna; **Lukas Schwab**, EIT Manufacturing

What is EuProGigant?

The EuProGigant project officially started in 2021 as a Gaia-X initiative in the manufacturing industry and thus marked the starting point of the current project ecosystem. Due to the impressive progress and resounding success of it, EuProGigant was listed as a Gaia-X Lighthouse Project in 2022. Since 2023, the ecosystem surrounding EuProGigant entails five research projects which aim to enhance different fields of the European manufacturing industry.

The vision of the Austrian-German project is to enable the exchange and use of data from production securely and sovereignly and to increase the competitiveness of the European manufacturing industry on a global scale by tackling essential topics with its use cases. One of these use cases focuses on sustainability, namely the prediction of the CO_2 footprint in the product development stage.

Embracing Sustainability

As regulations like the Corporate Sustainability Reporting Directive (CSRD) and the Corporate Sustainability Due Diligence Directive (CS3D) push companies to disclose their products' environmental impacts, consumer demand for sustainably produced goods also grows. A critical stage in minimising ecological footprints occurs in product development, where key parameters are determined. Yet, this phase often lacks comprehensive environmental impact data.

This EuProGigant use case aims to close this gap by using real data from various entities within the supply chain to estimate these impacts. This initiative not only seeks to meet increasing regulatory and consumer demands but also to enhance decision-making in product design with a focus on sustainability. By improving data availability and accuracy during the development phase, EuProGigant is leading the way towards a more sustainable and transparent future in manufacturing.
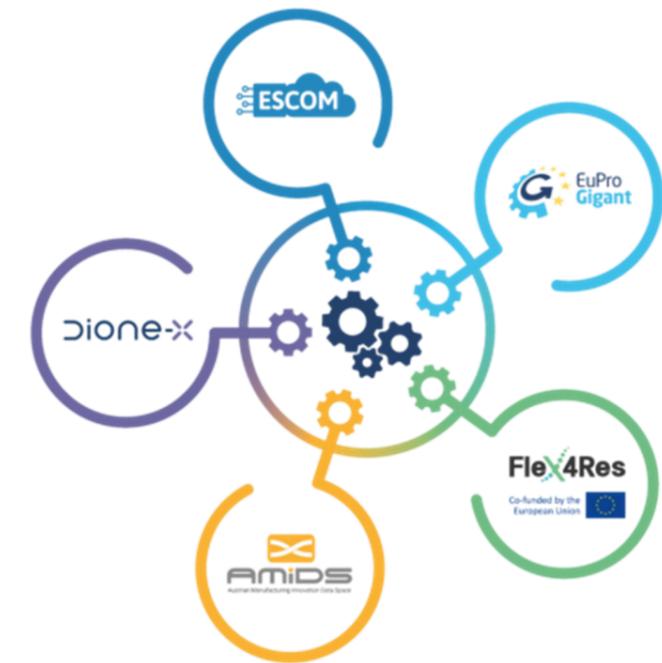
CO_2-Calculation

To calculate the CO_2-footprint, it is crucial to have a systematic approach, where each supply chain participant implements its own emission structure by identifying all processes that need to be considered. A cross-sectoral approach Pathfinder Framework V2.0 has been selected for accounting and exchanging product lifecycle emissions. The guidance document outlines the system boundaries and calculation methods, emphasising cradle-to-gate analysis and primary data collection from supply chain partners.

The prediction service is implemented as a web application that facilitates the input and variation of hypothetical production scenarios. This application provides the opportunity to predict the carbon footprint of injection-molded parts, which is feasible with the appropriate interfaces and logic supporting it. Overall, it aims to predict the most ecologically sensible production scenario and maximise CO_2-reduction by optimising material and manufacturing choices.

Data Exchange based on Gaia-X principles

To calculate the carbon footprint of the injected-molded parts, multiple companies in the supply chain must be integrated, e.g. machine manufacturers, tool manufacturers, material providers and simulation partners, see diagram. Occasionally, even competing companies can be part of the same supply chain. Building trust among those partners is thus essential. Furthermore, applying common rules and monitoring the data exchange is crucial for long-lasting business relations. In the EuProGigant project ecosystem, this is achieved by following the Gaia-X principles, using a federated catalogue and a Gaia-X Clearing House (GXDCH).
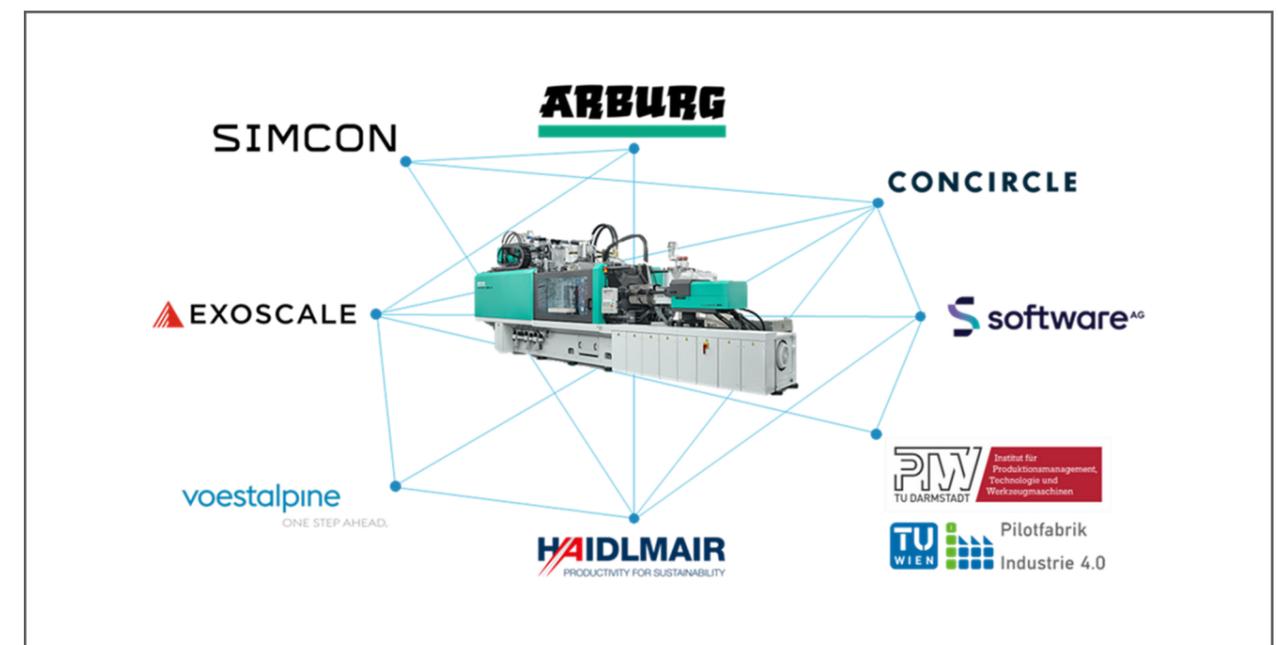
05

EVENTS

In this era of rapid digital transformation, Gaia-X has emerged as a driving force, aiming to shape the future of data infrastructure and cloud services in Europe and beyond. With our focus on data sovereignty, interoperability, and trustworthiness, Gaia-X has garnered attention from industry leaders, policymakers, and technology enthusiasts alike. Through this dedicated section, we aim to provide you with comprehensive insights into Gaia-X events, keeping you informed about the latest developments, key announcements, and upcoming events.

05

PAST EVENTS

Market-X Conference & Expo

The Market-X Conference & Expo, organised in partnership with the Gaia-X Hub Germany, took place on 12 March 2024 as part of the Data Spaces Symposium (DSS). The event provided a platform for showcasing the real-world impact and innovation powered by Gaia-X. Attendees had the opportunity to delve into the Gaia-X Framework, explore the Gaia-X Digital Clearing House, and gain insights from up-and-running projects and successful business cases.

Highlights from the event included Gaia-X's recognition of Aruba SpA and T-Systems International as ACCREDITED Digital Clearing Houses. The Gaia-X Institute presented a study on data sharing economics with Université Paris Dauphine – PSL, enhancing digital service ecosystems. Gaia-X Lighthouse Projects like COOPERANTS and Health-X showcased collaborative initiatives, while NIIS introduced X-Road 8 'Spaceship', aligning with Gaia-X Trust Framework for future interoperability.

Tech-X Conference & Hackathon

Gaia-X successfully concluded the Tech-X Conference & Hackathon in partnership with Gaia-X Hub Luxembourg on 23-24 May. Held at the first EU Parliament in Luxembourg, the event brought together tech developers, programmers, business and product developers to explore and innovate within the Gaia-X ecosystem. According to Pierre Gronlier, CINO and interim CTO of Gaia-X, "Tech-X 2024 has demonstrated the immense potential of a secure and federated data infrastructure." CEO Ulrich Ahle highlighted the significance of data standards and collaboration: "Interoperable data spaces based on a federated cloud infrastructure enable the next level of digital transformation."

The Gaia-X Hackathon #7, part of the Tech-X 2024 conference, showcased the brilliance of the tech community, with three standout teams winning the competition:

- **1st prize** - Cloud Federation with Gaia-X for SME-Cloud Service Providers based on K8's and Liqo.
- **2nd prize** – Gaia X LLM Integration for Enhanced Experience
- **3rd prize** - Advancing the LinkML-based CI infrastructure of WG Service Characteristics

The Gaia-X Hackathon #7 has once again demonstrated the potential of collaborative innovation within the Gaia-X ecosystem. For two days, participants from diverse backgrounds came together to tackle challenges surrounding data sharing, interoperability, and digital trust. The event not only showcased the latest advancements in Gaia-X technologies but also highlighted the collaborative spirit and ingenuity of the tech community.

The projects developed during the hackathon provided valuable insights into the practical implementation of the Gaia-X Trust Framework and compliance validation mechanisms. These real-world applications validate the robustness and scalability of the Gaia-X architecture, paving the way for further strengthening of the Gaia-X ecosystem. By bringing together developers, programmers, and business developers, the event facilitated the creation of a robust network of stakeholders committed to advancing the goals of Gaia-X as presented by the input of the Hackathon teams.

Gaia-X at Hannover Messe 2024

At HANNOVER MESSE from 22-26 April, the Gaia-X community stand, featuring Gaia-X, GRIPSS-X, Gaia-X Federation Services, Gaia-X Hub Germany, NeMo.bil, Gaia-X 4 Future Mobility, IPCEI Cloud, and EuProGigant, showcased the impactful collaboration driving interconnected data ecosystems. The joint stand of the Gaia-X community, together with the neighbouring stand of the Industry 4.0 platform, provided insights into the future of cross-industry data ecosystems. Furthermure, Gaia-X CEO, Ulrich Ahle, delivered a keynote on Data Spaces as foundational for GenAI. The event, with over 130,000 visitors from 150 countries, underscored HANNOVER MESSE's role in globally integrating technology innovations, business trade fairs, and shaping economic and political agendas.

Cloud Expo Frankfurt

The Cloud Expo Frankfurt event, held on 22 - 23 May in Frankfurt, featured a dedicated Gaia-X stand, where part of our COO team, including Roland Fadrany, Petra Makovec, and Daniela Mockler, actively participated. Alongside engaging with visitors, our team had fruitful discussions and caught up with the German hub and several Lighthouse Projects. Key highlights included Roland's keynote on 'Gaia-X: Interoperable Data Spaces as a basis for generative AI' explaining how the Gaia-X principles and ideas can support AI data space applications. The panel talk 'The cloud is becoming decentralised,' held later that day fostered discussions on how we can achieve true collaboration in data ecosystems and exchange data in a spirit of trust.
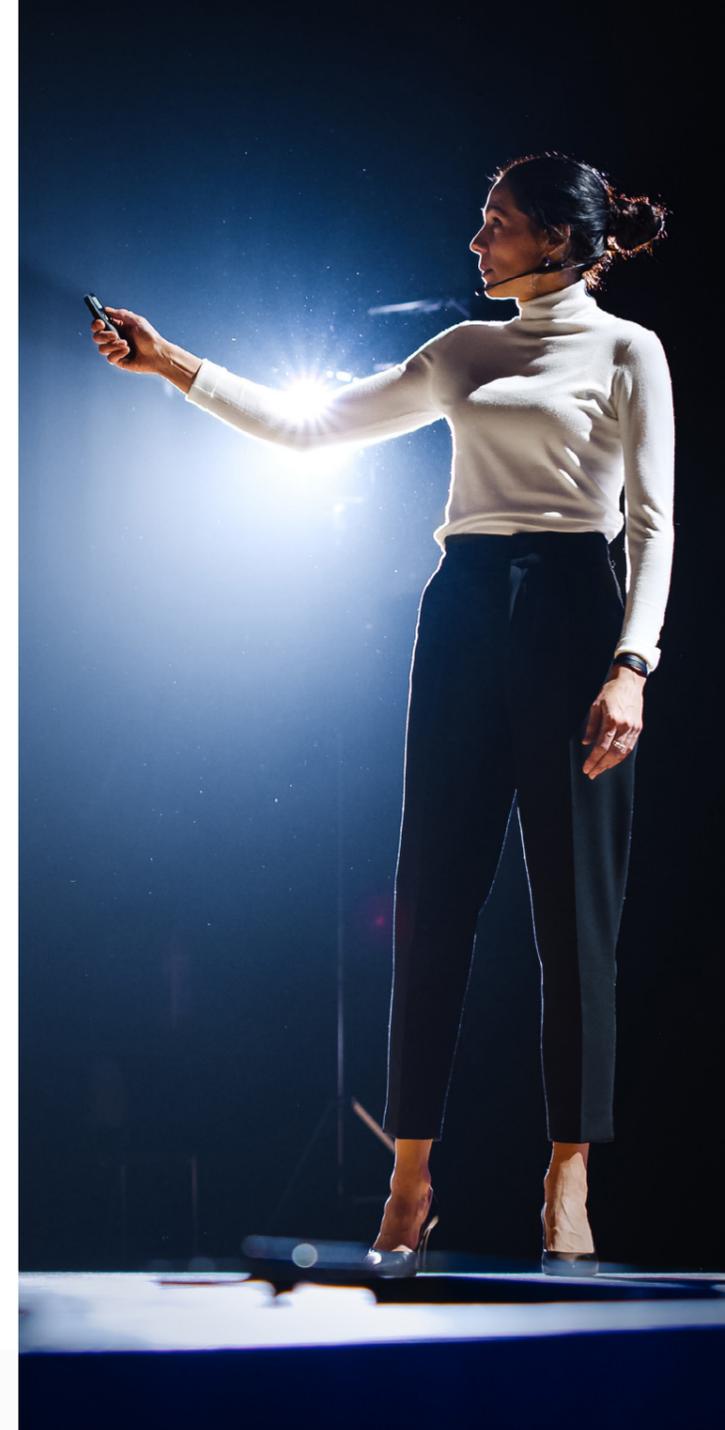
UPCOMING EVENTS

Gaia-X Summit 2024

Save the Date: Gaia-X Summit24: **14-15 November.**

The 5th edition of the Gaia-X Summit, which will take place from 14 to 15 November in Helsinki in partnership with Gaia-X Hub Finland, will focus on 'Empowering Global Data Spaces, Shaping Tomorrow's Cloud Infrastructure.'
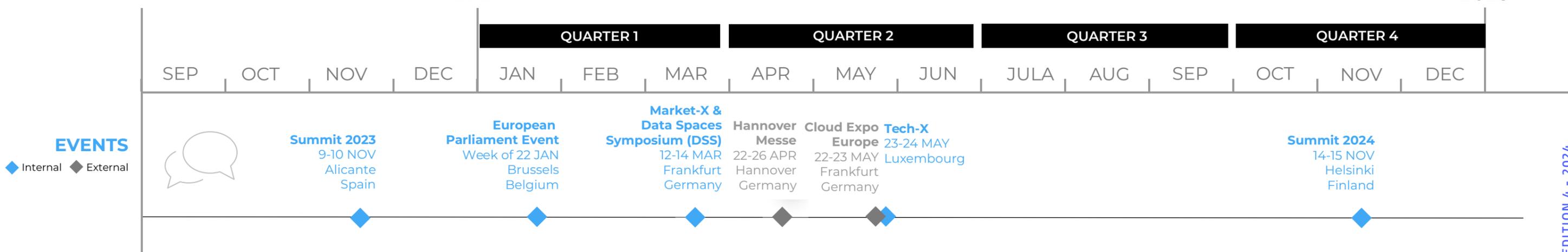
Let's come together to celebrate the achievements of Gaia-X, explore the limitless possibilities of cooperative digital ecosystems, and co-create a future where data is truly democratised.

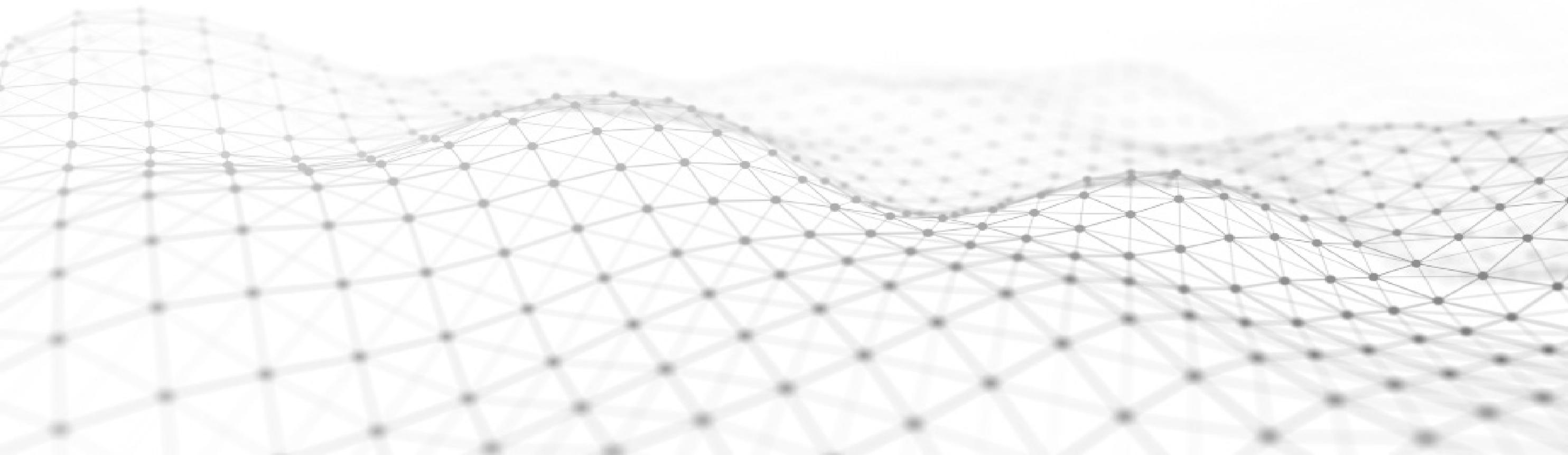| 2023				2024												2025
				QUARTER 1			QUARTER 2			QUARTER 3			QUARTER 4			
SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JULA	AUG	SEP	OCT	NOV	DEC	

EVENTS
◆ Internal ◆ External

- Summit 2023 — 9-10 NOV — Alicante — Spain
- European Parliament Event — Week of 22 JAN — Brussels — Belgium
- Market-X & Data Spaces Symposium (DSS) — 12-14 MAR — Frankfurt — Germany
- Hannover Messe — 22-26 APR — Hannover — Germany
- Cloud Expo Europe — 22-23 MAY — Frankfurt — Germany
- Tech-X — 23-24 MAY — Luxembourg
- Summit 2024 — 14-15 NOV — Helsinki — Finland

Acknowledgments

Stay tuned.

Gaia-X is up and running.

Gaia-X MAGAZINE

gaia-x