Data Spaces Business Alliance

BDV BIG DATA VALUE ASSOCIATION

FIWARE FOUNDATION

gaia-x

INTERNATIONAL DATA SPACES ASSOCIATION

Data Spaces Business Alliance Hubs: potential for synergies and impact

Index

1. An introduction to the Data Spaces Business Alliance Hubs: potential for synergies and impact

Last September 2021, BDVA, FIWARE, Gaia-X and IDSA launched the Data Spaces Business Alliance (DSBA) with a common objective to accelerate business transformation in the data economy. One of the joint working areas of the DSBA is supporting the existing organisations and data spaces by pooling their tools, resources, and expertise in a focused way.

In this context, the four European associations have developed - as part of its individual missions, strategies, and operations - international networks of national or regional 'Hubs': the BDVA i-Spaces, FIWARE iHubs, Gaia-X Hubs and the IDSA Hubs. Together a network of almost 90 Hubs (and growing) distributed over 34 countries becomes a key asset for the engagement of multiple stakeholders in the public and private sectors (in particular SMEs) and for the development and deployment of data spaces in Europe and beyond. The potential for impact is immense.

The concept of 'hub' is used and implemented differently by each of the associations, and it is not necessarily comparable but complementary. Additionally, within each of the individual networks we can find a lot of heterogeneity (e.g., in their legal form, operations, etc.) and levels of maturity. Despite this diversity, there is some common ground and more importantly a potential for synergies and impact creation by bringing hubs together to collaborate.

Throughout this document, we refer to the 'DSBA hubs' as the overall network or group of hubs combining the hubs of the 4 associations, that are briefly described here:

- BDVA i-Spaces are trusted data Incubators and experimentation ecosystems accelerating the take up of data driven innovation in public and private sectors. i-Spaces offer secure data experimentation environment allowing Research, Education, and Innovation stakeholder to experiment and innovate with data, acting as hubs to connect different stakeholders at local and regional level. To become a BDVA i-Space, organisations need to go through an evaluation/labelling process. Labelled i-Spaces are building a strong European wide federation (implemented by the EUH4D project) to foster data innovation and exchange beyond borders and boundaries.

- FIWARE iHubs are innovation hubs focused on the building of communities and collaborative environments to enable digital businesses to thrive at regional and global levels. Providing - such as private companies, public administrations, academia, and developers, among others. with tailored business development support, connection to FIWARE's global network, easy access to open-source technologies, marketing and community building training. FIWARE iHubs speed up innovation and digitalisation journeys.

- Gaia-X Hubs are the central, national contact points to inform about the Gaia-X Association. They are not a body or part of the Association, but rather act as independent think tanks, supporters or ambassadors and influencers for Gaia-X. The Association and the national Gaia-X Hubs cooperate in the areas of Gaia-X technologies, projects, and communication.

- IDSA Hubs incorporate all members, research organisations and companies that use IDS concepts and standards per country. The IDSA Hub is facilitated by a university, research organisation or non-profit entity. It enables communication between the Hub and the Association and drives forward the dissemination and adoption of the IDS standard. The hub facilitator reaches potential members, projects, research centres and connects with governments. In addition, there are IDSA Competence Centers. They offer specialized knowledge or a specific service as part of the IDS offering, such as a testbed or training services.

All these hubs are linked to the European associations by a strong relationship benefiting both ends. All hubs operate regionally/locally or nationally and provide regular information to the European associations regarding the different regional/national policies, cultures, and businesses of the EU.

Together and through the DSBA, these regional and national ecosystems can create a pan-European knowledge network, where hubs can improve their networking and business possibilities. DSBA contributes to enhancing their visibility and empowers them to contribute to larger missions and enhance their capacity and outcomes, leveraging on national funding.

This will also increase their opportunities, for example creating synergies within the same country. The hubs can also drive activities for the DSBA, such as skills development, certification, or experimentation and help to disseminate DSBA results, through their regional, and national network. They can also do cross-dissemination actions to support other hubs, to improve transparency by giving easy access and multiple entry-points to the network.

Finally, the DSBA is meant to provide a stable framework for the hubs when reflecting the Data Spaces ecosystem, providing a reference structure for a global definition vis-à-vis local deployment. For example, this can be about the necessary requirements across the different use cases, or the local ecosystems that can be shared efficiently through the network.

It is important to mention that the word ‘hub’ is also widely used in the context of the European, national, and regional policies, specially connected to the Digital Innovation Hubs (DIHs). DIHs is a policy initiative in the context of the Digitising European Industry (DEI) strategy of the EU launched by the European Commission in 2016. Since then, DIHs have become a key regional instrument to support the digitalisation of European companies and public administrations also creating synergies with the Smart Specialisation Strategies[1]. European DIHs (EDIHs) are DIHs

[1] see full map of DIHs here: https://s3platform.jrc.ec.europa.eu/digital-innovation-hubs-tool

funded by the Digital Europe Programme, composing the network of European DIHs, with the objective of increasing the capacity of a selected number of DIHs to invest in facilities (hardware and software) and to employ more personnel to provide services to SMEs and the public sector.

Although there is no systematic link or mapping in between the DIHs/EDIHs and the DSBA hubs, many of the DSBA hubs are also DIHs and drivers (or major contributors) to EDIHs. The DSBA is therefore very well positioned to bring strong synergies in between the European Data Spaces and the European Digital Innovation Hubs, leveraging investments and increasing possibilities for impact.

In the next few sections, we provide additional information about the hubs of each association (BDVA i-Spaces in section 2, FIWARE iHubs in section 3, Gaia-X hubs in section 4 and IDSA Hubs in section 5), a visualisation of the DSBA hubs network (section 6) and an initial call for action to the DSBA Hubs (section 7). A brief annex includes additional information about DIHs and EDIHs with links to the very extensive existing literature and publications.

2. BDVA i-Spaces

i-Spaces are Trusted Data Incubators targeted to accelerate the take up of data driven innovation in commercial sectors like Manufacturing 4.0, Logistics, e Commerce, Media, Aerospace, Automobile, Energy, Agriculture and Agroindustry, Pharmacy; as well as in non-profit sectors (e.g. Government, Environment, Public Health, Smart Cities) Expected Value includes Economical, Societal, as well as Environmental dimensions.

i-Spaces offer trusted and secure environment allowing Research, Education, and Innovation stakeholder to innovate with data, acting as hubs to connect different stakeholders. They host Closed, as well as Open Data from Business and Public sources (language resources, geospatial data, healthcare data, economic statistics, transport data, weather data…). The basis of i-Spaces will be an existing infrastructure that can be based on a geographic, sectorial or company ground, or a combination of them. Other characteristics:

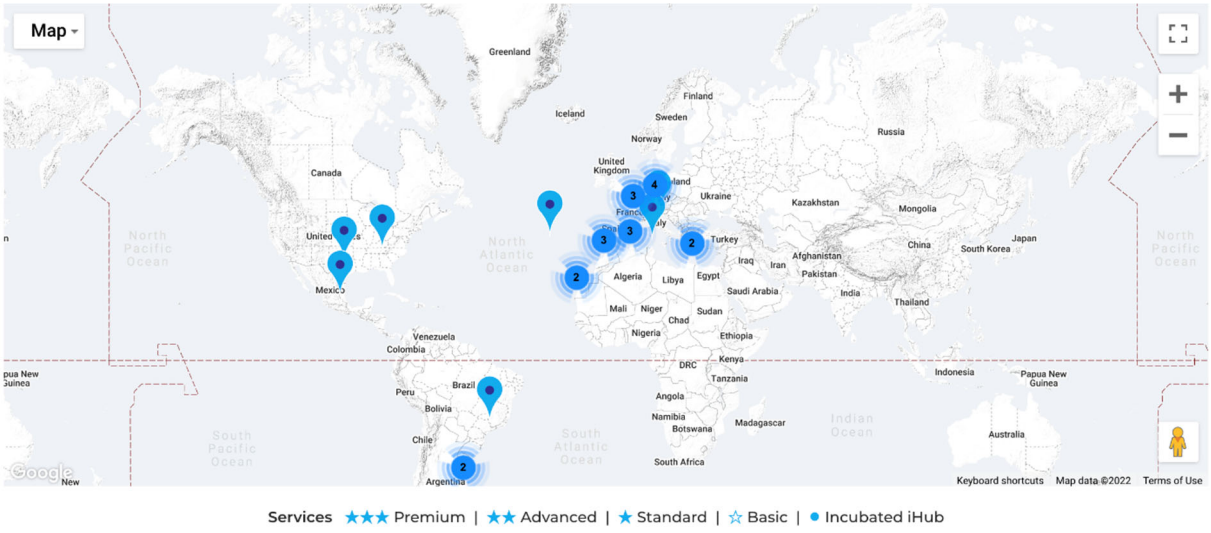
- i-Spaces have implemented they own infrastructure with big data targeted architectures with ad hoc processing power, online storage and state of the art accelerators. Remote access includes adequate network access facilities.
- IT security and data protection procedure extend beyond industrial state of the art.
- These infrastructures are located inside Europe boundaries.
- Available on demand software include tools to manage unstructured data, semi-structured data and structured data onto single platform with user-oriented retrieval and processing tools requires up-to-date methodological technologies (i.e.: querying, indexing, feature extraction, modelling, predictive analytics and visualisation).
- Beyond Data science and Big Data Infrastructures skills, i-Spaces maintains state of the art skills related e-security expertise in technical as well as legal and regulatory domains. I -Spaces initiate or support Education programs in Data Science.
- Data i-Spaces entities are pre-competitive and non-profit, though proposing a sustainable business model.
- At least one i-Space partner is member of BDVA.

To become a BDVA i-Space an organisation needs to go through an evaluation/labelling process. BDVA labelled i-Spaces are reviewed in 5 categories with over 80 single criteria measured and evaluated. The categories are: (1) **Infrastructure/Technologies** of i-Space containing criteria to computing power/Storage capacity, access methods as well as tools, policies, standards & certificates; (2) **Provided Services** of i-Space like technical support, access to acceleration and incubation support skill leverage and provided trainings; (3) **Projects/Applications** of i-Space per sector ranked by relevance; (4) **Impact** to Eco-system of i-Space with criteria participation reach, EU-level outreach, enablement model and impact follow up; (5) **Business Strategy** of i-Space with criteria in strategy, economic sustainability and revenue statements.

All categories and criteria are evaluated within a 5-stage scale. Depending on defined thresholds an i-Space could get a gold, silver and bronze label, which means e.g. for a gold label that most of the criteria and categories are ranked on stage 3 or higher. The label lasts for 2 years, and organisations are requested to re-apply to maintain the label.

Labelled i-Spaces, beyond exchange of good practice, are creating a Europe-wide federation, to foster trans boundaries data innovation. The Federation is being implemented through the EUHubs4Data project (www.euhubs4data.eu). The European federation of Data Driven Innovation Hubs aims to consolidate as the European reference for data driven innovation and experimentation, fostering collaboration between data driven initiatives in Europe, federating solutions in a global common catalogue of data services, and sharing data in a cross-border and cross-sector basis. With the objective of serving as reference to the establishment of the Common European Data Spaces, the federation was initially composed of 12 hubs, covering 10 countries and 12 different regions. 18 additional hubs will join (9 already did in 2021 and 9 more will join the project in 2022 from the list of BDVA labelled i-Spaces).

3. FIWARE iHubs: Innovation engines for the digital economy



Services ★★★ Premium | ★★ Advanced | ★ Standard | ☆ Basic | ● Incubated iHub

Among the main challenges for companies, cities or territories willing to be more competitive in the current digital age are the lack of application of knowledge and technical know-how, limited resources (if any) to access disruptive technologies, and the right tools and solutions. This is where the FIWARE iHubs lend a helping hand.

Serving as an innovation engine, FIWARE iHubs fill in the opportunities and gaps present in the local business ecosystem by:

1. breaking the traditional barriers for the horizontal and vertical technology enablement and business acceleration,

2. promoting the usage of Open-Source technologies and open standards,
3. providing access to a global network of leading technology providers, and standards bodies.

By doing so, entrepreneurs acquire further skills and grow their networking, businesses and competition are accelerated, the economy diversified through scalable open, reliable and disruptive smart solutions. Such values and capabilities walk hand in hand with the DSBA hub approach.

FIWARE iHubs: the one stop shop for digital innovation, education and business growth

With extensive expertise in industry domains such as Smart Cities, Smart Industry, Smart Tourism, Smart Energy, Smart Agriculture, Smart Water… the global network of FIWARE iHubs spans from Brazil to Tunisia and is delivering unparalleled innovation and business acumen.

By using the FIWARE iHubs Services, enterprises benefit from regional multi-partner cooperations, university-industry research collaborations, entrepreneurship culture, gain access to venture capitalists, training, and mentoring, aimed at further optimizing existing resources and driving up local economies.

Physical hotspot acting as a meeting point for the local community ecosystem

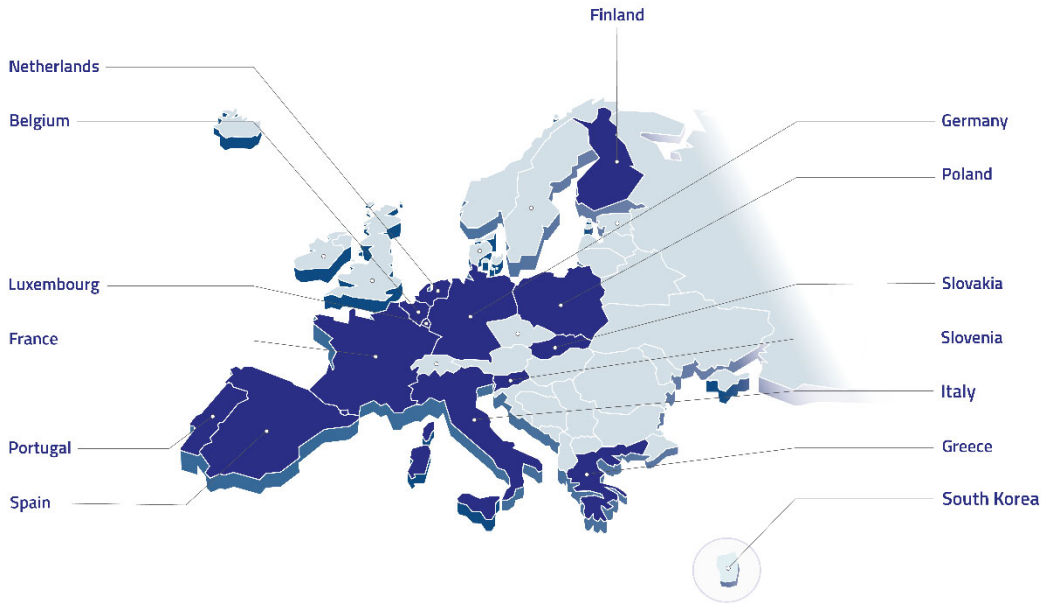
- iHub School: The place where you can learn everything there is to know about FIWARE, from a business and technical perspective to leveraging practical uses cases;
- iHub Lab: Testing, piloting, MVP (minimum viable product), Prototyping, POC (Proof of Concept) and FIWARE solutions and services certifications are only some of the features provided by the iHub Lab;
- iHub Business Mentor: Learn the basics of building a successful business model: from defining the business purpose to customer value proposition, customer segments, revenue streams, to how you can disseminate and promote FIWARE solutions;
- iHub Community Creator: Bringing together the local stakeholders under one roof, acting as a doorway to the FIWARE local and global ecosystem.

Creating Impact

- 15.000+ people from 2.000+ universities, public administrations, and private companies have been impacted;
- 3.000+ activities (training, coaching, events, technology deep dive sessions);

- 100+ Business Experts and 30+ FIWARE Experts are part of the FIWARE iHubs Network;
- Combined, the 26 iHubs count 30,000+ social media followers;
- 6 FIWARE iHubs are now part of the i4Trust Project, which is delivering collaboration between SMEs and DIHs, with significant figures: 226 SMEs and 42 Digital Innovation Hubs (DIHs), from 23 countries, have taken part in the first open call, launched in May 2021;
- i4Trust DIHs are leveraging global resources to serve local ecosystems; attracting cross border partners; providing and implementing building blocks; ensuring knowledge transfer and expertise.

4. Gaia-X Hubs



Gaia-X Hubs are the central contact points for country representatives interested in Gaia-X. They are not a body of the Association. But they may be viewed as think tanks and supporters for the Gaia-X project. The Association and the national Gaia-X Hubs cooperate in the areas of Gaia-X technologies, project initiation and implementation and communication.

The Gaia-X Hub coordinators are the central point of contact for the Association for all aspects in relation to Hub cooperation. Within the Association, the COO is the central point of contact for the Hubs for all organisational aspects of the cooperation with the Association.

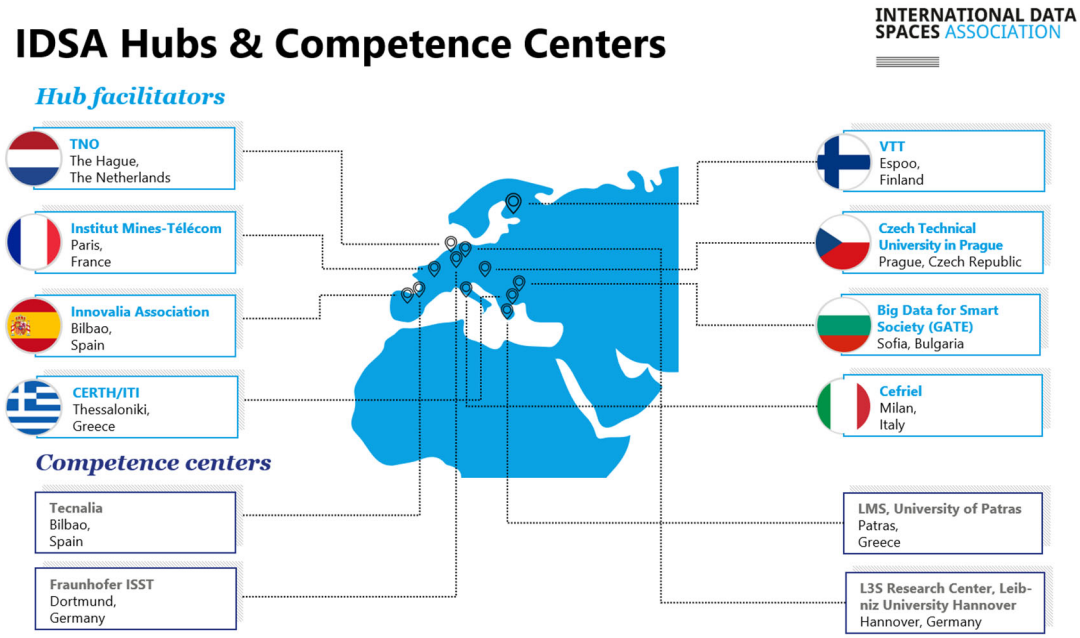
The Association supports the cooperation with its committees. The national use cases may become international business cases and may be connected with the Association Committees

for information exchange. For this purpose, the Association provides Digital Collaboration Platform (DCP) access, and the Association Groups may invite Experts from the Hubs. The Association Groups may collect and communicate about use and business cases. As people of a Hub may be member of the Association or may have an Expert role in an Association Group, the feedback channel from the Hub to the Association can be established.

The Association provides communication support for the Hubs that shall include exemplarily a specific Hub Logo, website sub-domain and email distribution lists as well as event and marketing support.

The Gaia-X Hubs shall support the Association in its endeavour to spread its deliverables. The Gaia-X Hub participants are encouraged to become a member of the Association and engage permanently in its Groups and in its data space activities.

5. IDSA Hubs

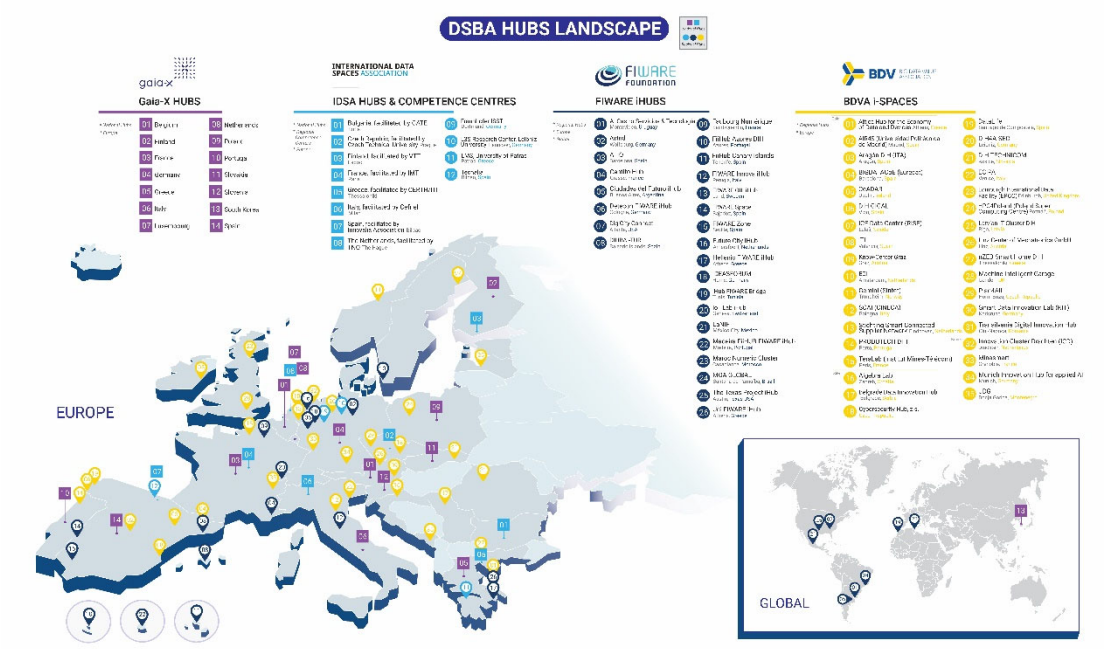


IDSA has inspired and established a strong network of international hubs and competence centers that share knowledge and information about IDS in countries around the world. These hubs and competence centers are all facilitated by not-for-profit organisations that understand the importance of sovereign data sharing for future data economies and global value chains. IDSA Hubs build bridges for growth and adoption of IDS in their countries. They disseminate the IDS standard for data sovereignty and data ecosystems in Europe and beyond. And they build cooperation with international R&D organisations and companies, as well as with governments and other public entities. The IDSA Competence Centers offer specialized knowledge or a specific service as part of the IDS offering, e.g. a testbed, a test center or a special training offer.

The facilitators of IDSA Hubs are all not-for-profit organisations, operating out of universities, research and technology organisations or associations. These organisations work with IDSA on a variety of initiatives to create awareness of data sovereignty, transfer knowledge, recruit new IDSA members, and disseminate IDS-based applications. They also foster and coordinate research and development projects to further develop the IDS standard.

Activities to be carried out by the hub facilitators include, but are not limited to, the following: information meetings, information events, training sessions, meeting with politicians, local press coverage, stakeholder mapping, use case presentations, meeting with IT consultants, meeting with the department of digitalization, IDSA insight chat, publications and IDSA Test-bed.

6. DSBA Hubs map



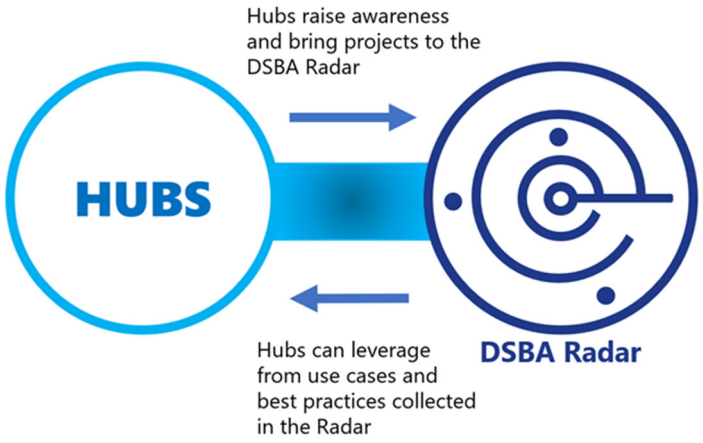
As per today (March 2022), 87 Hubs with national or regional outreach are under the umbrella of the Data Spaces Business Alliance: 35 BDVA i-Spaces, 26 FIWARE iHubs, 14 Gaia-X Hubs and 12 IDSA Hubs. Overall, the DSBA hubs network is distributed over 34 countries: DSBA hubs are present in 21 EU countries (Austria, Belgium, Bulgaria, Croatia, Czech Republic, Finland, France, Germany, Greece, Ireland, Italy Latvia, Luxembourg, The Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden) and in 5 European non-EU countries (Montenegro, Norway, Serbia, Switzerland, and UK). FIWARE and Gaia-X have extended their hubs network to other continents building important bridges worldwide: FIWARE to America (Argentina, Brazil, Mexico, Uruguay, USA) and Africa (Morocco and Tunisia), and Gaia-X to Asia (South Korea).

7. Call for action to the DSBA Hubs

There is a lot of potential for synergies and impact creation by bringing DSBA hubs together to collaborate. These synergies need to be explored, discussed, and articulated in concrete actions and projects. This paper intends to stimulate these initial discussions and engage hubs in an ongoing dialog. As starting point we launch a call for action to all DSBA hubs to engage in: 1) the **DSBA radar** and, 2) the **DSBA brokering and project ideation platform**.

DSBA RADAR

The DSBA Radar makes data spaces happen by bringing all projects into the same place, engaging their adoption, identifying lighthouses, helping the most promising ones, and using the DSBA partner network to obtain an overview of current data space initiatives. This is how the DSBA Hubs can also come into play, by joining efforts and promoting this new great endeavor. The alliance will leverage its 1000+ members to actively scout potential data spaces, promote frontrunners and identify best practices used by them, with the DSBA Hubs serving as information centers, diffusion points and partners that guide new commers into the Radar´s direction.



Joining the radar is simple, with exceptional rewards. The first step is registration with a lightweight form. All data space projects and use cases are welcome to register already. The actual DSBA Radar will be published during spring 2022. The registered projects will be contacted to complete a detailed questionnaire that will make them part of it.

Join the DSBA Radar: https://bit.ly/3HvljDB

DSBA BROKERING AND PROJECT IDEATION PLATFORM

The DSBA brokering and project ideation platform has been set up to facilitate networking and brokering activities among the members and communities of the DSBA associations and with

other key players in the Data Spaces landscape. It was launched last December 16th with the brokering event for European Data Spaces. With over 800 participants (and growing) the platform facilitates partner discovery, networking activities and supports the development of collaborative events such as brokerage events, project ideation events, pitching and informative sessions. DSBA organises regular activities in this platform.

DSBA hubs are encouraged to register to the platform and to promote it in their ecosystems: https://dsba-brokering-data-spaces.b2match.io/

8. ANNEX: Digital Innovation Hubs (DIHs) / European Digital Innovation Hubs (EDIHs) and the DSBA Hubs

Digital Innovation Hubs (DIHs) is a policy initiative in the context of the Digitising European Industry (DEI) strategy of the EU launched by the European Commission in 2016 and since then, DIHs have become a key regional instrument to support the digitalization of European companies and public administrations also creating synergies with the Smart Specialisation Strategies[2].

DIHs are defined as one-stop-shops that help companies become more competitive regarding their business/production processes, products or services using digital technologies, by providing access to technical expertise and experimentation. This allows companies to 'test before invest'.

DIHs also provide innovation services, such as financing advice, training and skills development that are needed for a successful digital transformation. DIHs act as a first regional point of contact, a doorway, and strengthen the innovation ecosystem. A DIH is a regional multi-partner cooperation (including organisations such as research and technology organisations [RTOs], universities, industry associations, chambers of commerce, incubators/accelerators, regional development agencies and vocational training institutes) and can also share strong connections with service providers outside of their region supporting companies with access to their services.[3]

European DIHs (EDIHs) are DIHs funded by the Digital Europe Programme, composing the network of European DIHs, with the objective of increasing the capacity of a selected number of DIHs (between 130 and 260 hubs in the EU, serving all NUTS 2 regions) to invest in facilities (hardware and software) and to employ more personnel to provide services to SMEs and the public sector.

[2] see full map of DIHs here: https://s3platform.jrc.ec.europa.eu/digital-innovation-hubs-tool
[3] DIGITAL INNOVATION HUBS AS POLICY INSTRUMENTS TO BOOST DIGITALISATION OF SMES. JRC SCIENCE FOR POLICY REPORT

The Digital Europe Programme will rely on this network of EDIHs to achieve its mission of supporting the digital transformation of the EU industrial ecosystems. This network will be supported by the Digital Transformation Accelerator (DTA), providing guides, training, connection to the main initiatives and impact assessment to all the EDIHs.

DIHs/EDIHs specialised in AI and Data can be a key part of the Data Spaces ecosystem as they provide infrastructures and services to store, experiment and share data. They can also be a trusted and secure entry point to the local company Data Spaces they have in their ecosystem.

Special importance has the so called ‘corridors’, which are stable collaboration agreements between EDIHs that complement each other to provide joint services, share infrastructures or share users. These EDIHs forming corridors can also be interconnected using trusted connectors, composing a Data Space in itself. This is the model, for example, of the EUHubs4Data project, which is composing a Federation of i-Spaces from BDVA connected using IDS RAM.

Several BDVA i-Spaces and FIWARE Hubs are EDIH candidates and will be part of the first selected EDIHs in the Network. Gaia-X and IDSA hubs do not have a direct link with EDIHs but some of their members will be involved in the future EDIHs. This opens the door for a lot of collaboration opportunities in between the DSBA and the network of EDIHs. DSBA is very well positioned to bring strong synergies in between the European Data Spaces and the European Digital Innovation Hubs, leveraging investments and increasing possibilities for impact.