



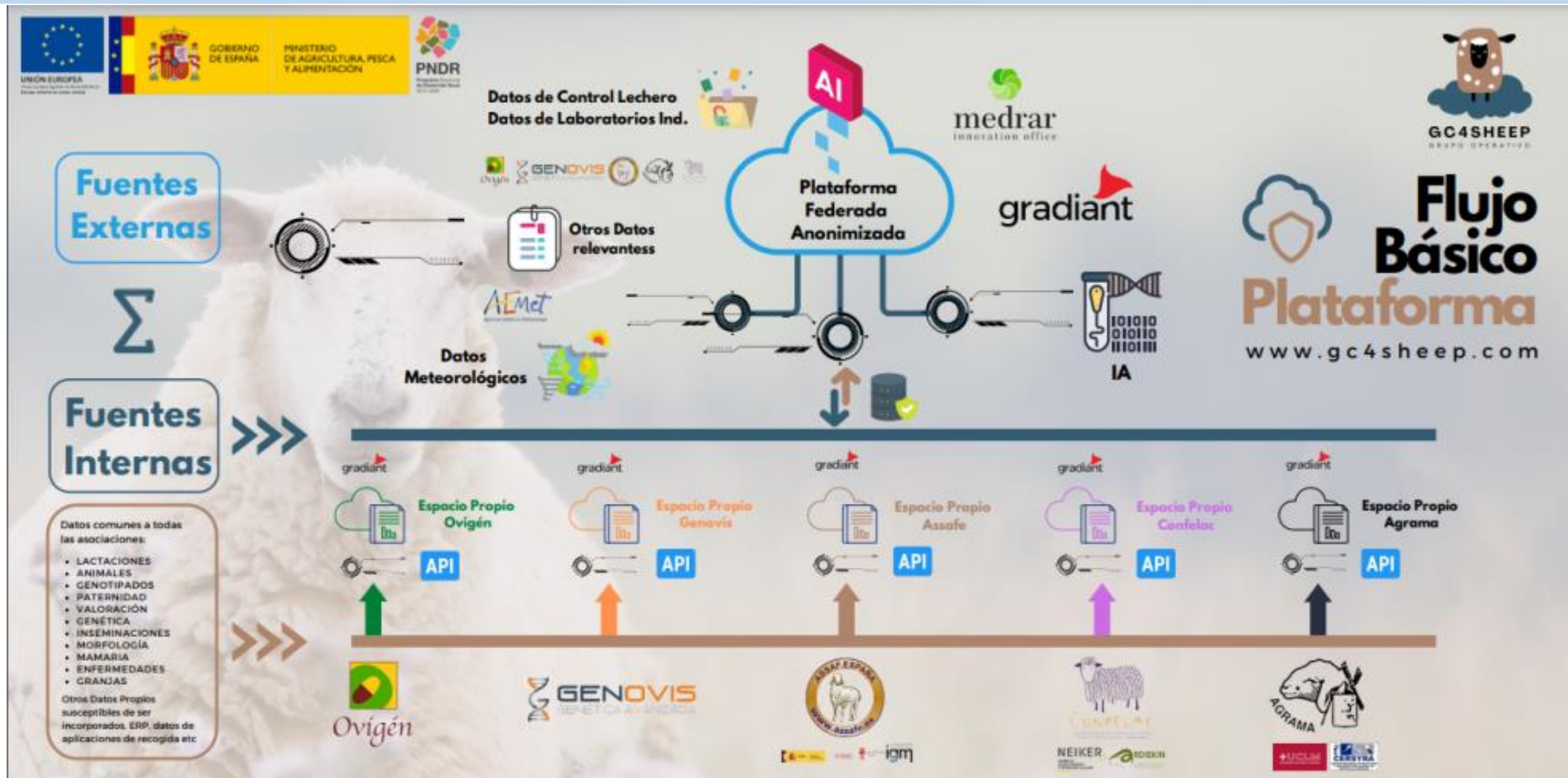
Programa de Espacios de Datos Sectoriales
Convocatoria de Ayudas
para demostradores y casos de uso de Espacios de Datos

Ejemplos de casos de uso en el sector agroalimentario



Iniciativa	Casos de Uso
<p>RETECH:</p> <p>PLATAFORMA AGROALIMENTARIA EN RED</p>	<ul style="list-style-type: none">• Centro Demostrador de espacios de datos agroalimentario para probar diferentes tecnologías IA de analítica avanzada de datos y validar modelos de gobernanza y normativos.• Espacio de datos públicos del sector agroalimentario: Plataforma de gestión y analítica avanzada de la cadena de producción y distribución con aplicaciones como mercado de datos, precios e histórico de operaciones, negociación de operaciones, transportes, seguros, etc.• Trazabilidad y transparencia Farm-to-fork: Establecer un single-source-of-truth para la generación y consumo de datos. Especialmente importante para los productos de calidad protegido.• Bioeconomía Agraria Circular: para facilitar datos en tiempo real en cuanto a subproductos y residuos que se generan, volúmenes y/o localización...etc., para dinamizar su aprovechamiento eficiente.• Economía del dato del sector vinícola: Creación de un espacio de datos que genere conjuntos de datos usables a través de un marketplace.• Comparación entre pares de agentes del sector agroalimentario: Aprendizaje federado sobre colecciones masivas de datos utilizando sistemas de comparación por pares, para obtener sistemas de recomendaciones, etc.

CASOS DE USO – GC4SHEEP: Mejora Genética y Reproductiva del Ovino Lechero Nacional



CASOS DE USO – AGDATAHUB: TRAZABILIDAD ALIMENTACIÓN DE GANADO



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name
FRANCE

description
Agata Consent
www.agata-consent.com

Agdatahub
<https://agdatahub.eu/>

BD PORC - PIG CONNECT
<https://www.bdporc.com> and
<https://www.pigconnect.fr>

Data Agri
<https://www.data-agri.fr/>

Farm Connect
<https://farm-connect.eu>

NUMAGRI
www.numagri.org

NumAlim
<https://www.plateforme-numalim.fr/>

OKP4
<https://okp4.network>



CASOS DE USO – AGDATAHUB: TRAZABILIDAD ALIMENTACIÓN DE GANADO



Fuente: agdatahub.eu

AgriDataSpace

Building a European framework for the secure and trusted data space for agriculture

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Funded by the European Union

Digital Europe Programme under grant agreement 101083401

AgriDataSpace

October 2022



- Consortium winning Horizon Europe Call: "Preparatory actions for the data space for Agriculture"
- 15 partners, 10 EU countries

18 months

March 2024

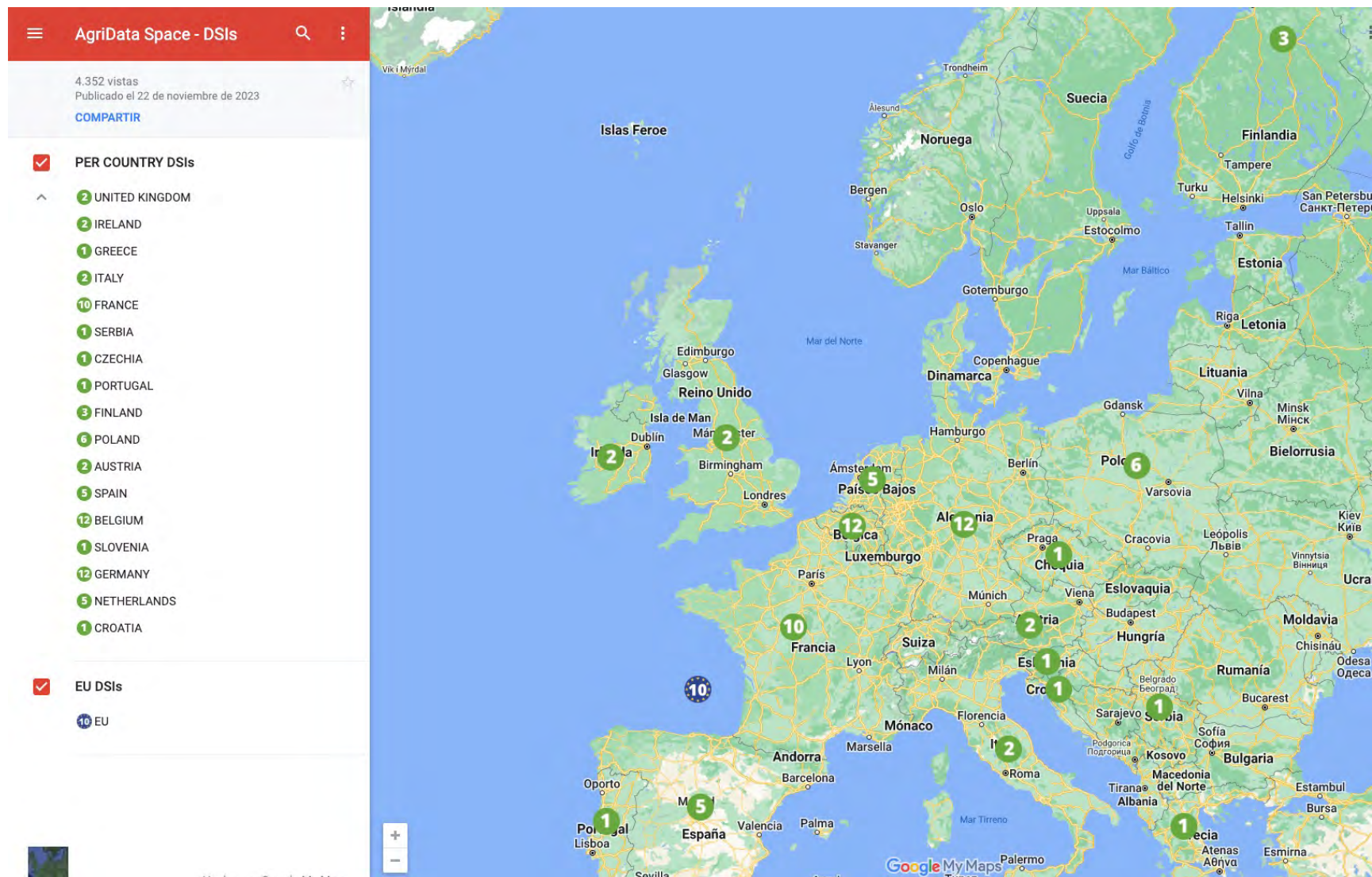


- Architecture and data representation framework for an integrated and interoperable data space.
- Roadmap that guides the implementation of the future EU data space for agriculture based on the sector needs, including legal and ethical aspects.

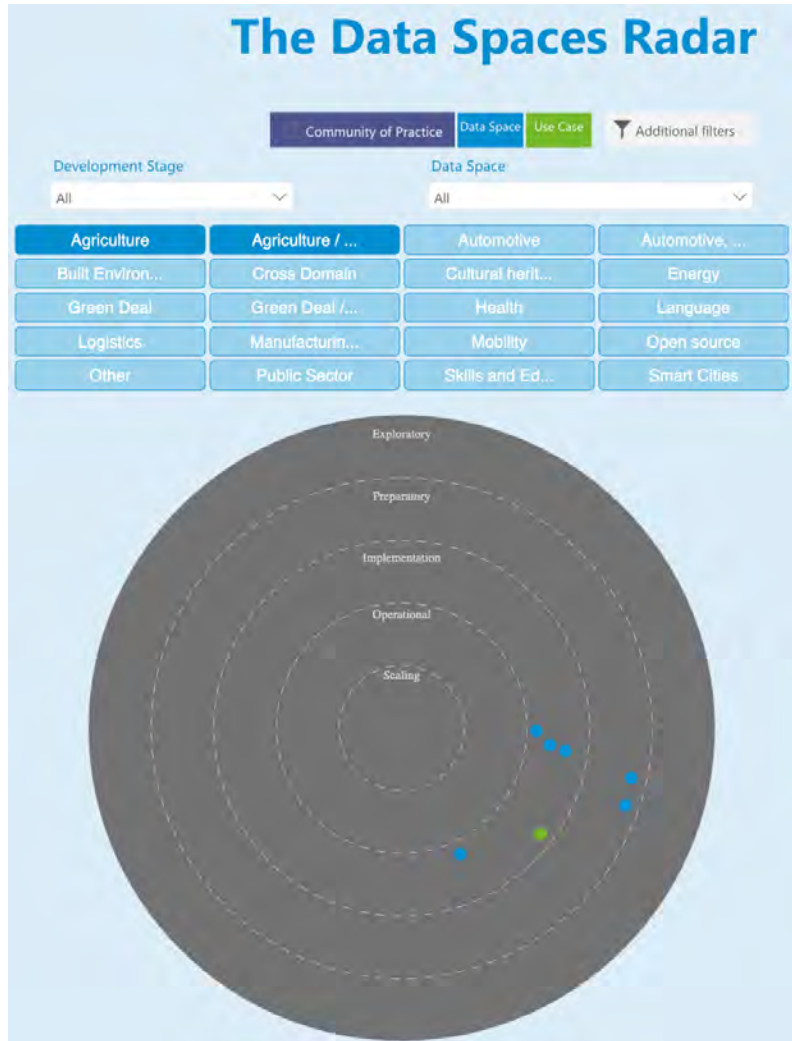


Agricultural Data Sharing Initiatives Map

<https://agridataspace-csa.eu/dsis-map/>



Agrifood Data Spaces and Use Cases in the DSSC Data Spaces Radar



Name	Headline	Partners involved	Data Space Connector	Federated services
agdatahub				Gaia-X Digital Clearing House
FlexiGroBots	AI services and multi-robot field operations in a service-based business model in FlexiGroBots project's Finnish Pilot.	VTT, LUKE (Natural Sciences Institute Finland), MTech Digital Solutions Oy, Probot Oy, Atos	VTT Connector	
DjustConnect	DjustConnect makes data sharing safe and efficient, with respect for farmer and horticulturist	ILVO		
FutureForest	Data and Smart Services for Climate Adaption of Forests	Freie Universität Berlin, Technische Universität München, M.O.S.S Computer Grafik Systeme GmbH	Eclipse Dataspace Connector	
iDDEN,	Digitalised and trusted platform to exchange dairy cattle data among all parties in the ecosystem of dairy farming including OEMs	DeLaval, Lely, Qualitas, SmaxTec, Afimilk, GEA		
UdL Research Data Space	An open research platform following the FAIR guiding principles of Findability, Accessibility, Interoperability and Reusability, while guaranteeing data sovereignty.	Universitat de Lleida, Centre of Swine Studies of Catalonia, Computer Vision Center, deltaDAO	Ocean Protocol	Gaia-X Digital Clearing House

makes data sharing safe and efficient, with respect for farmer and horticulturist



FARMERS AND HORTICULTURISTS

Besides your agricultural products you are already producing a lot of data. Keep control over your data with DjustConnect. You choose who has access to view your data.

- ✔ You decide who gets access to your data.
- ✔ Clear overview on your personal dashboard.
- ✔ You can decide to withdraw your permission at any moment.
- ✔ Data sharing contributes to improved advisory tools and simplified administration.



DATA PROVIDERS

You have useful information that others in the agri-food sector would like to use. Make your data available using DjustConnect.

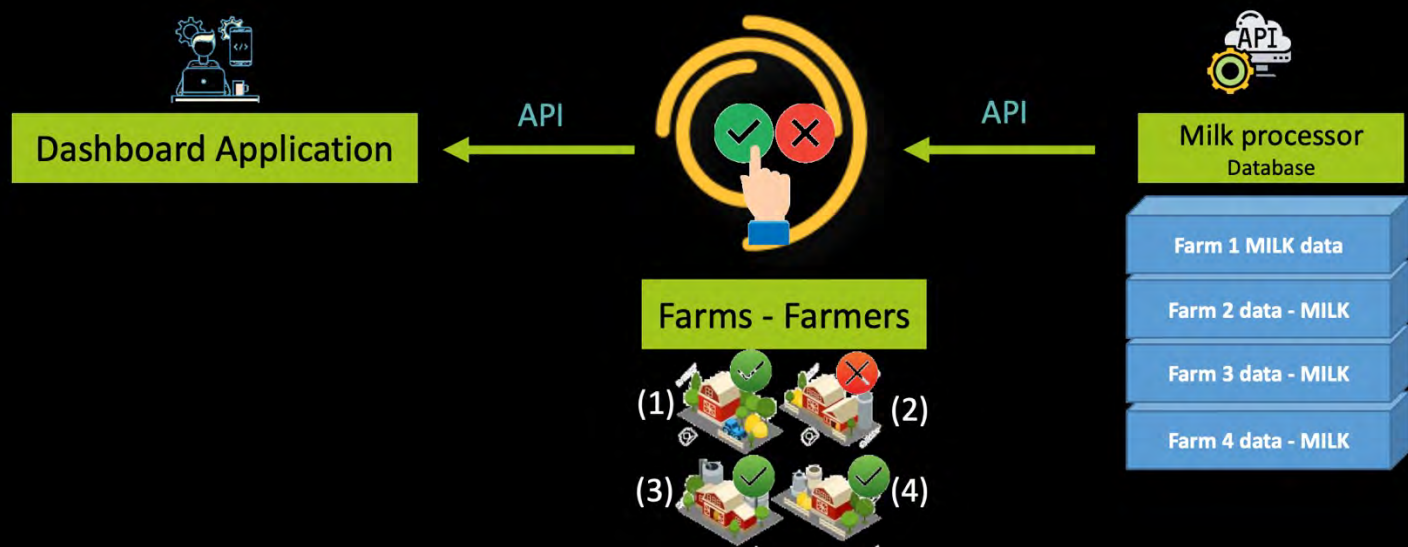
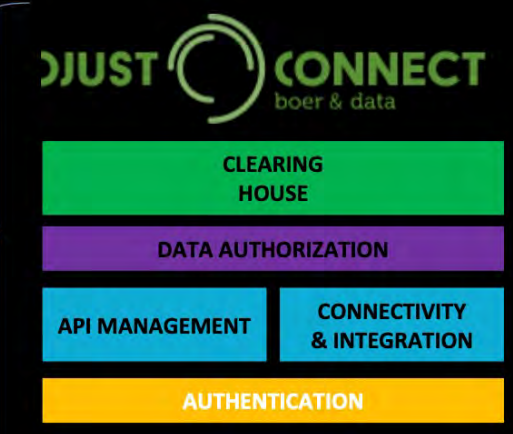
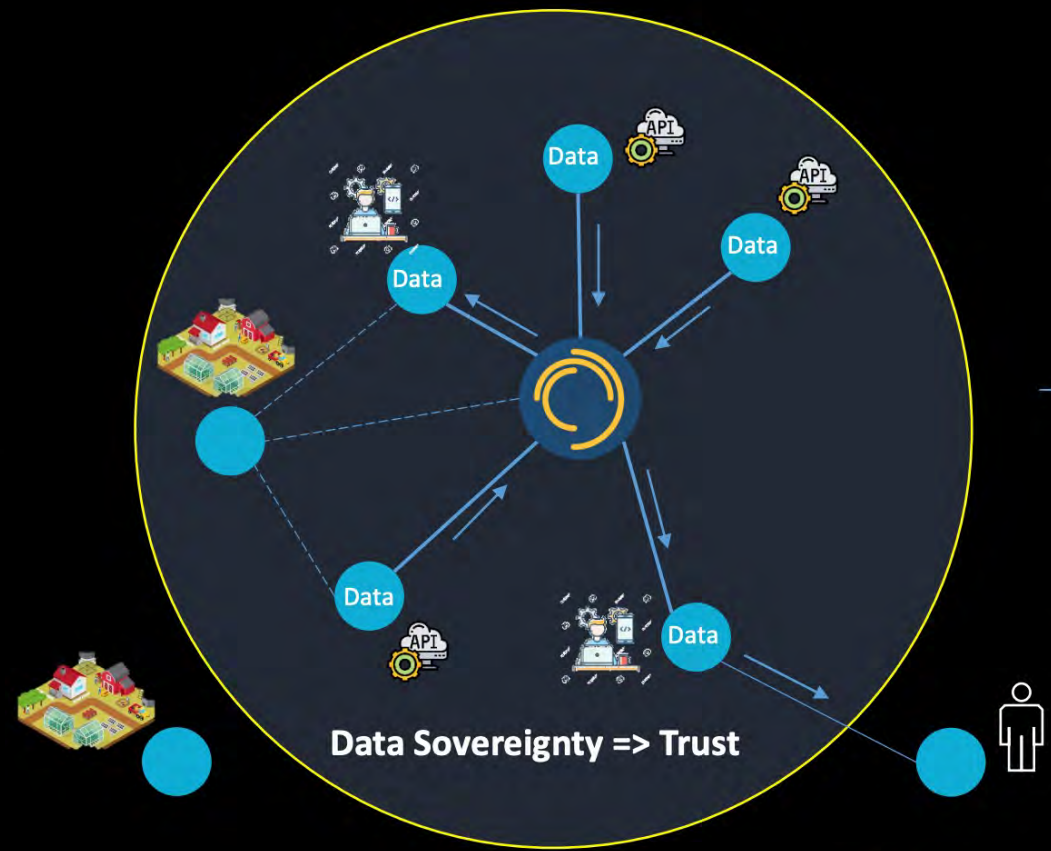
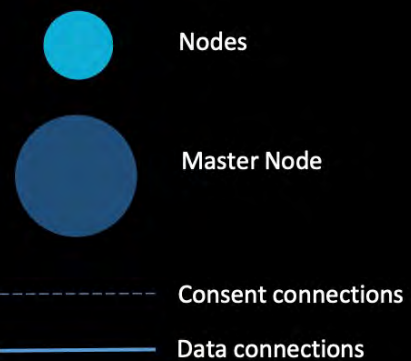
- ✔ We make your API's available in our ConnectShop.
- ✔ You reach more potential clients.
- ✔ You decide who you share your data with, the farmer decides if the transaction will be completed.
- ✔ All transactions are legally covered and replace individual contracts with farmers and data receivers.



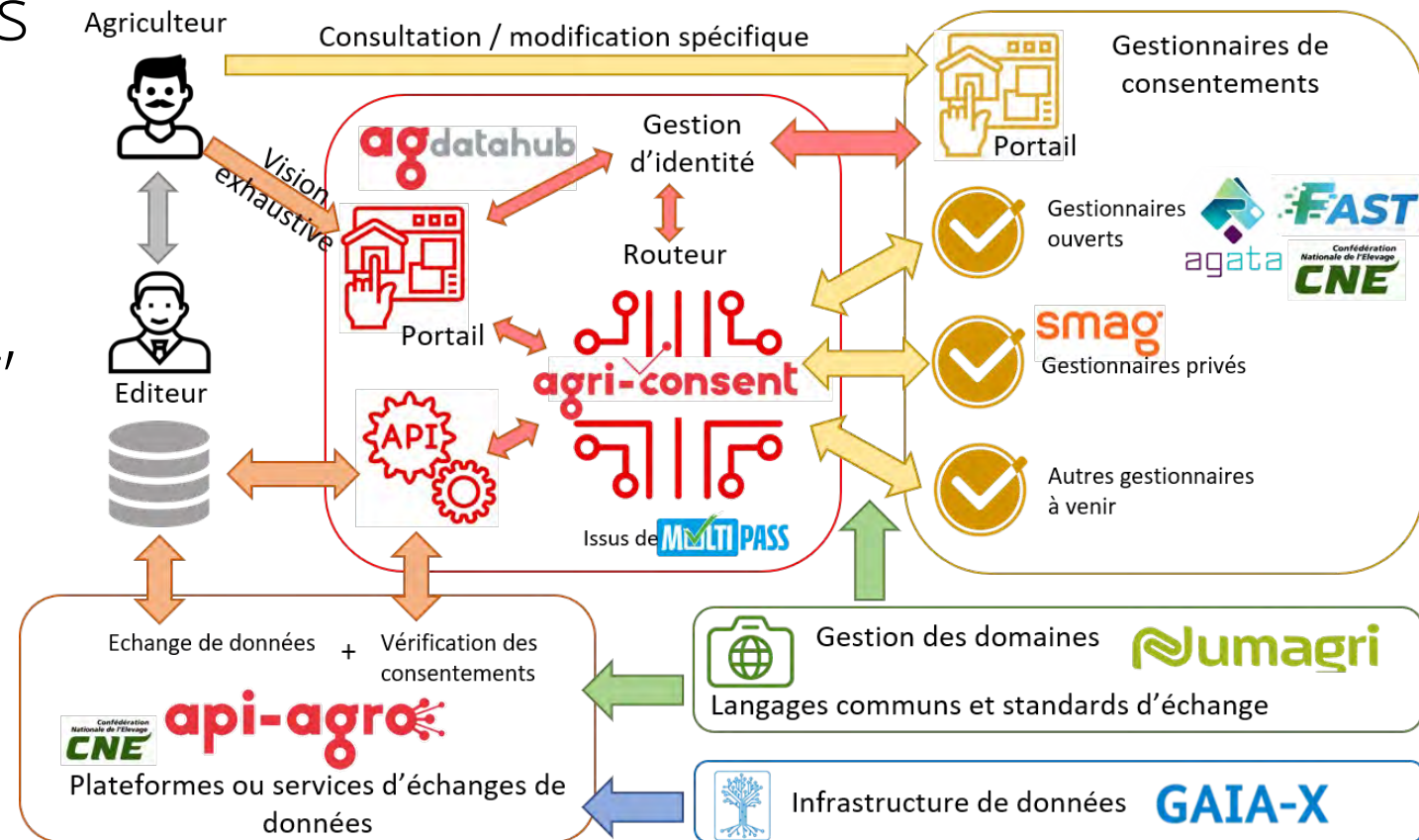
DATA RECEIVER

You are looking for data to improve your products and services. Register your application on DjustConnect.

- ✔ DjustConnect is the central hub for all your data connections.
- ✔ Ask permission from farmer and data provider in one click.
- ✔ Access to data from the agri-food sector when granted permission.
- ✔ Opportunities to expand and improve your products and services thanks to shared data.



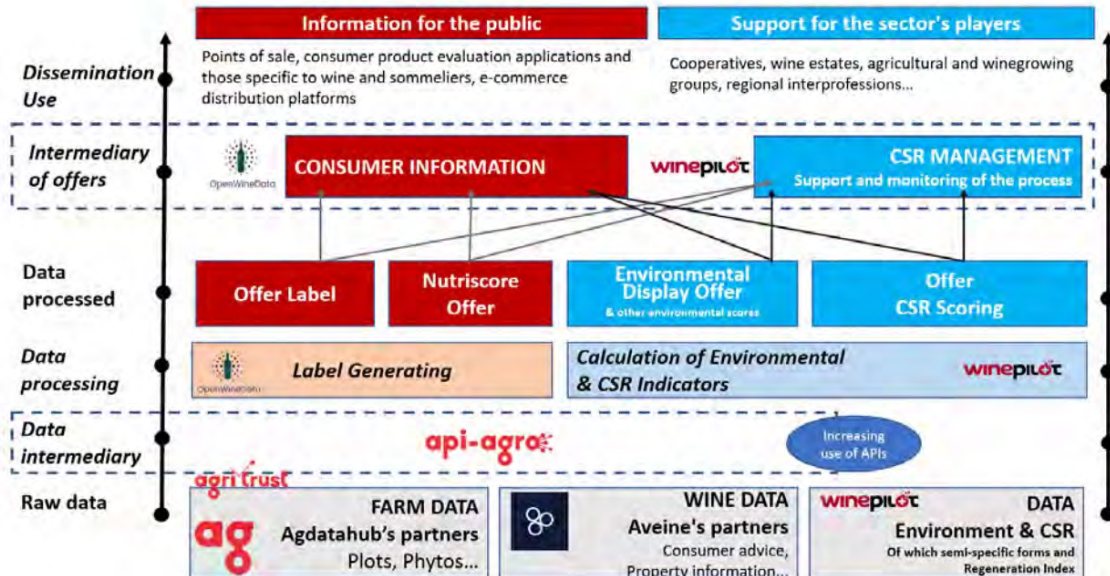
- Digital identity of farms
- Development of agricultural data
- Consent management, interconnection and secure data exchange



agdatahub Use Cases

<https://agdatahub.eu/en/cas-d-usage/>

Functional scheme of data in the wine industry around OpenWineData



USE CASE



Use case
Data exchange

Perimeter
Sourcing wine data and circulating it safely from winegrowers to consumers.

Solutions



Management of
winegrower consent



To have a harmonised nomenclature for the actors and to enhance the value of the data by strengthening the competitiveness of the sector.



Our user

OpenWineData is the **first platform for open, reliable, comprehensive and standardised digital wine data**, from the cluster to the bottle.

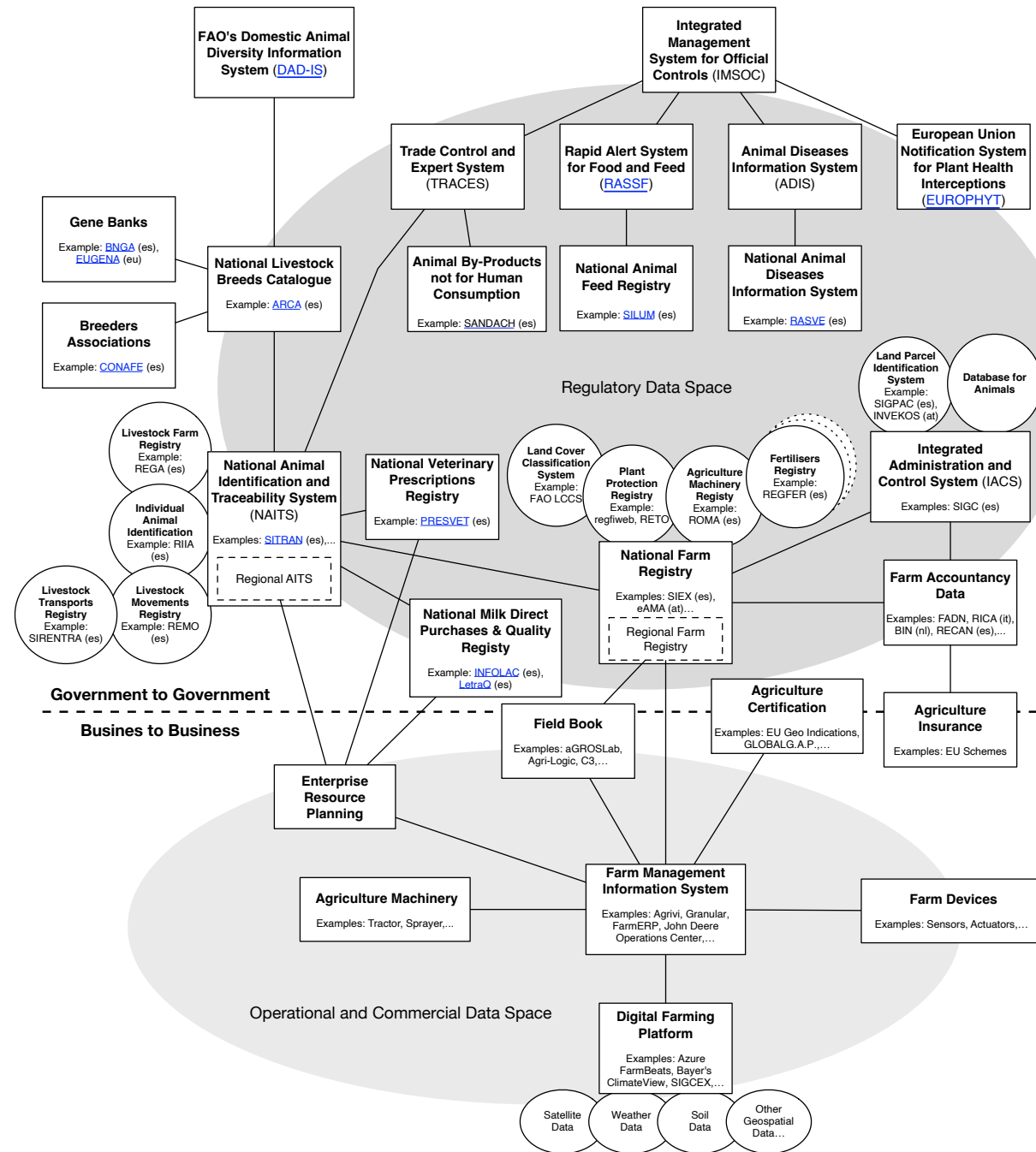
This platform is open to all and offers a **marketplace between data or service providers and companies in the wine and viticulture industry.**



The use case

- ✓ **Sourcing vineyard data** from FMIS starting with MesParcelles and **securing their circulation through API-Agro** by guaranteeing consent for exchanges with Agritrust.
- ✓ **Raw wine data** relating to consumer opinions, estate information, etc., as well as **plot data, phytosanitary data, etc., circulate securely and traceably via the API-Agro platform** in the OpenWineData domain dedicated to the sector.
- ✓ **OpenWineData uses this data to generate the information that is now mandatory on wine labels** and to feed a nutriscore. The objective is to offer a complete range of consumer information to points of sale, consumer product evaluation applications or specific to wines, as well as to e-commerce distribution platforms.
- ✓ Other raw data relating to the environment and Corporate Social Responsibility (CSR) take the same route. **WinePilot offers the calculation of environmental and CSR indicators** through different scorings in order to improve the quality and monitor the extra-financial commitments of the industry's players.

Information Systems involved in Agriculture Data Sharing

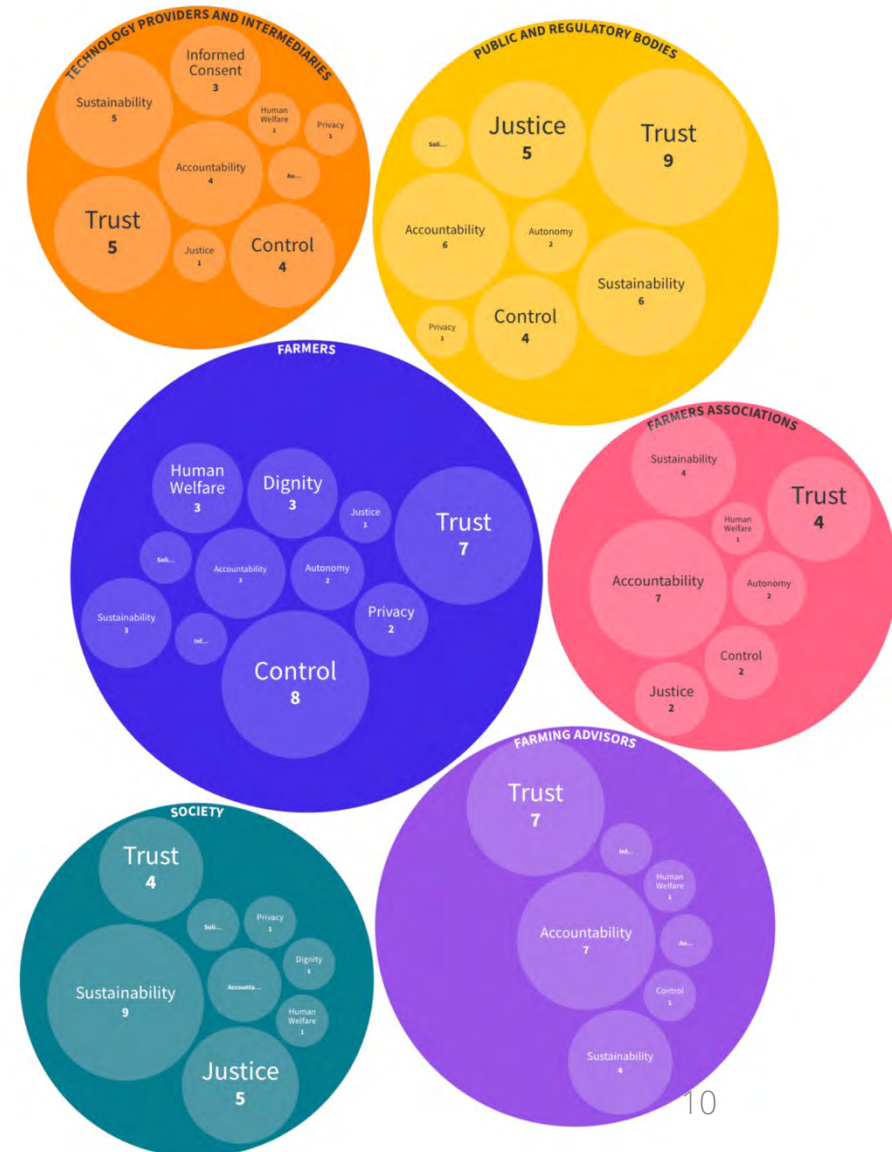


Agriculture Data Sharing Legal and Ethical Aspects

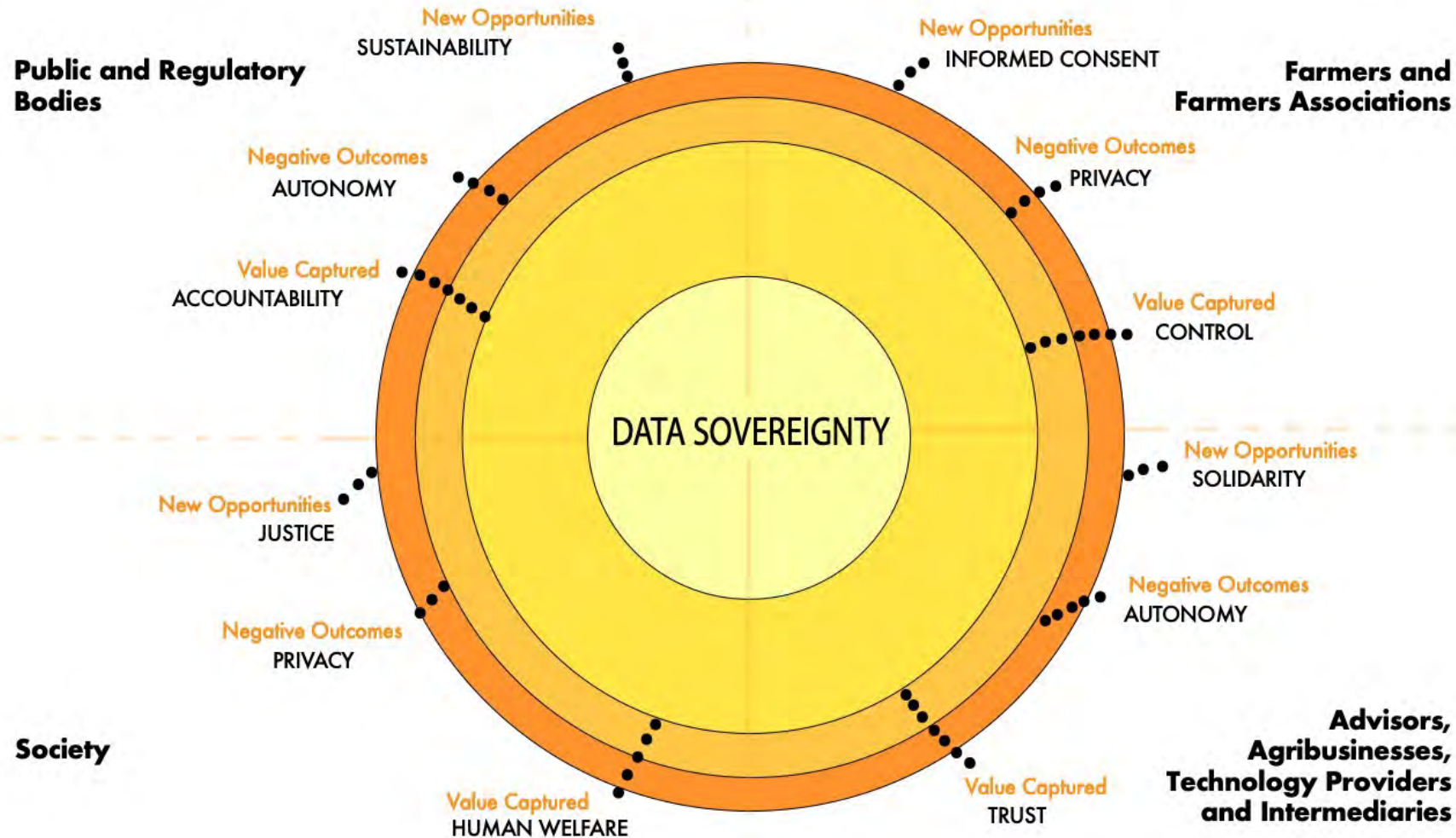
- Starting points:
 - Data Act, Data Governance Act,...
 - "EU Code of conduct on agricultural data sharing by contractual agreement"



- Ethical analysis
 - Value Sensitive Design of Agricultural Data Spaces



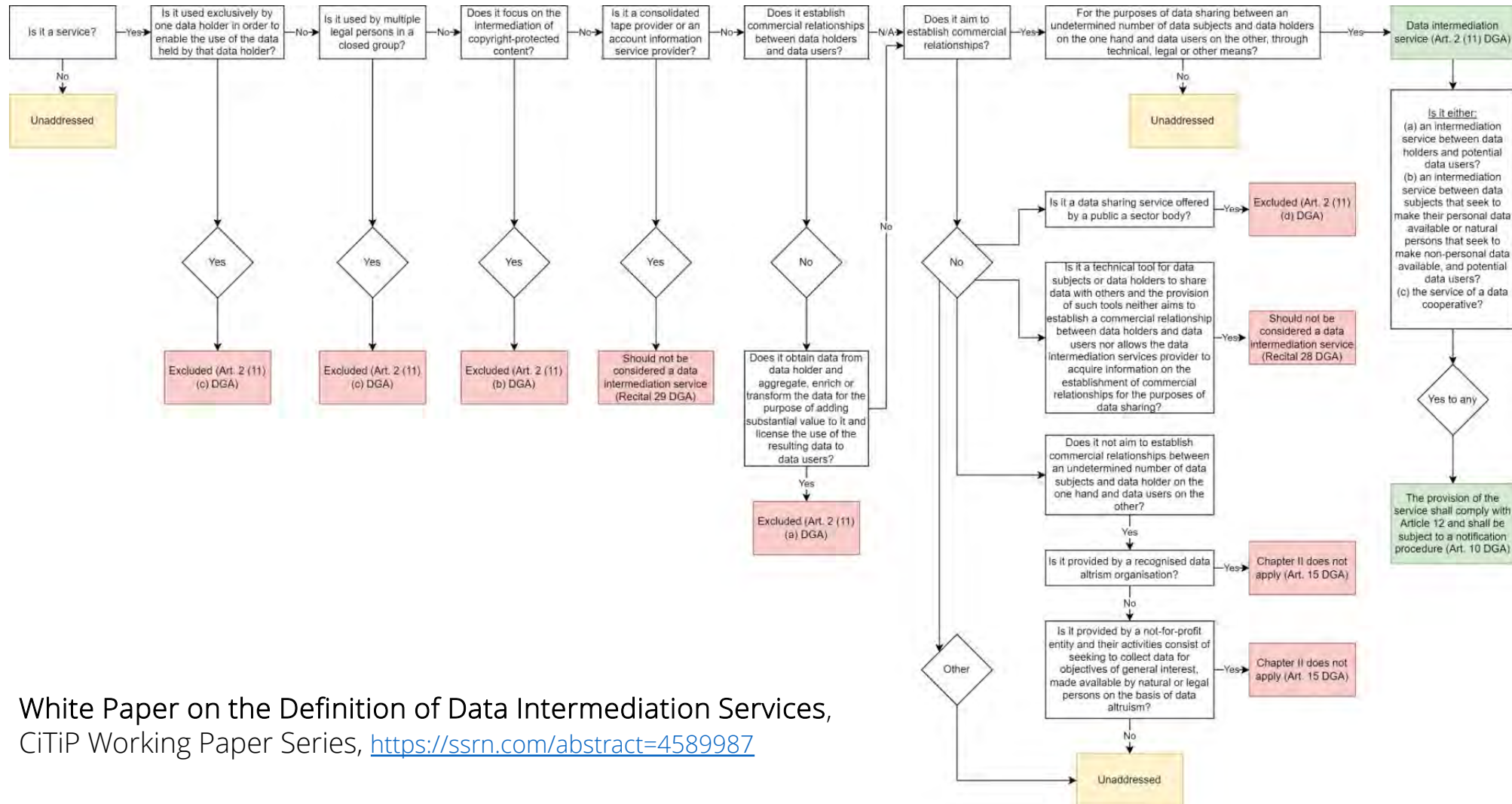
Data sovereignty in the Agriculture Data Space Value Mapping



Data Act

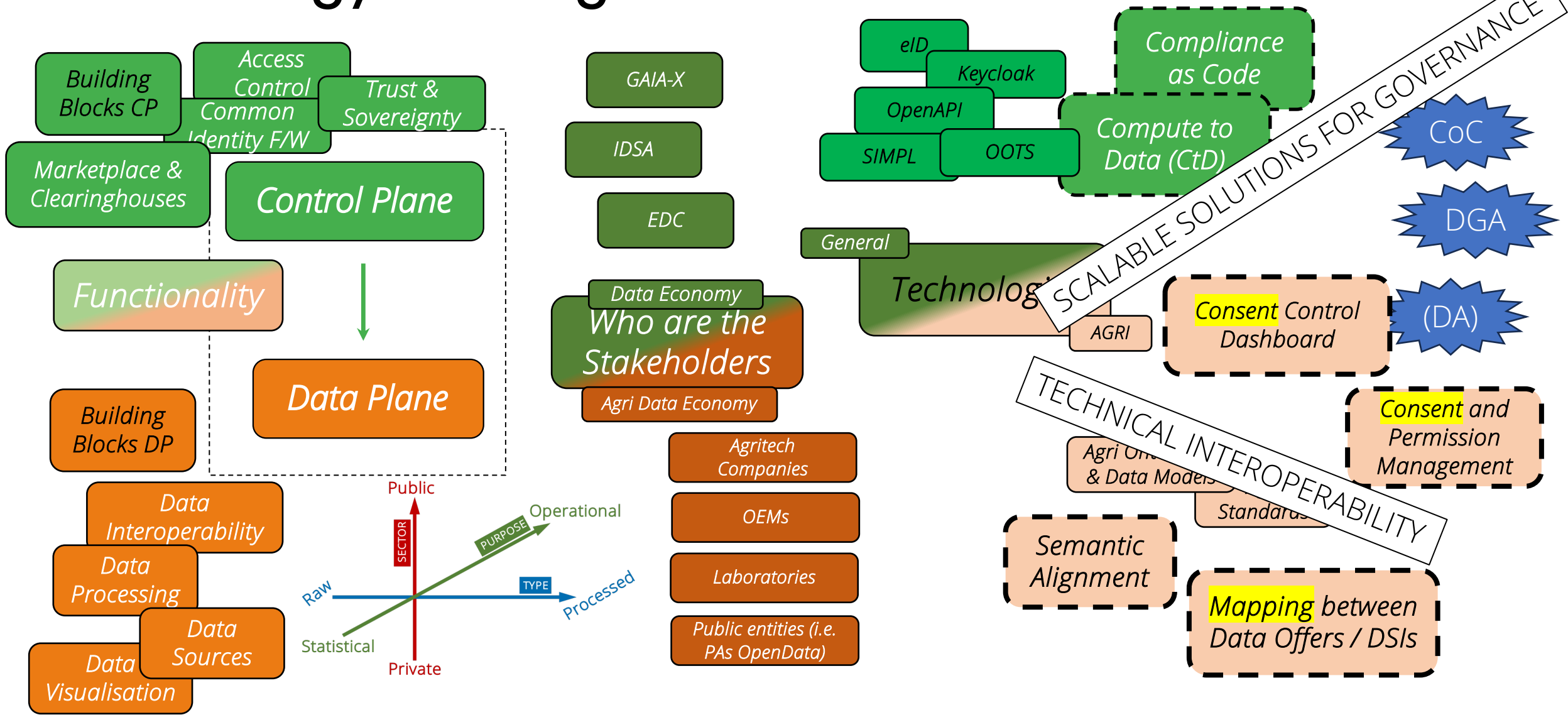
- **Data Space operators** to **facilitate** the **interoperability** of data, sharing mechanisms and services:
 - Make data **FAIR** through **metadata** about datasets content, use restrictions, data quality...
 - Use consistent and public data **formats, vocabularies, classification schemes, taxonomies** and **code lists**
 - Describe in a machine-readable format the technical means, e.g. **APIs**, to **enable automatic access**
 - Provide means to enable the **interoperability** of **smart contracts**
- **Users of connected products** (including agriculture machines) have the **right to access and share** (with a third party of their choice) the data they have generated
- What data: '**readily available data**', can be shared without disproportionate effort by data holders, a mix of:
 - '**product data**', the data generated by the use of a connected product
 - '**related service data**', which represents the digitalization of users' actions
- Data holders can license aggregated industrial data in return for a reasonable **compensation**
- Data holders will have the right to **refuse data access** if disclosing trade secrets would lead to "**serious and irreparable economic losses**" or if there are **specific safety requirements**
 - For instance: data processed through complex '**proprietary algorithms**' excluded

Data Governance Act

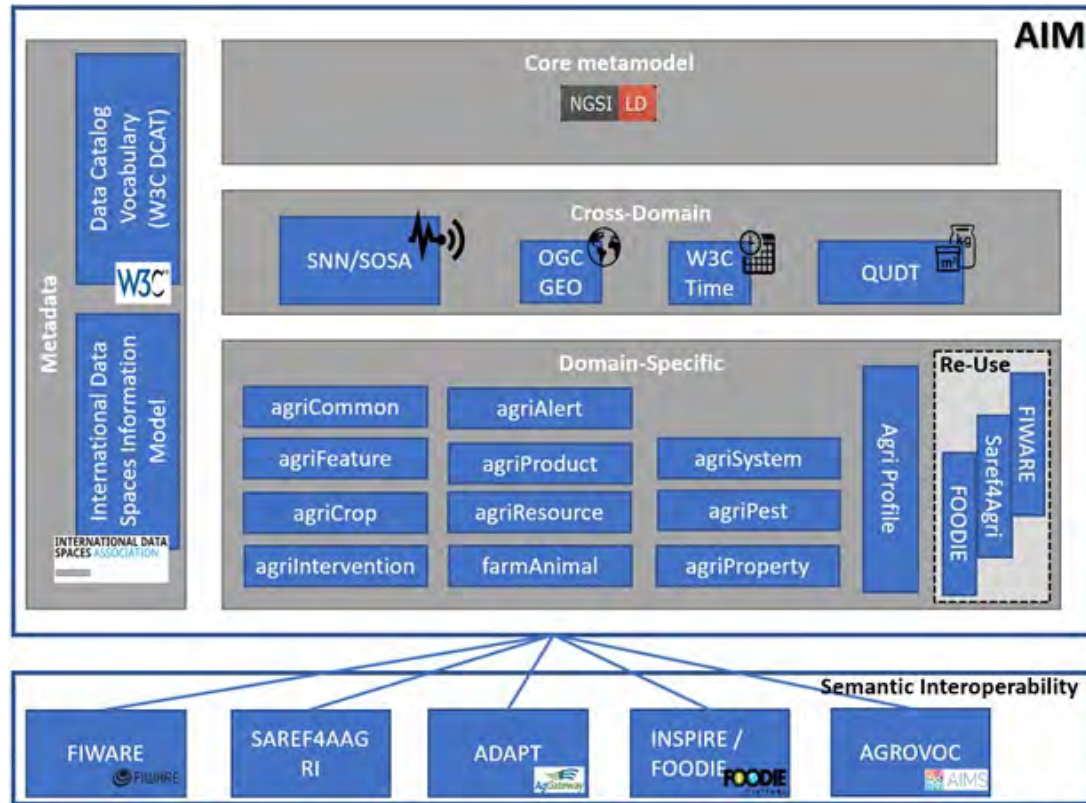


White Paper on the Definition of Data Intermediation Services, CiTiP Working Paper Series, <https://ssrn.com/abstract=4589987>

Technology Building Blocks

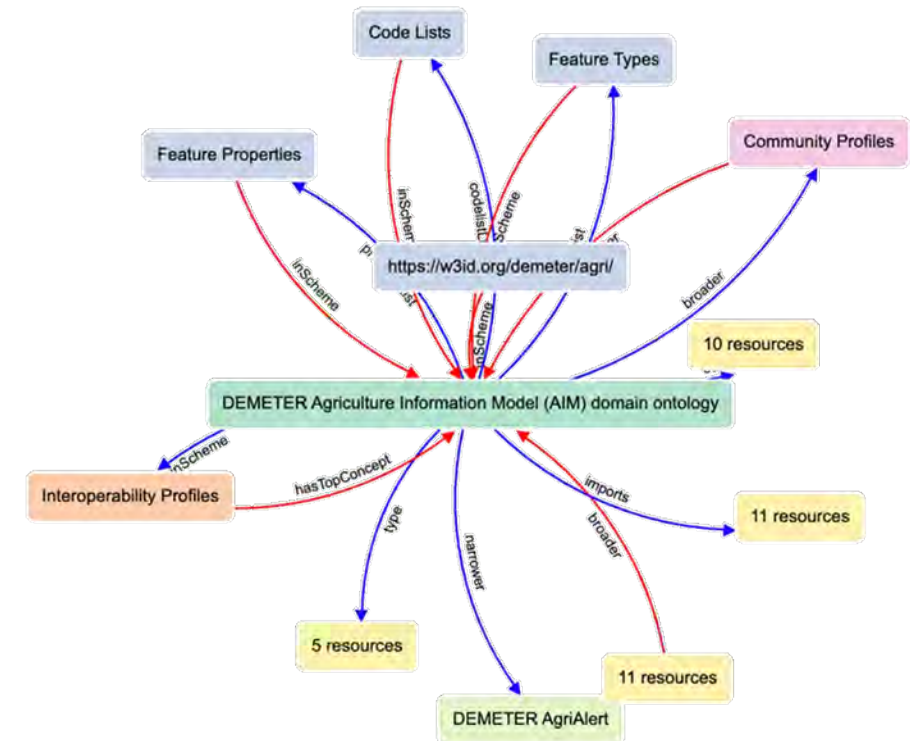


Vocabularies and Ontologies Agriculture Information Model (AIM)



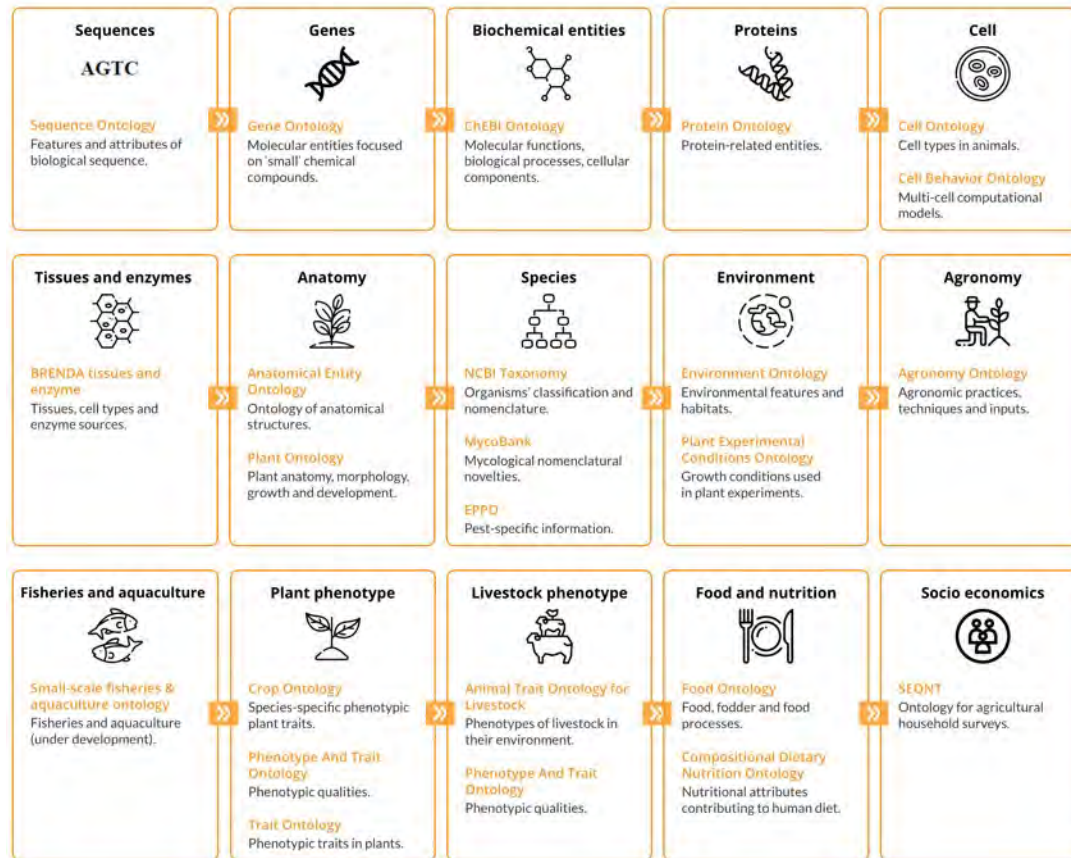
<https://w3id.org/demeter/agri>

OGC Vocabulary:



Vocabularies and Ontologies

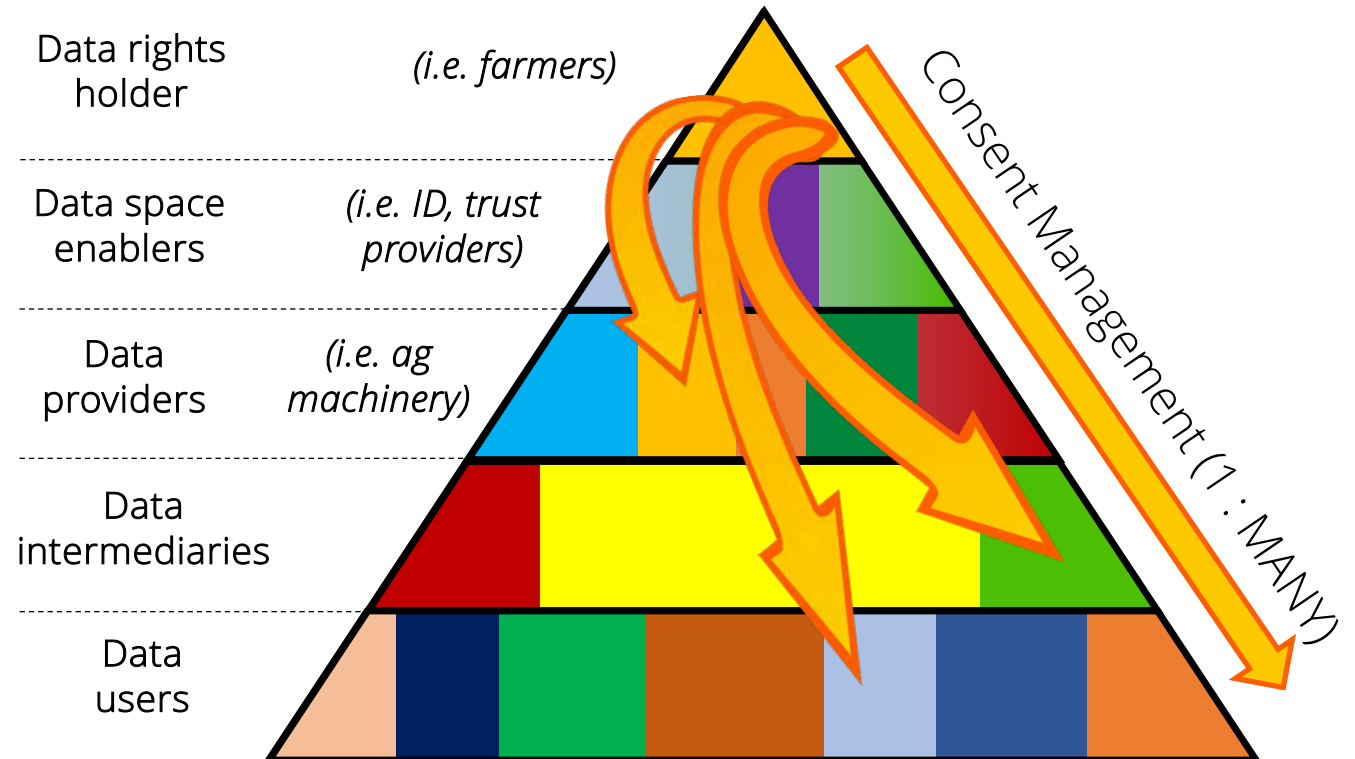
CGIAR: Ontologies most used in Agriculture



- GENERIC ONTOLOGIES AND THESAURI**
 - AGROVOC**: Multilingual and controlled vocabulary designed to cover concepts and terminology under FAO's areas of interest.
 - CAB Thesaurus**: Controlled vocabulary for agriculture, forestry, horticulture, soil science, entomology, mycology, parasitology, veterinary medicine, nutrition, rural studies.
 - CG Core Metadata Schema**: Minimum set of elements applicable for data and publication annotation and curation across CGIAR.
 - Comparative Data Analysis Ontology (CDAO)**: Formalization of concepts and relations relevant to evolutionary comparative analysis.
 - EMBRACE Data and Methods Ontology (EDAM)**: Comprehensive ontology for bioscientific data analysis and data management.
 - GAZ**: Represents places through their names using an ontological approach to promote semantic coherence.
 - Geonames**: Covers all countries and contains over eleven million placenames.
 - National Agricultural Library's Agricultural Thesaurus and Glossary (NAL)**: Online vocabulary tools English and Spanish to select controlled vocabulary terms for subject indexing of AGRICOLA, PubAg and other databases.
 - Research Organization Registry (ROR)**: Registry of open, sustainable, usable, and unique identifiers for every research organization in the world.
 - Units of Measurement Ontology (UO)**: Ontology of units of measurements.
 - Variation Ontology (VariO)**: Ontology for standardized, systematic description of effects, consequences and mechanisms of variations.
 - VIVO Ontology**: Open-source software and an ontology for representing scholarship.

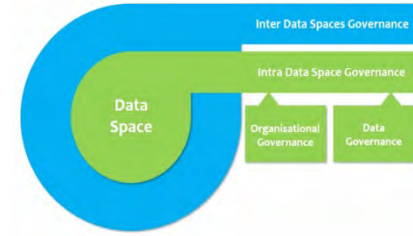
Importance of Consent Management

- Need to consider:
 - Code of of Conduct of agricultural data sharing
 - Data Governance Act
 - Data Act
- Additional requirements related to farmers as “data rights holders”

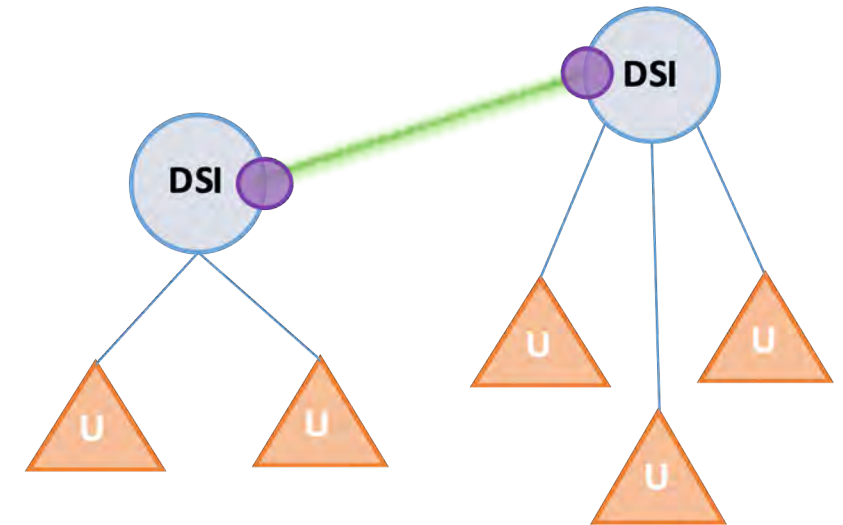


Data sovereignty and interoperability at technical level

- Dataspace Connector: technical component for Data Sovereignty
 - Data exchange acknowledging transactions and enabling policy enforcement
- Trust Identity Framework
 - Trustable data space participants
- Data Models interoperability and Semantic Alignment
 - Mapping between existing vocabularies and ontologies in the agricultural domain



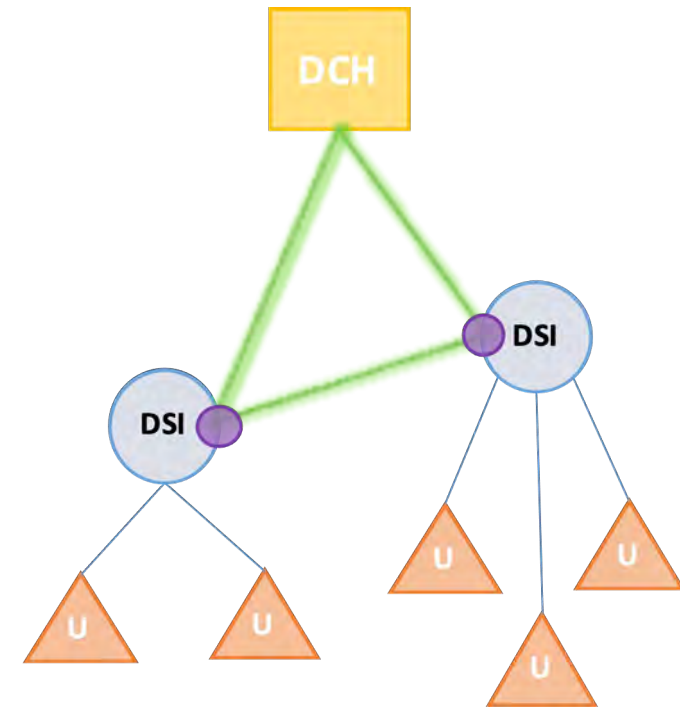
MICRO LEVEL



DSI: Data Sharing Initiative

Towards a data economy in the agricultural sector

- Expanding the architecture to support Macro-level scenarios
- Shared Trust Identity Framework
- Metadata Brokers and Data Catalogues
- Data Clearing Houses to track data exchange



More details...

<https://agridataspace-csa.eu/deliverables/>

How to Access:

1

Download and Sign the NDA

Access requires signing a Non-Disclosure Agreement to protect project information.

2









Submit the NDA

Fill out and send the completed NDA to agridataspace@agdatahub.eu.

3

Approval and Access

Once your NDA is approved, we will grant you access to the deliverables.

<p>D1.1</p> <p></p> <p>Up-to-date online inventory</p> <p>A continuous information collection and analysis of a full spectrum of initiatives and approaches in the data landscape.</p> <p>Delivery Date: 21 Dec 2023</p>	<p>D1.2</p> <p></p> <p>Systematic assessment of the experiences with the code of conduct</p> <p>Systematic description of the experience with the code of conduct within the broad stakeholder community.</p> <p>Delivery Date: 29 Sep 2023</p>	<p>D2.1</p> <p></p> <p>Multi-stakeholder governance schemes and business models for agricultural data spaces</p> <p>Description of the multi-stakeholder governance scheme and potential business models for agricultural data spaces including recommendation on how they could be applied.</p> <p>Delivery Date: 30 Nov 2023</p>
<p>D2.2</p> <p></p> <p>Design principles and guidelines for agricultural data spaces based on legislation and ethical principles</p> <p>Describes design principles and guidelines that can be derived from evolving legislation and underlying ethical principles.</p> <p>Delivery Date: 30 Nov 2023</p>	<p>D3.1</p> <p></p> <p>Definition of requirements for Agriculture Data Space building blocks</p> <p>Set of requirements and definition for necessary essential building blocks of an Agricultural Data Space Architecture.</p> <p>Delivery Date: 09 Oct 2023</p>	<p>D3.2</p> <p></p> <p>Reference Architecture</p> <p>Public positioning paper with detailed description of the essential building blocks of an Agricultural Data Space Architecture.</p> <p>Delivery Date: 31 Jan 2024</p>
<p>D3.3</p> <p></p> <p>Technology Canvas</p> <p>Report on data, models and interoperability solutions as technology enablers for the implementation of Agricultural Data Spaces.</p> <p>Delivery Date: -</p>	<p>D4.1-4.2</p> <p></p> <p>Roadmap for Deployment and Operation of the data space for agriculture</p> <p>Report documenting the roadmap.</p> <p>Delivery Date: 29 Dec 2023</p>	

Thank you for your attention Questions?

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Funded by the European Union

Digital Europe Programme under grant agreement 101083401



Más información:

Portal de ayudas: [https://portalayudas.mineco.gob.es/Programa Espacios Datos Sectoriales](https://portalayudas.mineco.gob.es/Programa_Espacios_Datos_Sectoriales)

Oficina del Dato: <https://datos.gob.es/es/blog-tags/espacios-de-datos>