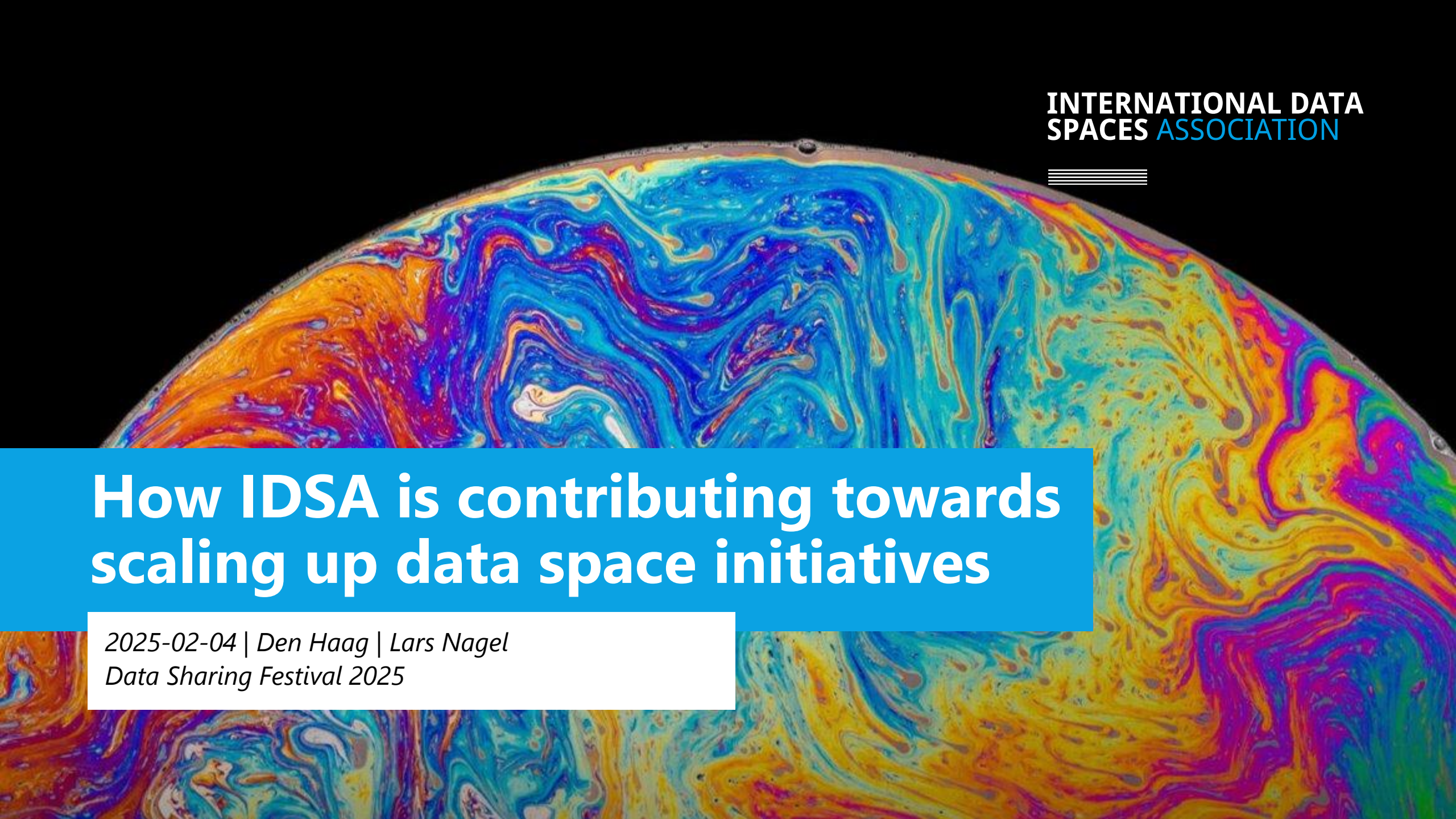

INTERNATIONAL DATA SPACES ASSOCIATION

How IDSA is contributing towards scaling up data space initiatives

2025-02-04 | Den Haag | Lars Nagel
Data Sharing Festival 2025

Our focus. Your benefit. Together.

INTERNATIONAL DATA SPACES ASSOCIATION

Global accectepstandards

Industry grade software and services

Flourishing data ecosystems

Knowledge transfer

IDSA assets – from theory to practice

How we change the way data is shared

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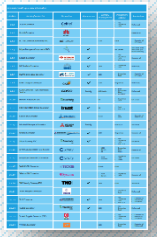
IDSA Rulebook

IDS Reference Architecture Model

IEC ISO W3C IEEE cen CENELEC

Dataspace Protocol and Standardization

IDS Certification

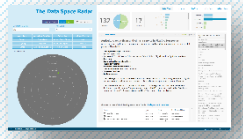


omega-x

smart connected supplier network

Catena-X Automotive Network

Reports such as Data Connector Report

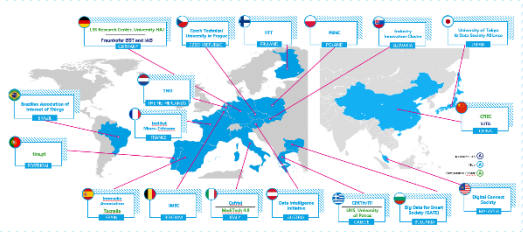


EONA-X

Mobility Data Space

DATA-EX Data Society Alliance

Data Spaces Radar



IDSA Hubs, CC & Research Labs

Theory | **Practice**

International. Data Spaces. Association.

We know what is going on and can help.

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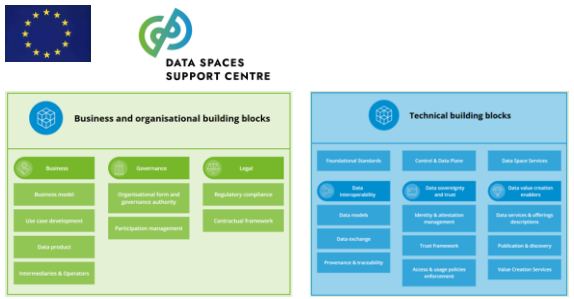
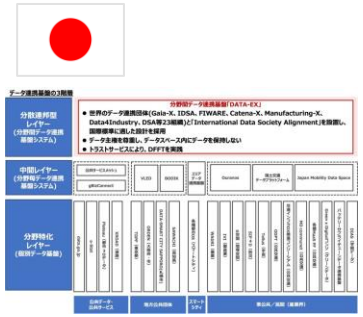
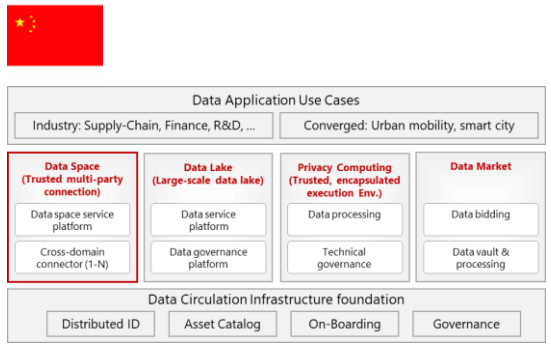
Harmonization of frameworks and data strategies on global level







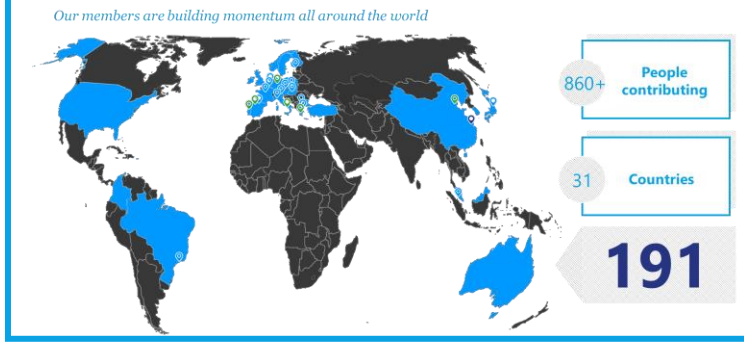
...and much more...

IDSA is the only **true international** organization about data spaces.

Driving global standards

IEC ISO IEEE W3C CEN CENELEC

Strong link to relevant economic areas



Global players to provide data space solutions globally

The path to standardisation

How IDSA assets achieves recognition through ISO and CEN/CENELEC

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IDSA Working Group Architecture → Eclipse Dataspace Working Group → PAS Submission → JTC1

Dataspace Protocol

INTERNATIONAL DATA SPACES ASSOCIATION

IDSA contribute to data spaces standardisation committees

Dataspace Protocol

Data spaces standardisation committees

→ CEN CENELEC **AWS Trusted Data Transaction**
Part 1: Concepts, terminology, and Mechanisms - published

→ CEN CENELEC **JTC 25 - Data management, Dataspaces, Cloud and edge**

→ ISO IEC **ISO/IEC JTC 1/SC 38 Cloud computing and distributed platforms**
ISO/IE CD 20151 Dataspaces concepts and characteristics

The need for Dataspace Protocol

Ensuring data space interoperability

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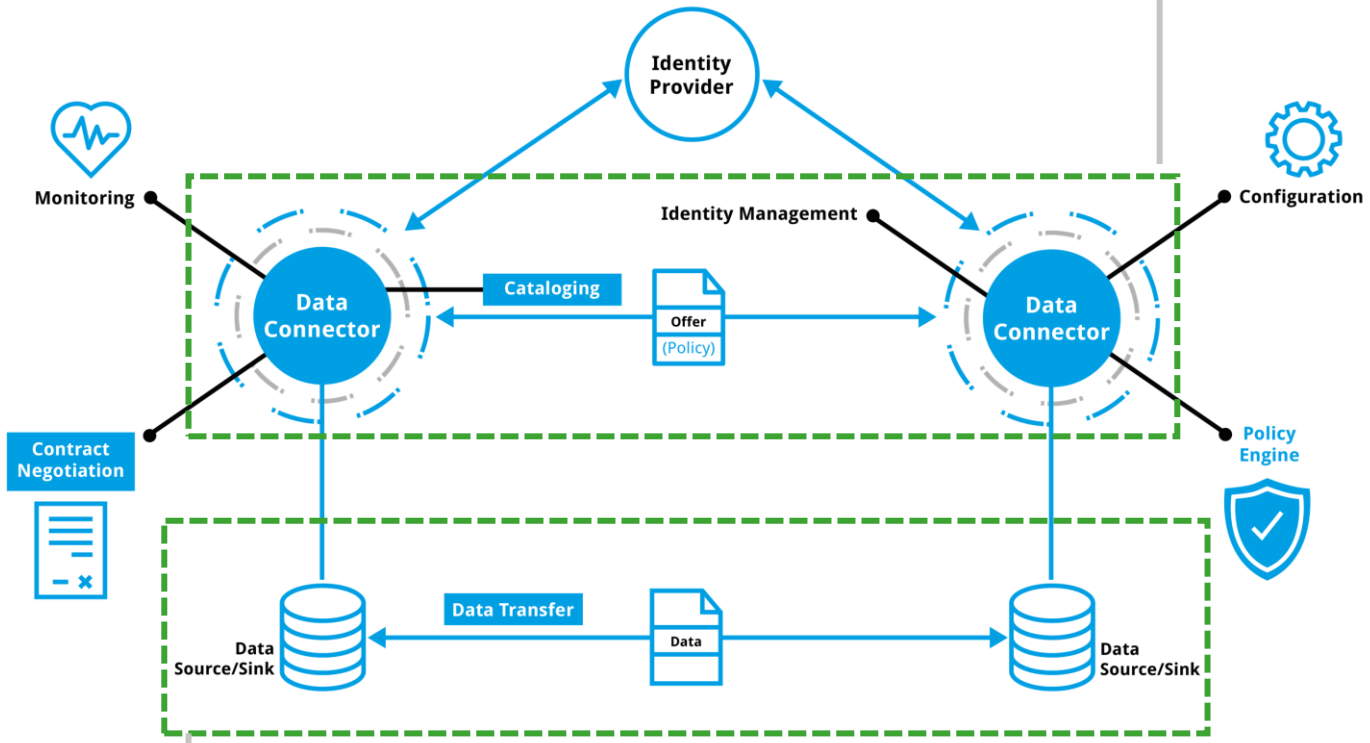
Control Plane
(one standard procedure to negotiate data sharing)



Data Plane
(several possible for different data sharing scenarios:
confidential data sharing, streaming data, event based data, edge devices, ...)

Promotes seamless technical interoperability, while addressing certain aspects of semantic interoperability.

Enables standardized data exchange across different data space instances.

Provides flexibility and scalability through the separation of control plane and data plane.

Driving data spaces innovation

Collaborators defining and embracing the Dataspace Protocol

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Who co-defined it?

SAP
Microsoft
IONOS
Fraunhofer
SOVITY
FIWARE
eng
HUAWEI
TNO
Tekniker
MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE
T Systems
BOSCH
ZF
Catena-X
BMW

Who is currently using it?

Catena-X
Tekniker
MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE
ONENET
one network for Europe
IONOS
ZF
AMADEUS
VTT
SOVITY
Cofinity-X
PROMETHEUS-X
T Systems
NTT DATA
Boot-X
HUAWEI
SAP
truzzt
tecnalia
MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE
TECH2B
X-ROAD
Open

How DSP supports the Data Act

DSP provides a technical and operational framework to meet art. 33

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	Data Act (Article 33)	Dataspace Protocol
Technical interoperability	Requires participants in data spaces to ensure **interoperability**	Provides a **technical standard**.
	Use **machine-readable format** to allow discovery, access, and use. This includes data structures, formats, taxonomies, and API terms	Ensures data and metadata interoperability (**formats** like **JSON-LD**).
	APIs enables automatic, real-time, or bulk access	Implements standardized APIs for **data access and exchange**. The protocol supports **continuous data flows**, secure data transmission.
Governance	Introduce **smart contracts** for automating data-sharing agreements to improve interoperability.	Ensure **usage control** and **data sovereignty** principles, using tools like **smart policies.**
Harmonization	Use of **harmonized standards** (developed by EU standardization bodies) to comply with essential requirements.	Aligns with global standards (e.g., W3C, ISO, GAIA-X) CEN/CENELEC and European standardisation initiatives to create harmonized specifications for data spaces.

Foundational features for data spaces

A modular approach to reflect different domains, needs, ecosystems

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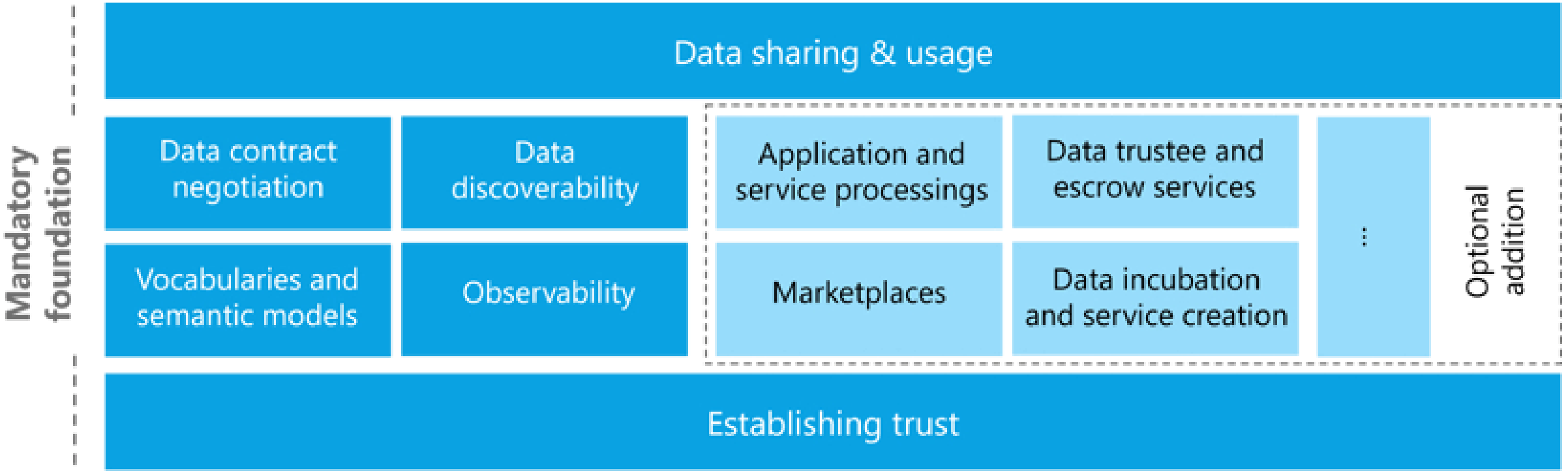

IDSA Rulebook – design and governance scheme for data spaces

We play an ecosystem game

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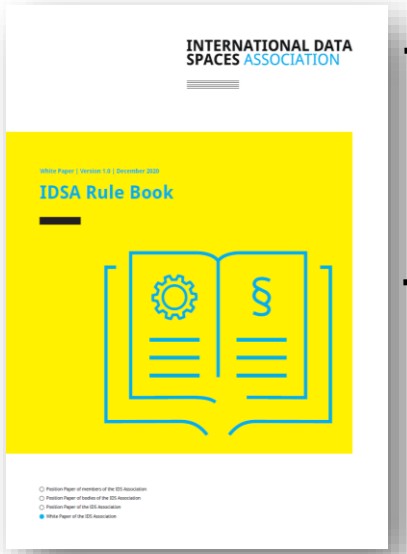

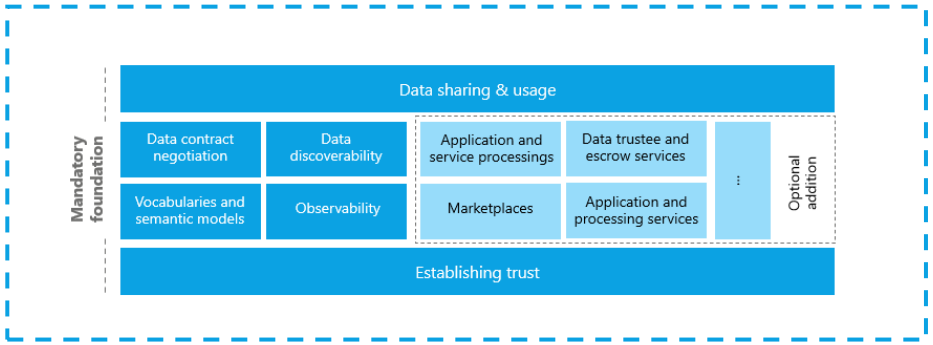

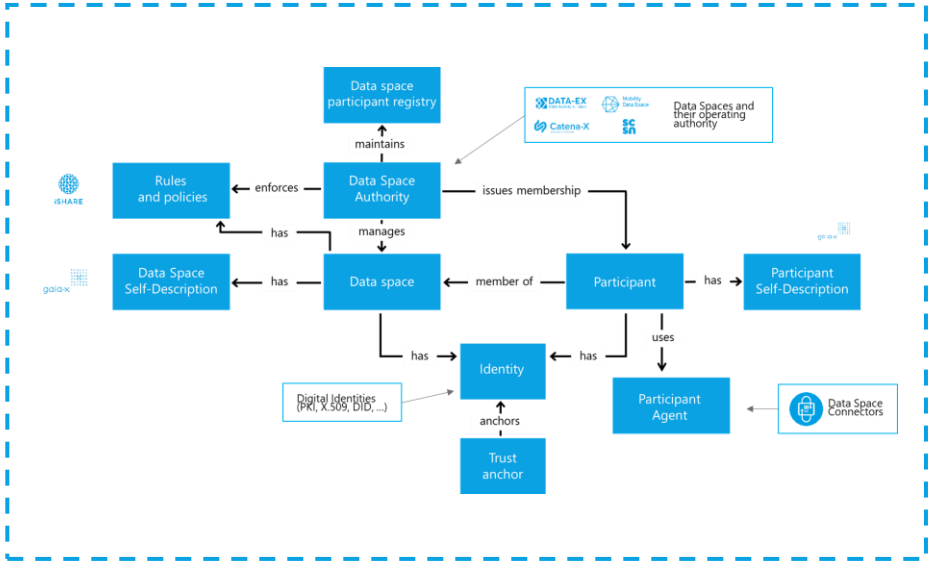

The **IDSA Rulebook** brings together …

- the requirements from data economy …
- with measures for technical, semantic and organizational interoperability.

Reference Architecture 5.0

A consistent, completely new version as thorough base for standardization

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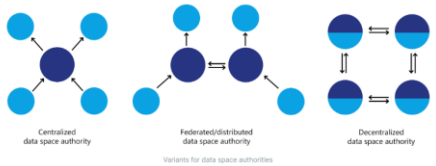
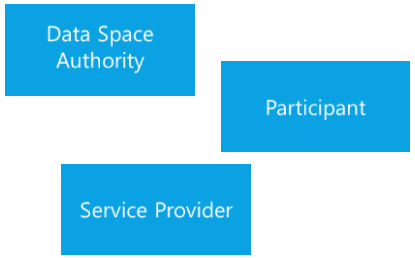
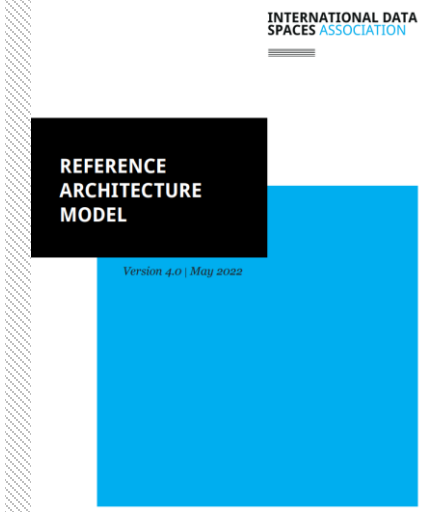
Align with the latest developments
e.g.
Dataspace protocol, Rulebook, DSSC blueprint, etc.

Include **decentralized** and **federated** approaches, e.g., in **Trust framework**



Different roles in data spaces:
Provide architectural guidance for **all**





Open aspects – let us solve them

Important features for data spaces to be added to standardization

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Observability

- How can **transactions** be **observed** while data sharing happens between the participants?
- For **different reasons** such as auditing, billing, legal obligations, etc.

Keywords: Logging, measuring, traceability, auditing, third-parties, ClearingHouse, Observer

Trust

- How can **participants** in a data space **trust each other**?

Keywords: Trust anchors, DAPS, Digital identities, Decentralized Identifiers (DID), SSI, Credentials, verifiable credentials, wallets, certification, usage control …

Business Layer

- What are the **mandatory** and **optional roles** in a dataspace?
- What are the **assets** in a data space?
- **How they map** to each other?

Keywords: Participant, Data space governance authority, Service provider, Marketplace, data space intermediary, Data, Metadata, Contracts/Policies, Vocabularies, Identities, Claims, Services/endpoints, Events and notifications, Observability

Interoperability

How can participants

- **within the same data space** or
- **across different data spaces**

communicate **with each other** in an **interoperable way**?

Keywords: intra-data space, inter-data space, cross-data space, legal, semantic, technical, organizational interoperability, data space protocol

Perfectly embedded in a powerful ecosystem

Joined forces to make data spaces a reality

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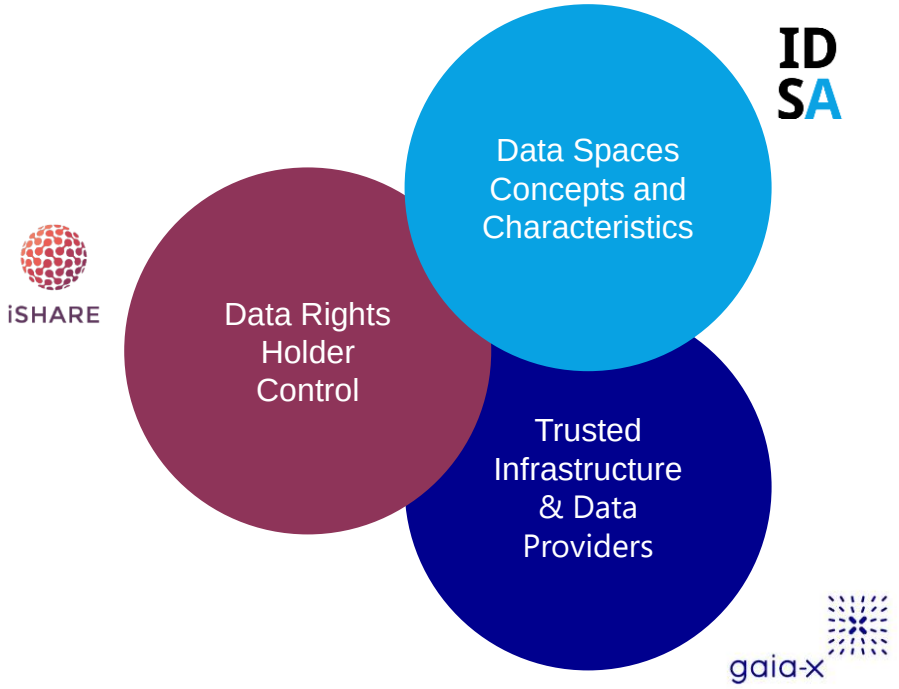
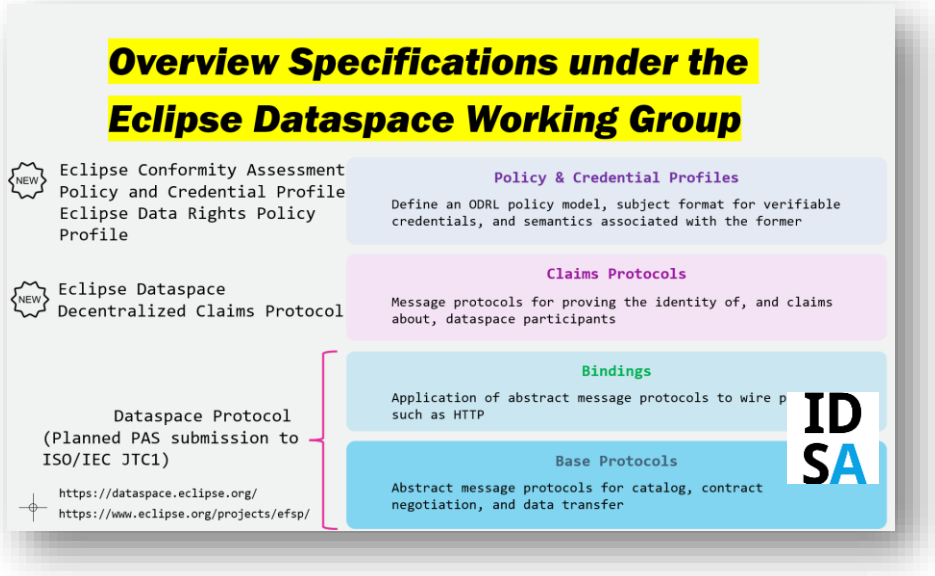


Joint technical specification work under the governance of Eclipse to realize scalable OSS components



Data Spaces Business Models

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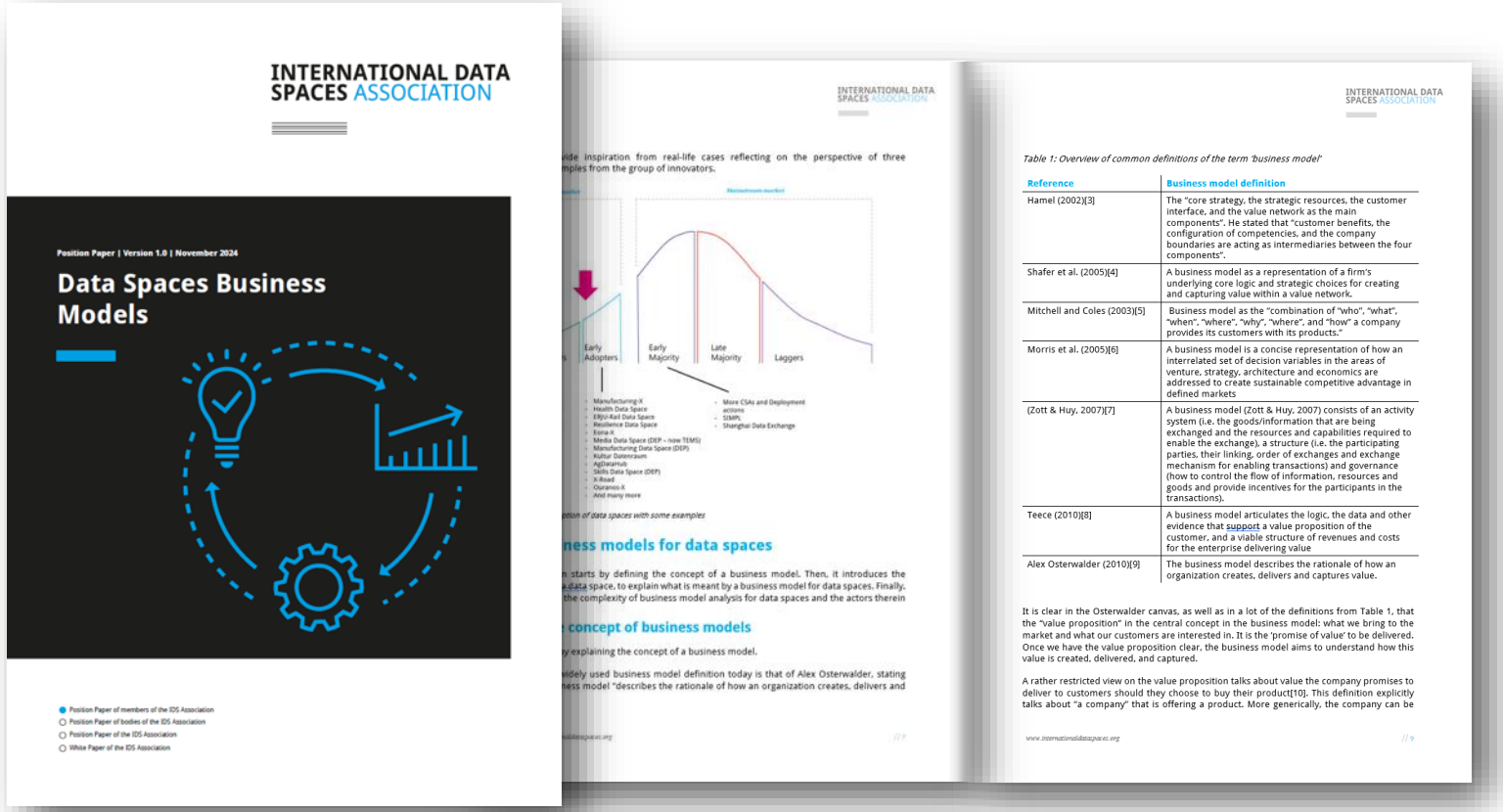

- Business models for different perspectives: data space infrastructure & participants, depending on their perspective.
- Value grows the more participants join, creating mutually reinforcing benefits.
- Value creation in data spaces is more than monetization, includes also societal benefits.
- Aim is a common understanding that allows an effective & consistent communication about data space benefits.

www.internationaldataspaces.org/data-spaces-business-models

IDSA Data Space User Group

Have your Data Spaces Experience

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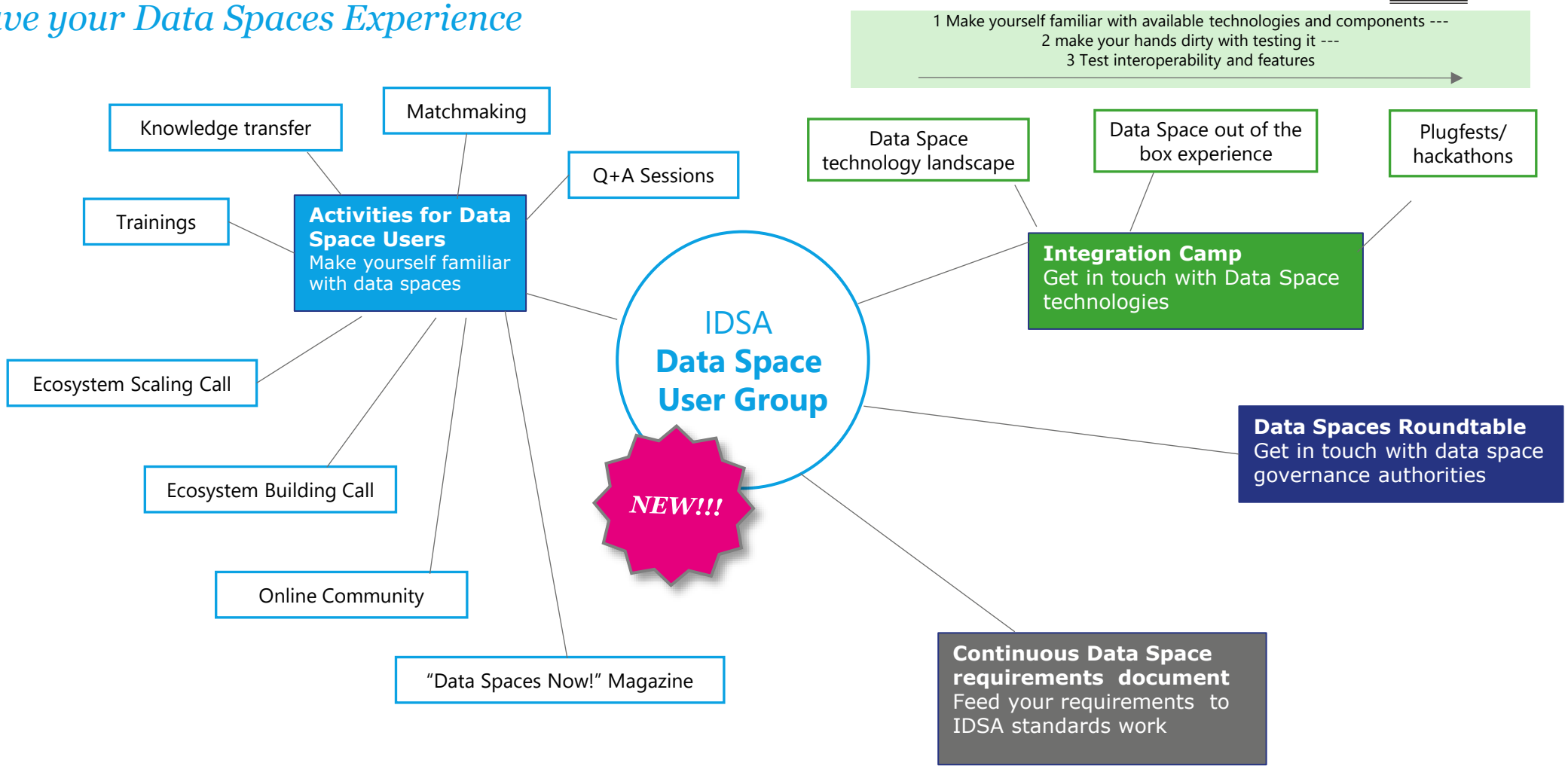

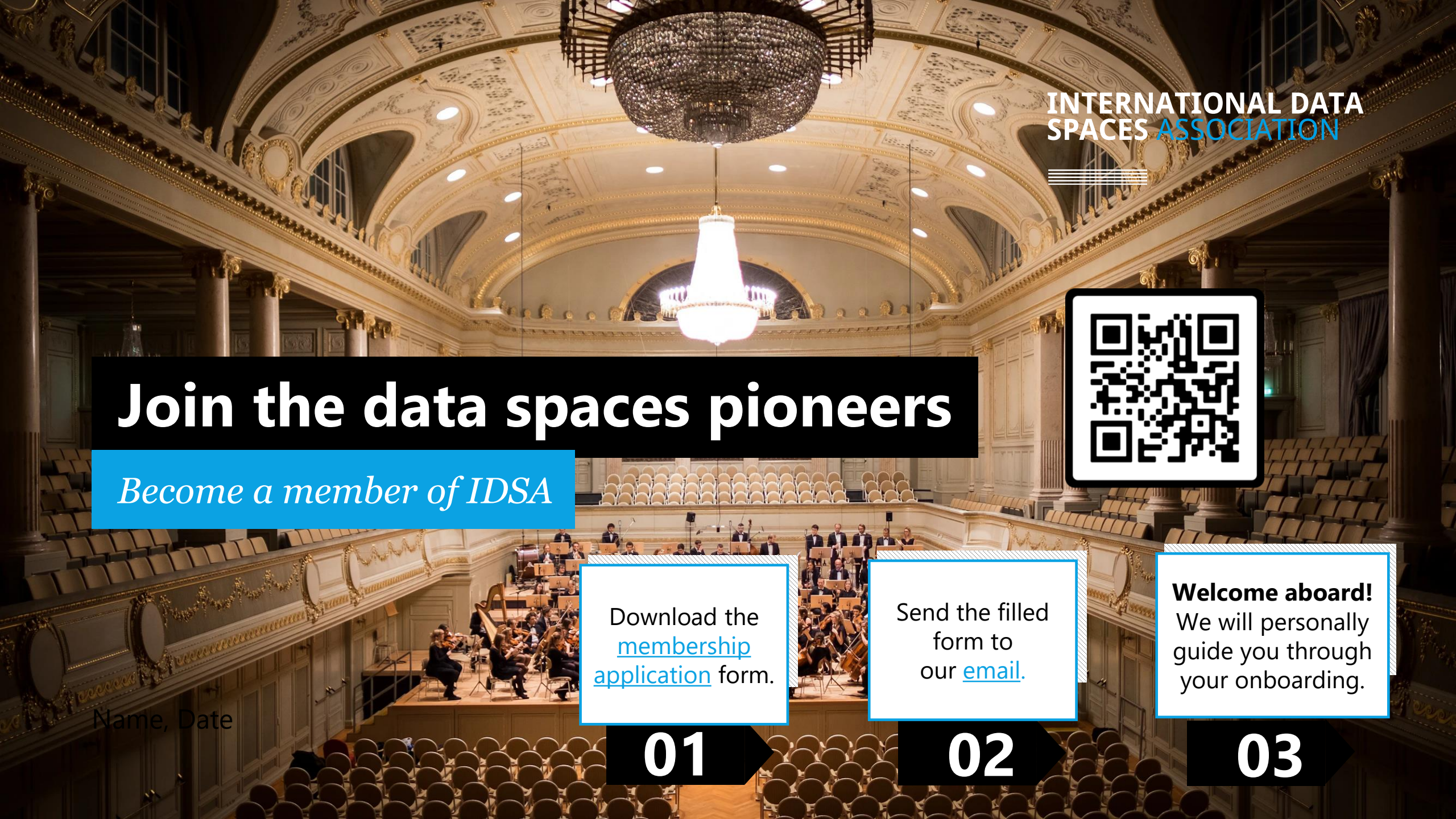

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Join the data spaces pioneers

Become a member of IDSA

Name, Date

Download the membership application form.

01

Send the filled form to our email.

02

Welcome aboard! We will personally guide you through your onboarding.

03

INTERNATIONAL DATA SPACES ASSOCIATION

Lars Nagel

CEO

www.internationaldataspaces.org

+49 173 2929140

lars.nagel@internationaldataspaces.org

A holistic approach to bring data spaces to global scale

IDSA defining global standards for data spaces

INTERNATIONAL DATA SPACES ASSOCIATION

Formal standardization
Creating global standards as reliable base for a flourishing global data economy

ISO · CEN · CENELEC · IEEE · W3C

Market observation and guidance
Data Spaces Radar
Connector Report
Radar Report and case studies

International

Neutral, technology-agnostic

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Consensus-based

Member- and industry-driven

Makers plan, build and run data spaces:
Cloud providers, Telecommunication providers, Software vendors, System Integrators, Data Space Governance Authorities, RTOs, Consultancies

Makers

\+

Users

Reliable offerings for success

Requirements from reality

Users benefit from data spaces:
Companies, organizations, public administrations, individuals

Core assets defining standards for data spaces

Working Groups
WG Rulebook
WG Reference Architecture
WG Certification
WG Training

IDSA Rulebook
for holistic governance view

Reference Architecture
as technology-agnostic framework on conceptual model

Dataspace Protocol
as detailed specification and essence for interoperability

Certification
for reliable industry grade components

Data Space Body of Knowledge
as foundation for knowledge transfer

Impact

International proliferation and harmonization
IDSA Hubs
IDSA Competence Centers and Labs
Liaisons
Roundtables

#Harmonization:

Open Source
Eclipse
Fiware

Data Spaces in a box
Testbeds
Sandboxes
Labs

Business relevance and adoption
Data Space User Group

Policy counselling (to be started)
Policy and Innovation Forum

Fostering market adoption: Increasing readiness level & extensive use of IDS concepts