350 people contributing

50+ industry driven projects

20 countries
FROM TRIAL AND ERROR TO COMMERCIAL USE
**EVOLUTION OF THE IDS ASSOCIATION**

**ACHIEVEMENTS AND FUTURE CHALLENGES**

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### PHASE 1: RESEARCH AND REQUIREMENTS

- **Define.**
  - Connector Concept
  - Usage Control
  - Information model
  - Reference Implementations
  - Sample Code
  - Functional Requirements

- **Defining fundamental principles**
  - Driven by research and technology institutions
  - National and European research projects

- **Enlarging TRL**
  - Technology Innovation
  - Developing components and services
  - Eliciting requirements from use cases

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### PHASE 2: ADOPTION AND STANDARDIZATION

- **Define.**
  - Reference Architecture
  - Specifications/Protocols
  - Operation Concept
  - International Liaisons

- **Design.**
  - DIN SPEC
  - IDSA Hubs, Testbeds
  - Certification Scheme

- **Adopting technology**
  - Driven by research and technology institutions
  - National and European research projects

- **Standardization and specification**
  - Specifying re-usable components
  - Formal standardization efforts

- **Building first ecosystems**
  - Elaborate business relevant usage scenarios
  - Joint efforts towards first offerings in few to few ecosystems

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### PHASE 3: PROLIFERATION AND OPERATION

- **Define.**
  - Commercial Offerings
  - Basic Infrastructure
  - Operations
  - Roll-out strategy
  - Financing

- **Design.**
  - Operational infrastructure
    - Central service offerings and professional services
  - Governance
    - Role model and operating concept
    - Legal form
  - Scaling and roll-out measures
    - Market exploitation strategy
    - Financing

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**We are here**
Concrete running projects adopting IDS technology will prove resilience of IDS concepts.
IDS OUT IN THE WILD

- More projects
- Faster adoption
- Faster rate of maturity
- First commercial offerings

50+ projects

Years since foundation of IDSA

Market readiness

Maturity Level
Industrial Additive Manufacturing is changing value chains and supply chains. The initial Platform is already piloted. Now, we have to build and grow the ecosystem.

Stimulate digital interactions between partners in an industrial production network.

powered by IBM Blockchain + International Data Space

Lead innovation - Join the platform
Smart Connected Supplier Network

- Improved data sharing of ERP and PLM data in the high-tech/low-volume supply chain
- 100 high-tech machine building suppliers
- 10 leading ERP and PLM software providers
- ‘connect once’ and share data with all other parties in the network in a controlled way.
Cloud based track and trace for lot size one

- Merging data sets from capacity planning, work in progress, production, machine status, logistics
- Full data supply chain per customer order in lot size one
- Data sovereignty, transparent supply chain, improved process and part quality
- Data harmonisation for industrial AI
IIC Testbed – Smart Factory Web

- flexible assignment and sharing of production resources
- Foundation for marketplaces for manufacturing
- Integration of AAS and usage control concepts
Interactive exploration of service offering:

- Connector offerings
- Value adding services
- Data sets
- Infrastructure services
- Certification services
DATA SHARING IS BETTER THAN PLAYING ALONE
## GO LIVE STRATEGY

### FROM 1:1 PROJECTS TO MANY:MANy PROJECTS
- Validate IDS concepts for data sharing in small sandboxes, than scale
- Use existing company networks and value chains

### ATTRACT AND INFLUENCE WHOLE ECOSYSTEMS
- Liaisons with data sharing initiatives
- Mature data sharing business ecosystems intra- or cross-domains

### STANDARD INTEGRATION
- Formal standardization
- Architecture alignments
- Focus on certain components (asset administration shell, identification, ...)

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For more information, visit [www.industrialdataspace.org](http://www.industrialdataspace.org)
Interweaving our architecture with other leading global initiatives
STANDARDIZATION
WAY FORWARD

• DIN SPEC 27070 will be published in December 2019 by DIN,
• Translation to English immediately
• Start Fast Track program to ISO Standard
• Preferred: ISO/IEC JTC1/SC27 → ISO/IEC 27070 (number may change)
• The Content of the DIN SPEC shall not be changed. We need acceptance by the majority of the members of the Working Group. → We have to address this at our international members and liaisons.
• Next Steps: Standardization of IDS Infomodel via W3C
IDS-ready

Access to trusted data spaces via digital certificates
Compliance to IDS reference architecture for components & organizations

**THE 2 PHASES**

**IDS-ready Review (available)**
The review is carried out by members of the WG certification; the IDSA Head Office is responsible for issuing the IDS-ready statements.

**IDS Certification (starting Q2/2020)**
The evaluation is carried out by evaluation facilities approved by the IDS Certification Body; the IDS Certification Body is responsible for issuing the IDS certificates.

**Connecter Specifications:**
- IDS Requirements according to Criteria Catalogue
- 62443-4-2
- Best Practice Requirements for Secure Software Development

**IDS-specific organizational criteria (aligned with ISO/IEC 27001:2013) are used, existing certificates can be re-used by an organization, e. g.:**
- ISO/IEC 27001:2013
- AICPA – Trust Services Principles Criteria 2014
- ANSSI Référentiel Secure Cloud 2.0 (Draft)
- CSA Cloud Control Matrix 3.01
- IDW ERS FAIT 5 04.11.2014
- BSI IT-Grundschutz 14. EL 2014
- BSI SaaS Sicherheitsprofile 2014
IDS-certified
Currently defined, realization towards April 2020

Five steps are necessary to establish a functional IDS certification:

- **Audit Framework**: A framework for the tasks and responsibilities during the certification process must be established. It will be based on the framework for Trusted Cloud.

- **Digital Certificates**: The infrastructure to issue digital certificates including a Certification Authority (CA) and a PKI must be available. This infrastructure must be in accordance to IDS Reference Architecture.

- **IDS Certification Body**: The certification body must be operational. This role must be filled by the IDSA Head Office or an external service provider commissioned by the Head Office.

- **Evaluation Facilities**: In the beginning the evaluation facilities must be approved by the IDSA Certification Body. *In the long term the evaluation facilities must be accredited by the DAkkS (German Accreditation Body) or another country’s national equivalent.*

- **Data Protection Controls**: A requirement for data protection controls for GDPR compliance must be added to the IDS certification criteria catalog (participants). No data protection audit during IDS certification.
ECOSYSTEM FOR THE DATA ECONOMY
OPEN, NEUTRAL TRUSTWORTHY
1. **Data Owners/Providers/Users**
   - Seeking data control & insights
   - Sharing & monetizing data

2. **Service Providers (Broker, App Store, Vocabulary Prov.)**
   - Acquiring & retaining customers
   - Monetizing data services & solutions

3. **Infrastructure Providers (Identity, Clearing & Billing, Certification, Technology/Connector)**
   - Enabling secure data exchange
   - Monetizing data services & solutions

4. **International Data Spaces Association (not for profit, altruistic)**
   - Safeguarding the value propositions
   - Setting the rules
   - Delivering trust (certification and identities)
HOW TO ADOPT IDS
THE ADOPTION PROGRAM

MAKE
How to enable implementations?

USE
How to create the mind shift?

SPREAD
How to inform everybody?

CONNECT
How to connect the right people?
make use
ENABLING ADOPTION
PARALLEL STREAM TO STANDARD DEVELOPMENT

Adoption
- Onboarding Community
  - Knowledge Transfer
  - Trainings & Seminars
- IDS-G
  - Public documentation
  - APIs
  - Versioned
- Certification
  - Conducted by independent evaluators
  - Based on industry standards (ISO 27001, IEC 62443)
- Product
  - Provided by companies
  - Proved interoperability and aligned to Standards

Definition & Standardization
- Topics & Requirements
  - Gathering requirements and technologies from various domains
- Developers Community
  - PoC for concepts
  - Provide Reference Implementation
  - Partially Open Source
- Testbeds
  - Show vital ecosystems
  - Foster development of domain specific adoptions
- IDS-RAM & Certification Criteria
  - Released once per year
  - Core of the IDS
  - Open Standard
- Standards
  - DIN SPEC 27070
  - ISO Standards
  - W3C Standards
  - Reuse of existing Standards

We successfully implemented this
- We have to work on this
• Public,
• versioned,
• agreed and stable ...

... documentation and specification of IDS Reference Architecture Model
STARTER KIT

Starter Kit

- Guide for new members and interested parties
- First steps in implementing a connector
- Important documents and relevant sources
ENABLERS FOR DIGITAL ECOSYSTEMS

User
Individual, company or complete ecosystem of companies

Digital Ecosystem
- Service Platforms/Market Specific Solutions
- Data Sharing Infrastructure (IDS)
- Cloud/Edge Infrastructure
- Network/Devices

Essential Trust Services
- Clearing House
- Certification Body
- Certification Authority
- Dynamic Trust Management
- Dynamic Attribute Provisioning

Base Services
- Service Availability
- Transaction Services
- Quality Assurance
- Micropayment Services
- Usage Control
- Data Governance/Privacy
- Encryption Services
- Platform Access, Antitrust
ENABLERS FOR DIGITAL ECOSYSTEMS

User
Individual, company or complete ecosystem of companies

DIGITAL ECOSYSTEM
- SERVICE PLATFORMS/MARKET SPECIFIC SOLUTIONS
- DATA SHARING INFRASTRUCTURE (IDS)
- CLOUD/EDGE INFRASTRUCTURE
- NETWORK/DEVICES

ESSENTIAL TRUST SERVICES
- Clearing house
- Certification body
- Certification authority
- Dynamic trust management
- Dynamic attribute provisioning

BASE SERVICES
- Privacy, auditability
- Transaction services
- Quality scoring
- Interpayment services
- Data usage control
- ...
ENABLERS FOR DIGITAL ECOSYSTEMS

Operational Infrastructure

Certification authority

Quality assurance

Recognition services

Platform access, admission

Operating concept

Financing for roll-out and ramp-up

Concept for a data sovereignty fund
NEW BRIEFING DOCUMENTS

Brochure “IDS – A Standard For Data Sovereignty And An Indispensable Element of Data Ecosystems”

Paper “IDS – A Standard For Data Sovereignty”

Paper “Fact Sheet & Core Statements”

www.internationaldataspaces.org/briefing-documents
IMPORTANT PUBLICATIONS

Reference Architecture Model

Brochure “IDS – A Standard For Data Sovereignty And An Indispensable Element of Data Ecosystems” | Topics: Reason why, Enablers, Evolution, Facts & Statements

White Papers
- Sharing Data While Keeping Data Ownership
- Framework for the Certification Scheme

Position Papers
- Blockchain in the IDS
- Data Driven Digitization of European Industry
- Data Logistics and AI in Insurances
- Open Data Spaces

www.internationaldataspaces.org/info-package
IMPORTANT PUBLICATIONS

Info-Graphic: Understanding the IDS

Use Case Overview

Use Case Overview, 2019 Edition

Magazine: Data Spaces_Now

Issue #1  Issue #2  Issue #3  Issue #4  Issue #5

www.internationaldataspaces.org/info-package
IDSA Hubs
9 HUBS IN 9 COUNTRIES

- **Innovalia Association**
  Bilbao, SPAIN

- **Institut Mines-Télécom**
  Paris, FRANCE

- **Eldorado Institute**
  Campinas, São Paulo, BRAZIL

- **Czech Technical University in Prague**
  Prague, CZECH REPUBLIC

- **TBA**
  BELGIUM

- **TNO**
  The Hague, NETHERLANDS

- **VTT**
  Espoo, FINLAND

- **Cefriel**
  Milan, ITALY
  - Awareness workshop @SMAU fair in Italy
  - Logistics Use Case

- **TBA**
  GREECE
The change towards data economy and therefore the adoption of IDS-concepts affects the whole company!
“I can’t wait to be involved!”

CEO

- What is the role of your company in the future?
- Move on from platform economy towards ecosystems. Create dynamic value creating ecosystems.

Set up your team.

Change your mindset.
“I can’t wait to be involved!”

New business perspectives.
• Exploit new markets while staying productive in your legacy business.

Join the onboarding community.
Get in touch with our adoptionists.
“I can’t wait to be involved!”

You have to understand the whole story.
• Realize technology push while understanding market pull.
• Learn to cope with digital dilemmas.

Join the architecture working group.
Get inspired by our solutions.
“I can’t wait to be involved!”

Software Developer

Make IDS

Join the developers community.

Check GitLab and Jive for code and specs.
Co-create IDS!

Onboarding Workshop train the trainer hubs
Milano
February

Data Sovereignty Fund Workshop

Ecosystem Call
Mondays
9 – 10 am

Workshop CA relationship to individual identities (SOLID, SSI, W3C DID)
Jan 21, online

Appstore Spec Workshop
December 12, online

Clearing House Specification Workshop
Jan 13, online

Digital Identities – how to implement
Jan 20, online

Workshop CA technical implementation

Broker Spec Workshop
Jan 7, online

Technical Steering Committee
Mondays, 1:15 pm, on invitation only, open for applications

Plugfest
Jan, 8 and 9
Dortmund

Adoption Consultation Hour (web)
Monthly, Fridays 10 am

Onboarding Workshop train the trainer hubs
Milano
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Jan, 8 and 9
Dortmund

Adoption Consultation Hour (web)
Monthly, Fridays 10 am
See you in Hannover!

HANNOVER FAIR | HALL 16
APRIL 20th TO 24th, 2020