

#IDSgolive

# IDS LAUNCHING COALITION

*LC FEST – JUNE 29, 2020*





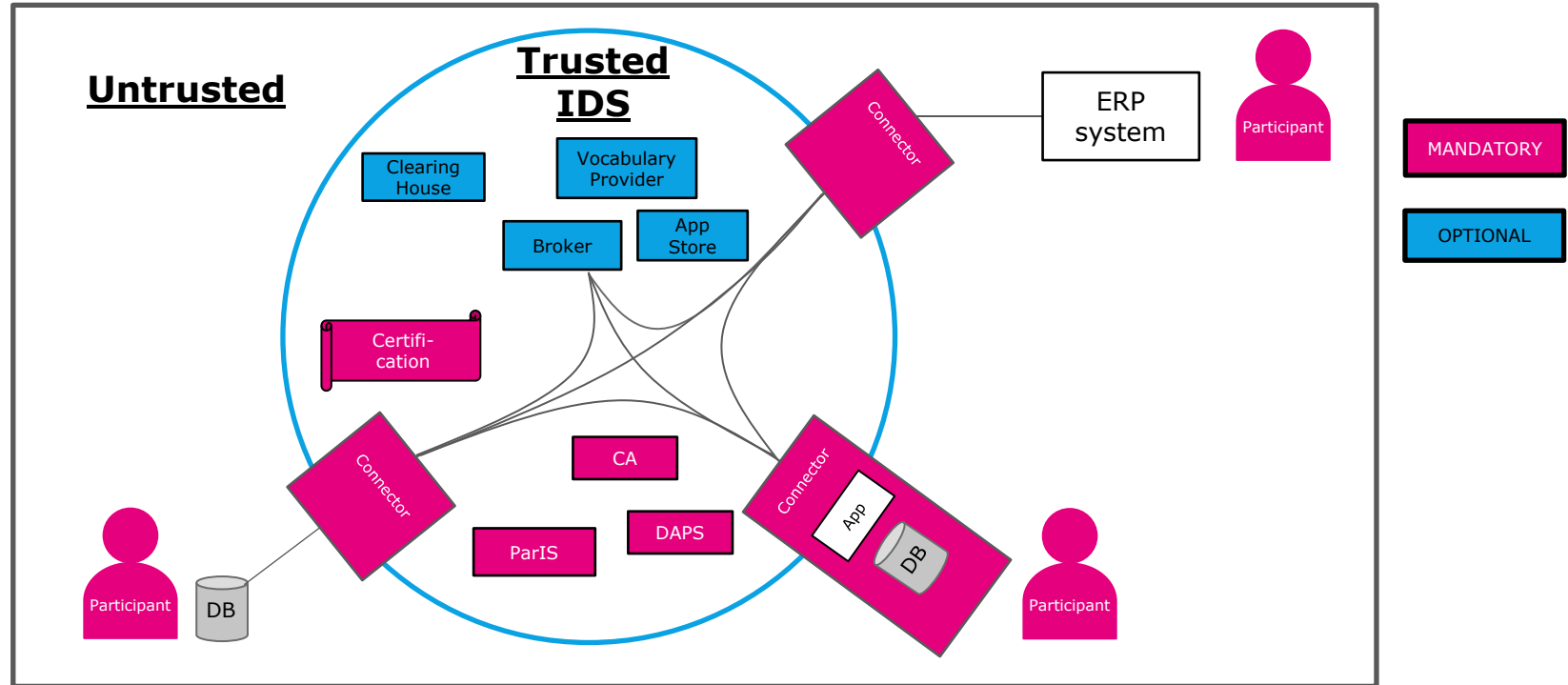


I Agree ☐

**#datasovereignty**



# REQUIRED COMPONENTS FOR THE IDS ECOSYSTEM





# ***BUILDING THE BASECAMP***

- CA
- DAPS
- ParIS
- Connectors
- Certification



## Launching Coalition

INTERNATIONAL DATA  
SPACES ASSOCIATION



Atos



TNO  
innovation  
for life



orbiter



UNITY



tecnalia



INNOPAY



Cybus



msg

SICK  
Sensor Intelligence.



# #IDSgolive

> 30 Companies  
> 20 Use Cases  
1 Standard

work stream #1

Creating Business  
Cases

work stream #2

Building Solutions

work stream #3

Writing Rule Book

## Vision & Mission

### Vision

*IDS Technology as a standard for  
sovereign and trustworthy data  
exchange across borders*

### Mission

*Having market-ready IDS  
Solutions up & running until  
November 2020*



# TOGETHER WE MAKE THE USE CASES GO LIVE

INTERNATIONAL DATA  
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Launching Coalition

orbiter

IoT Smart Data  
Management

Atos

ATOS  
Germany UC

Atos

MASAI

VIT

Vastuu

INTELLIGENT

Traffic  
Telematics  
Solution

FIWARE UNITY

Smart  
parking

SICK  
Sensor Intelligence.

Logistics Use  
Case

ENGINEERING

IDS-GoLive

KNORR-BREMSE

Rail Data  
Space

T..

Data Exchange  
& Marketplace  
(Data  
Intelligence  
Hub)

T..

Data  
Interoperability  
& Sovereignty in  
Mobility

EDGE  
CLOUD

Smart service  
data space

EDGE  
CLOUD

Smart supply  
data space

VW thyssenkrupp

BKM Use Case

Cybus

IoT Gateway

nicos AG

GAIAboX

TNO innovation  
for life

Smart  
Connected  
Supply Network

DATA  
AHEAD  
ANALYTICS

Emission  
trading

SQS

IDS Evaluation  
Facility

tecnalia

Manufacturing  
Marketplace

tecnalia

Energy Data  
Space

Mission Support Team

A - Team

msg

Atos

T..

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Fraunhofer

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# AGENDA



<u>Time</u>	<u>Topic</u>	<u>Content</u>	<u>Presenter</u>
10:00 – 10:05	Welcome and Introduction	What is the LC? What happened until now?	Christoph Mertens - IDSA
10:05 – 10:15	Essentials for IDS and interweaving with GAIA-X	From IDS to GAIA-X: Smart Connected Supply Chain (SCSN) and Smart Factory	Mike de Roode, Rutger van der Male - TNO
10:15 – 10:25		IDS Evaluation Facility - How to prepare for certification and how Integration Camps can help	Olatz Mediavilla – SQS
10:25 – 10:35		DAPS + ParIS + GAIABOX as Connector	Jörg Langkau – Nicos AG
10:35 – 10:45	State of Play: Rule Book & IDS-G	What is already there? Who is active? What can it already be used for? What happens next? IDS-G	Sebastian Steinbuss – IDSA
10:45 – 10:55	Adoption Pioneers: Use Cases	Product: Data Intelligence Hub (DIH)	Karsten Schweichhart – Deutsche Telekom AG
10:55 – 11:05		IDS_ready Connector by GEC	Bernd Fondermann – German Edge Cloud
11:05 – 11:15	<i>Coffee Break</i>	<i>Let's have some coffee!</i>	





# AGENDA



Time	Topic	Content	Presenter
11:15 – 11:25	Adoption Pioneers: Use Cases	IoT Data Management - SCOPE: GDPR compliant E-Recruiting	Dennis Neumann – SCOPE
11:25 – 11:35		SICK Logistics Use Case	Alexander Aberle – SICK AG
11:35 – 11:45	Adoption Pioneers: Digital Identities	Certification Authority for X.509 certificates	Klaus Ottradovetz – ATOS
11:45 – 11:55	Adoption Pioneers: Community	The IDSA Mobility Community is being formed right now	Chris Langdon – Deutsche Telekom
11:55 – 12:05	Operationalizing IDS	IDS Support Organization – “How can we help you?”	Lars Nagel – IDSA
12:05 – 12:15	Operationalizing IDS	TRUZZT – An organization for data sovereignty	Michael Tworek – TRUZZT
12:15 – 12:25	Outlook	What is going to happen next?	Christoph Mertens – IDSA
12:25 – 12:30	Q&A	Any Questions?	ALL







***WHAT WE HAVE  
ACHIEVED!***







INTERNATIONAL DATA  
SPACES ASSOCIATION

IDS LAUNCHING COALITION

*Make IDS go live!*

*#IDSgoLive*



# Data sharing in the manufacturing industry

The Smart Connected Supplier Network

IDSA Launching Coalition Fest June 29th 2020.



# CONTACT INFO

## Smart Connected Supplier Network

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Scientist Innovator Smart Industry, TNO

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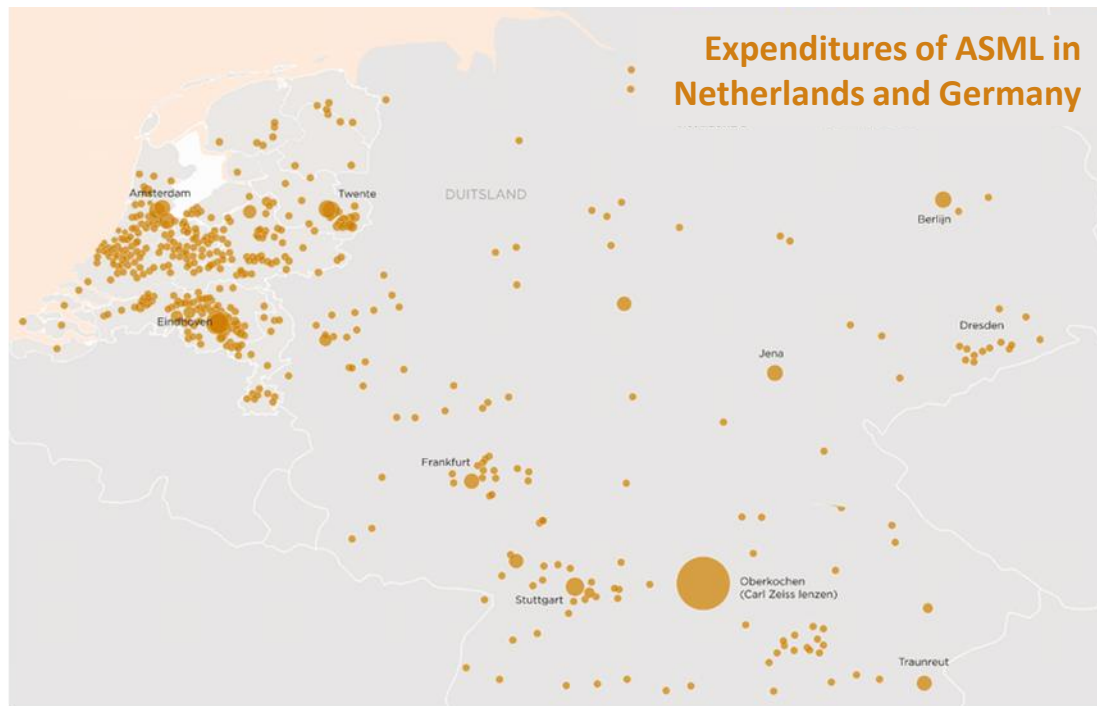
+31(0)6 3939 8464





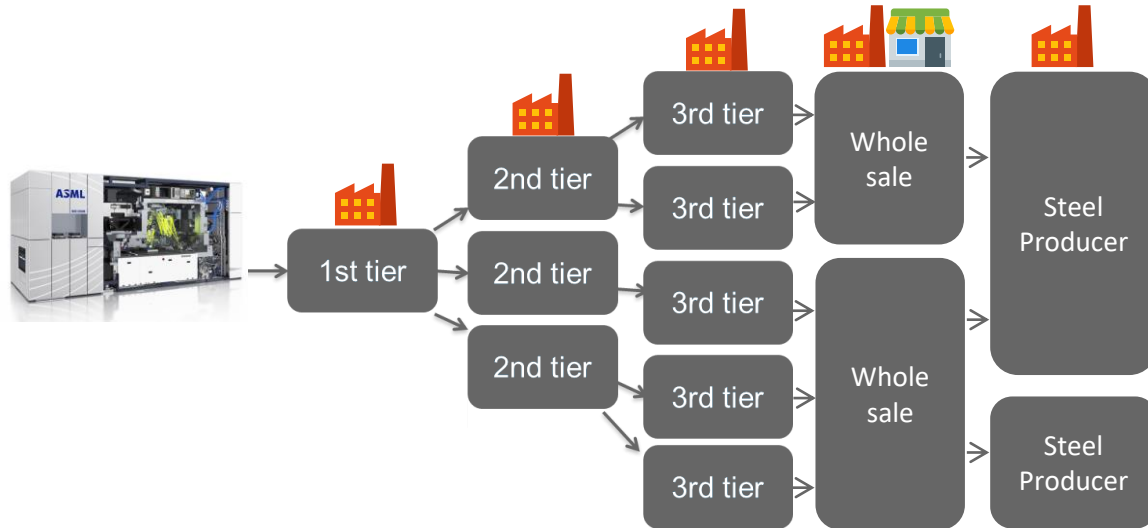
# DUTCH SMART INDUSTRY

World Champion in low volume, high mix, high complexity manufacturing





## Data sharing in supply chains



- Orders
- TPD
- Quotations
- Dispatch Advice
- What-If?

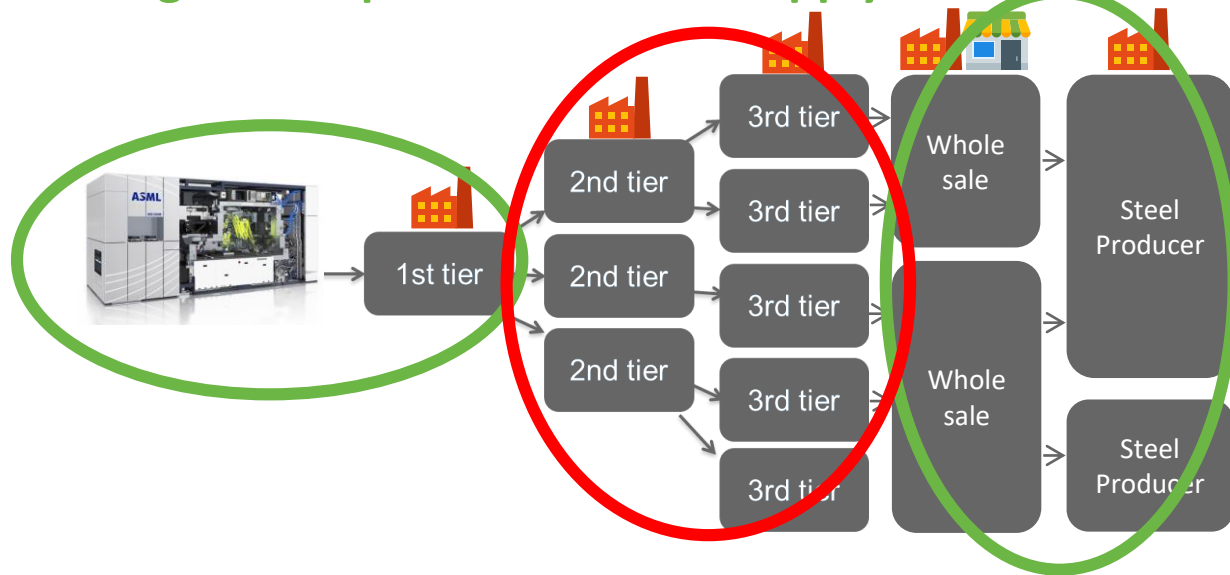


- Quotations
- Measurement data
- Steel certificates
- Capacities
- Progress



# SUPPLY CHAIN COLLABORATION

Data exchange: sub-optimal middle of supply chains



Manual input in  
systems and portals



Administrative  
burden



Error-prone



Sub-optimal  
supply chain



# WHAT IS SCSN?

## How do we accomplish our goal?

SCSN is a communication standard for sharing information in the supply chain, enabling the manufacturing industry to share data easier, safer, and more reliable.

- **One common language** for data exchange: orders, forecast, TPD's, BoM, drawings, invoices, logistical information, catalogues, and measurement data.
- Leveraging existing standards, extendable for specific market sectors.
- Seamless **technical agreements** between Service Providers to ensure the promise of 'Connecting Once – Communicate with everyone'



# How: technological approach

## One common language



Bill Of Materials



TPD Package



Invoicing



Core



Logistics



Ordering



Forecast



What if

Order message

Element XML Exam

Address

Example 1

```
1. <?xml version="1.0" encoding="UTF-8" ?>
  <xsi:schemaLocation xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:scsn="http://docs.oasis-open.org/ubl/v1017/UBL-SCSN-1.0.xsd"
    xmlns:cbc="http://www.w3.org/2007/05/ublxsd:CommonAggregate"
    xmlns:cac="http://www.w3.org/2007/05/ublxsd:CommonAggregate" />
  <scsn:Address type="scsn:AddressType" />
  <cbc:versionID>2.1</cbc:versionID>
  <cbc:documentReference>16-10-06</cbc:documentReference>
  <cbc:contractID>16-10-06</cbc:contractID>
  <cbc:contractType>16-10-06</cbc:contractType>
  </scsn:Address>
```

Address type: scsn:AddressType

Definition  
Structured information that allows the unambiguous determination of an object for purposes of identification and location (ISO 19160-1:2015)

Path  
Address

XML mapping  
cac:Address

Data type  
owl:Class

Sub elements

Smart Connected Supplier Network uses an open online management environment where developers can access the information models used to build the SCSN connection.

Initial focus is on the **purchase-to-pay** process information of complex supply chains.

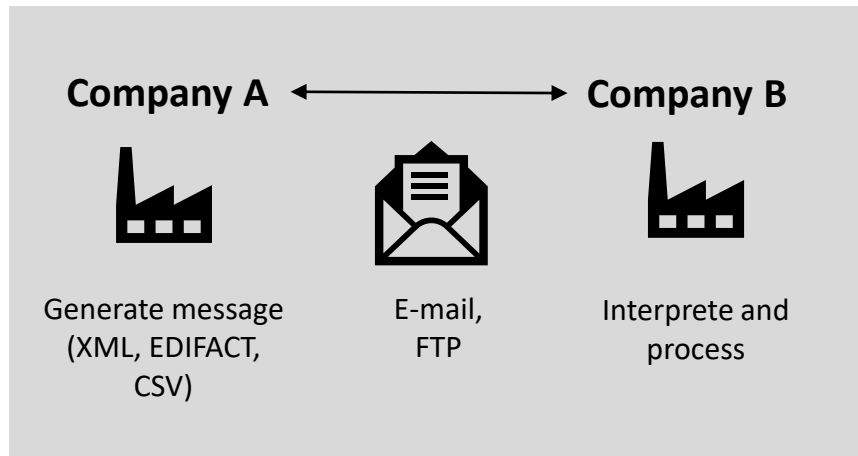
SCSN is a communication standard based on the **SCSN language** modelled via an underlying **ontology**. Mappings to **Universal Business Language (UBL)** and other technical formats.

<https://smartconnected.semantic-treehouse.nl/#/Standards>

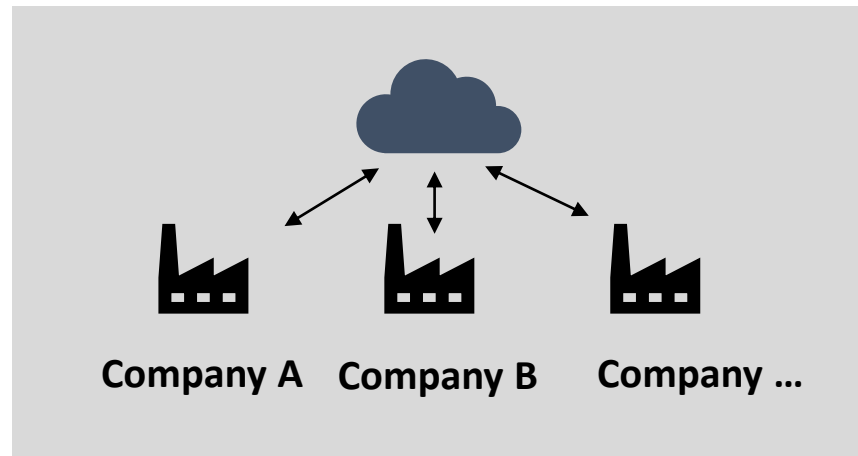


# What: Traditional approach of data sharing

## EDI or Central Platform



! Each connection is custom-made and is thus costly. Therefore, not scalable.



! Dependency on a single Service Provider who can have access to all data transactions.



# How: roles in the SCSN network



## Service Providers:

- Digital platforms, interconnected using IDS
- Independent 'address book' for routing communication
- Several providers. Choose the most suitable for your business



## Manufacturing companies:

- One-time integration with own ERP system
- Registration in the SCSN address book



## ERP systems:

- A manufacturing company can choose their preferred ERP system.





# OPEN COMMUNITY, OPEN STANDARD

Manufacturing companies, Service Providers, Knowledge Institutes



Approx. 10 Service Providers



Approx. 200 manufacturing companies,  
growing to 2000+ the coming years





# SCSN DEVELOPMENT TIMELINE

	2020	2021	2022	
<b>Organisation</b>	Transition from project to SCSN Foundation.	NL: Strategic partnerships with branche organisations. EU: Strategic partnerships to accelerate growth.		
<b>Services</b>	Comprehensive SCSN message set for manufacturing industry.	EU: Develop and integrate additional (AI) products and services for supply chain optimisation, condition based maintenance, etc.		
<b>Infrastructure</b>	Fully operational IDS infrastructure for Service Providers.	EU: Extend trusted network with advance security features e.g. usage control and ensuring interoperability with other data spaces.		
<b>Connections</b>	Growth to 400 connected manufacturing companies.	NL: 1.000 connections EU: 250 connections	NL: 2.000 connections EU: 1.000 connections	
<b>Service providers</b>	Growth to 10 approved SCSN Service Providers.	NL: 15 Service Providers EU: 5 Service Providers	NL: 20 Service Providers EU: 20 Service Providers	





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[www.smart-connected.nl](http://www.smart-connected.nl)





# Evaluation Facility

“Independent validation of core components for IDSA certification.”

&

# Integration Test Camp

“Open and remotely accessible infrastructure to test interoperability in a production like scenario”



INTERNATIONAL DATA  
SPACES ASSOCIATION





An abstract graphic on the left side of the slide, consisting of a dense network of white dots connected by thin white lines, resembling a molecular structure or a complex data network, set against a dark blue background.

# Evaluation Facility

“Independent validation of core components for certification.”



INTERNATIONAL DATA  
SPACES ASSOCIATION





# Evaluation Facility for Core Components

## The process

1. **Preparatory phase – (Developer)**
  - Select the Security Profile
  - Perform a self-assessment
  - Prepare the necessary documentation
2. Application Form (Developer)
3. Evaluation (SQS - Evaluation Facility)
  - Activities
  - Error handling
  - Evaluation report
4. Re-certification (IDSA – SQS - Evaluation Facility)



# Evaluation Facility for Core Components

## Preparatory phase

### 1. Define the security level for the component

[IDSA\_Whitepaper\_Certification: <https://industrialdataspace.jiveon.com/docs/DOC-2212>]

- Base

Includes basic security requirements: limited isolation of software components, secure communication including encryption and integrity protection, mutual authentication between components, as well as basic access control and logging. However, neither the protection of security related data (key material, certificates) nor trust verification are required. Persistent data is not encrypted and integrity protection for containers is not provided. This security profile is therefore meant for communication inside of a single security domain.

- Trust

This profile includes strict isolation of software components, secure storage of cryptographic keys in an isolated environment, secure communication including encryption, authentication and integrity protection, access and resource control, usage control and trusted update mechanisms. All data stored on persistent media or transmitted via networks must be encrypted.

- Trust +

This profile requires hardware-based trust anchors (in the form of a TPM or a hardware-backed isolation environment) and supports remote integrity verification (i.e., remote attestation). All key material is stored in dedicated hardware isolated areas.



# Evaluation Facility for Core Components

## Preparatory phase

### 2. Self-assessment following a checklist based on evaluation criteria.

CertificationCriteria\_Components v2.0.1: <https://industrialdataspace.jiveon.com/docs/DOC-3041>

CertificationCriteria\_Components v2.1.0 including Broker: <https://industrialdataspace.jiveon.com/docs/DOC-2811>

UC: Use Control	Requirement Description	Validation activity	Documented	Implemented	Evidence
CR 2.1 – Authorization enforcement	The component shall provide an authorization enforcement mechanism for all identified and authenticated human users based on their assigned responsibilities.	<ul style="list-style-type: none"><li>• Verify in the user documentation that the component provides a mechanism to assign responsibilities for all identified and authenticated human users, either directly or by integration into a system.</li><li>• Review the user documentation and check if the authorization enforcement mechanism is role-based. If it is role-based, verify in the user documentation if the role's responsibilities are static or may be changed by an administration account.</li></ul> {...}	No	Yes	
CR 2.2 – Wireless use control	If a component supports usage through wireless interfaces it shall provide the capability to integrate into the system that supports usage authorization, monitoring and restrictions according to commonly accepted industry practices.	<p>If the component supports usage through wireless interfaces</p> <ul style="list-style-type: none"><li>• Verify with user documentation that the component can integrate into a system to authorize usage, monitor, and enforce usage restrictions for wireless connectivity to the component per commonly accepted security practices.</li></ul> {...}	Yes	No	



# Evaluation Facility for Core Components

## Preparatory phase

### 3. Prepare the necessary documentation

- Operational Guidelines: Installation; User/operational guidelines
- Life-cycle support documentation: Configuration Management plan; delivery procedures and error handling
- Development Documents: Requirements and Design Documentation
- Testing Documentation: Test Plan; Test and Coverage Report; Test Cases specification and Traceability Matrix



# Evaluation Facility for Core Components

## The process

1. Preparatory phase – (Developer)
  - Select the Security Profile
  - Perform a self-assessment
  - Prepare the necessary documentation
2. **Application Form** (Developer)
3. Evaluation (SQS - Evaluation Facility)
  - Activities
  - Error handling
  - Evaluation report
4. Re-certification (IDSA – SQS - Evaluation Facility)



# Evaluation Facility for Core Components

## Application Form

Contact email: [idsa\\_gaas@sqs.es](mailto:idsa_gaas@sqs.es)

Form: <https://www.sqs.es/q-idsa/>

### IDSa Certification Process Application form



Complete this application form to ask for an independent evaluation process at SQS.

#### Applicant Information

Organization name

Name of the responsible

Email address of the responsible

#### Component Information

Type of component

Security Level (Base, Trust, Trust+)

Development Status

#### Documentation required

For the evaluation, in addition to the component code, next documents are required:

- o **Operational Guidelines:** Installation; User/operational guidelines
- o **Life-cycle support documentation:** Configuration Management plan; delivery procedures and error handling
- o **Development Documents:** Requirements and Design Documentation
- o **Testing Documentation:** Test Plan; Test and Coverage Report; Test Cases specification and Traceability Matrix

Responsible signature

Date





# Evaluation Facility for Core Components

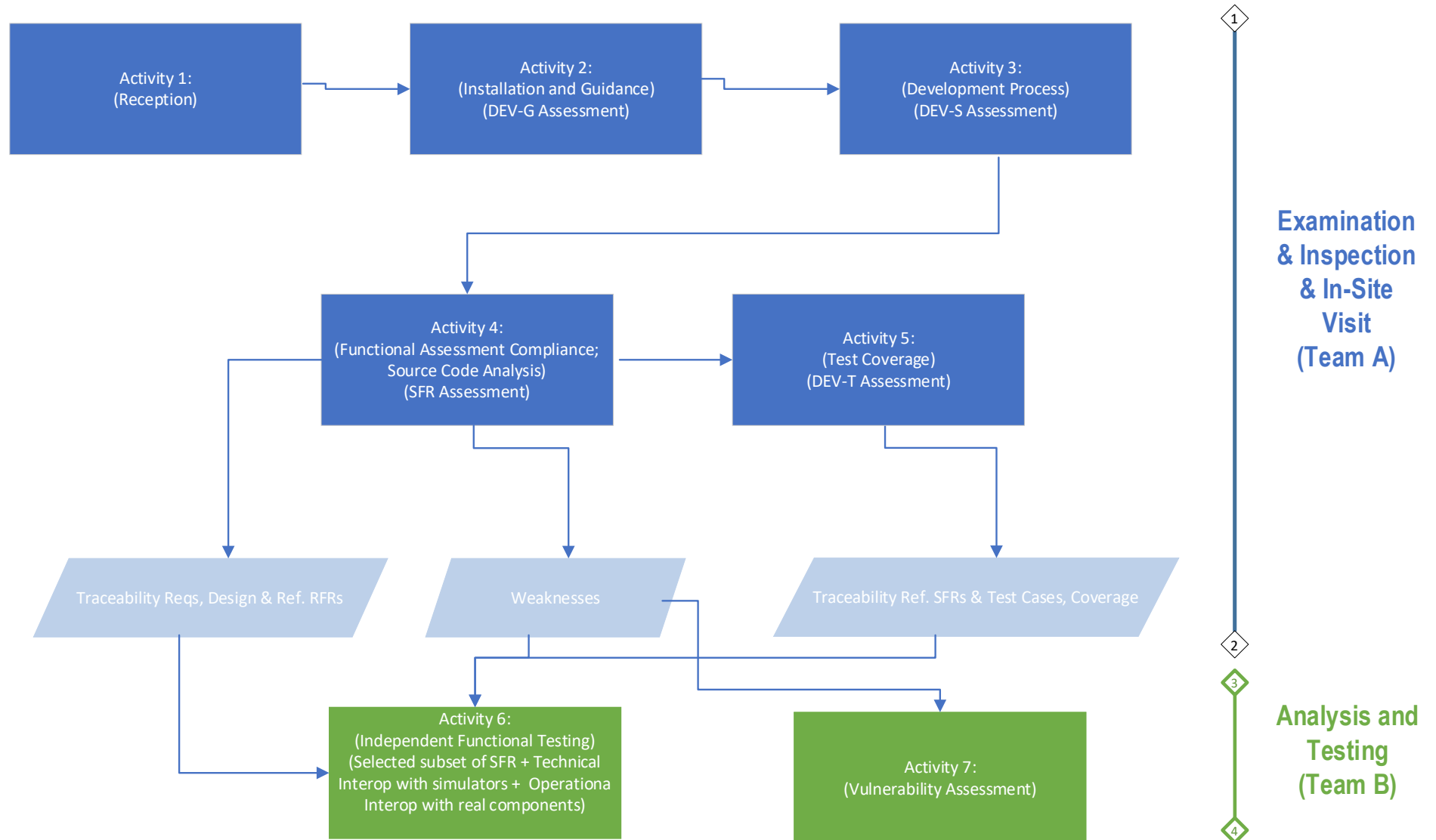
## The process

1. Preparatory phase – (Developer)
  - Select the Security Profile
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  - Prepare the necessary documentation
2. Application Form (Developer)
3. **Evaluation** (SQS - Evaluation Facility)
  - Activities
  - Error handling
  - Evaluation report
4. Re-certification (IDSA – SQS - Evaluation Facility)



# Evaluation Facility for Core Components

## Evaluation - Activities





# Evaluation Facility for Core Components

## Evaluation – Activities

- Preliminary duration of Preparation & Validation Process

	W1	W2	W3	W4	W5
Activity 1					
Activity 2					
Activity 3					
Activity 4					
Activity 5					
Activity 6					
Activity 7					



# Evaluation Facility for Core Components

## Evaluation – Error Handling

- Evaluation Team will report errors in the moment they find them (using JIRA)
- The developer will have the chance to provide justifications and/or clarifications, if appropriate.

## Evaluation – Evaluation Report

- As result of the evaluation process an individual evaluation report will be generated
- It will be used by the certification body as evidence to issue, or not, an IDSA component certificate



# Evaluation Facility for Core Components

## The process

1. Preparatory phase – (Developer)
  - Select the Security Profile
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2. Application Form (Developer)
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  - Error handling
  - Evaluation report
4. **Re-certification** (IDSA – SQS - Evaluation Facility)



# Evaluation Facility for Core Components

## Evaluation – Re-certification [nonofficial information]

- If changes are made to the component

- Small changes

Evaluation facility verifies that the changes are not likely to cause violation of the certified requirements

- Large

Evaluation facility re-certifies the component, focusing on the changes made

- Time expiration: certification renewal after 2 -3 years



An abstract graphic on the left side of the slide, consisting of a dense network of white dots connected by thin white lines, forming a complex, interconnected web-like structure against a dark blue background.

# Integration Test Camp

“Open and remotely accessible  
infrastructure to test interoperability  
in a production like scenario”



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# Integration Test Camp

Contact email: [idsa\\_qaas@sqs.es](mailto:idsa_qaas@sqs.es)

Form: <https://www.sqs.es/q-idsa-itc/>

INTERNATIONAL DATA  
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	Scope	Date	Infra
ITC 1	Handshake	8 <sup>th</sup> & 9 <sup>th</sup> & 10 <sup>th</sup> June	Connectors DAPS as a service Broker as a service
ITC 2	DAT management	13 <sup>th</sup> to 17 <sup>th</sup> July	Connectors DAPS Broker as a service
ITC 3	Broker interactions	Mid September	Connectors DAPS Broker
ITC 4	App Store interactions	Mid October	Connectors DAPS Broker App Store



# Integration Test Camp

## Actual architecture

Component	Communication Protocol	Status	Hosted At SQS	Hosted at a Third Party
Provider Connector	IDSCP	Running <input checked="" type="checkbox"/>	Yes <input checked="" type="checkbox"/>	
Consumer Connector	IDSCP	Running <input checked="" type="checkbox"/>	Yes <input checked="" type="checkbox"/>	
Provider Connector	HTTP	Running <input checked="" type="checkbox"/>	Yes <input checked="" type="checkbox"/>	
Consumer Connector	HTTP	Planned for ITC2	Planned for ITC2	
Broker	HTTP	Running <input checked="" type="checkbox"/>	Planned for ITC3	<input checked="" type="checkbox"/>
DAPS	HTTP	Running <input checked="" type="checkbox"/>	Planned for ITC2	<input checked="" type="checkbox"/>
App Store	HTTP / IDSCP	Planned for future ITC	Planned for future ITC	
Clearing House	HTTP / IDSCP	Planned for future ITC	Planned for future ITC	



# Integration Test Camp

## Participants

Participant	Component	Communication Protocol	Scenarios performed	Time Slot
FH ISST	Simple Connector	HTTP/REST	Broker – Connector handshake	8 <sup>th</sup>
FH IAIS	IDS Metadata Broker	HTTP Multipart		9.00-13.00
FIWARE	Base Connector	HTTP Multipart for administration HTTP-Headers solution for business	Handshake	8 <sup>th</sup> 15.00-17.00
CERTH	Trusted Connector	IDSCP	<ul style="list-style-type: none"><li>- Handshake</li><li>- Certificates management</li><li>- Connection failure scenario</li><li>- Connection to more than one connector</li></ul>	9 <sup>th</sup> 9.00-11.00
TNO	Trusted Connector	HTTPS / IDSCP	<ul style="list-style-type: none"><li>- Handshake</li><li>- DAT management</li></ul>	9 <sup>th</sup> 11.30-13.30
ENGINEERING	IDS Connector	HTTPS / IDSCP	Handshake	9 <sup>th</sup> 15.00-17.00



# Integration Test Camp

## Participants

Participant	Component	Communication Protocol	Scenarios performed	Time Slot
GEC	Oncite Trusted Supplier Connector	HTTPS	Handshake	10 <sup>th</sup> 9.00-11.00
UPM	Trusted Connector	IDSCP	<ul style="list-style-type: none"><li>- Handshake</li><li>- Certificates management</li><li>- Connection failure scenario</li><li>- Connection to more than one connector</li></ul>	10 <sup>th</sup> 11.30-13.30
ATLANTIS	Trusted Connector	IDSCP	<ul style="list-style-type: none"><li>- Handshake</li><li>- Certificates management</li><li>- Connection failure scenario</li><li>- Connection to more than one connector</li><li>- End to End with TWF</li></ul>	10 <sup>th</sup> 15.00-17.00



# Integration Test Camp

## Lessons Learned

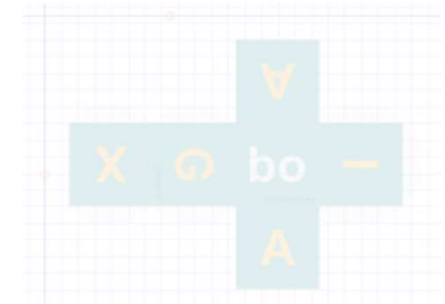
- Publish more information about the test camp in advance
  - How it will be managed, the scenarios considered, the Test Cases,...
  - Have publicly available APIs before the Test Camp
- Offer available machines in the lab environment
- Improve the lab environment
  - Develop more features to the existing connectors
  - Add new connectors
- Make groups of participants with similar necessities, so they can also try the interaction with each other.



# THANK YOU

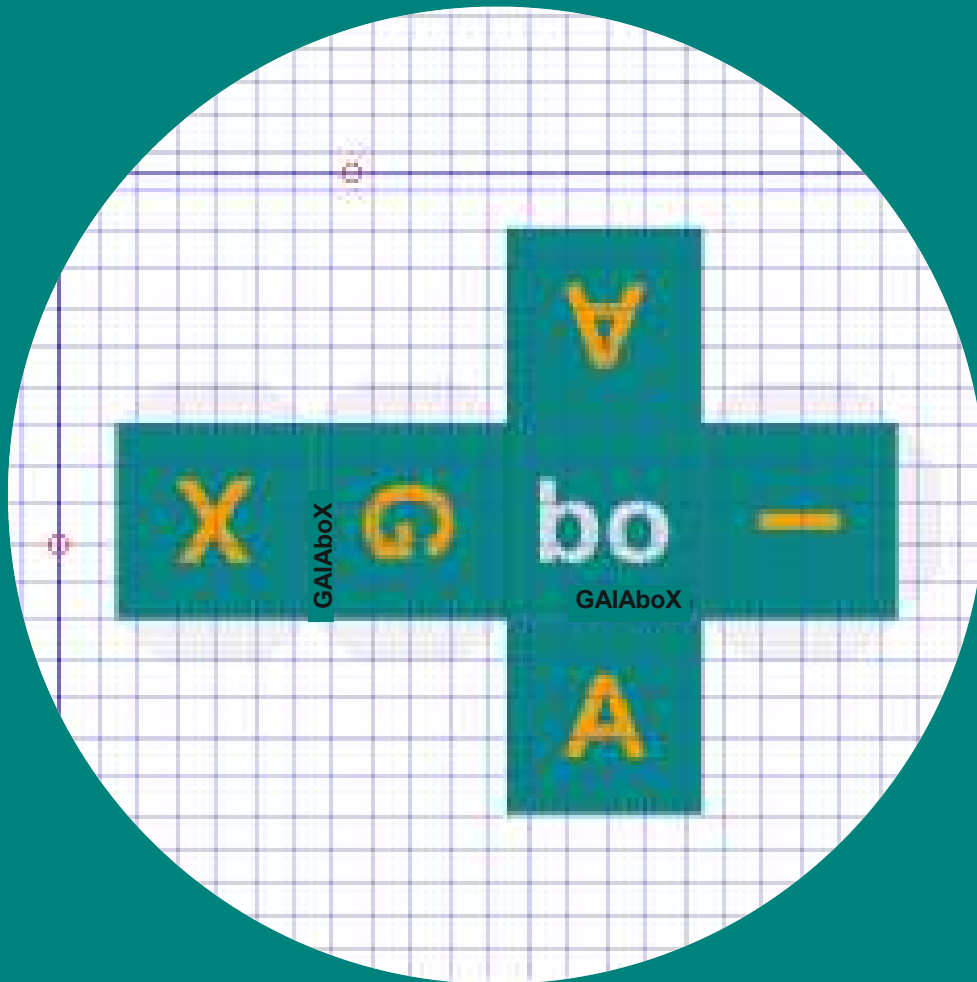
<https://www.sqs.es/q-idsa/>  
<https://www.sqs.es/q-idsa-itc/>  
<https://www.sqs.es/eventos/?lang=en>





The experts in secure, global data communications.





## IDS Launching Coalition Fest

IDS-G, DAPS, ParIS and

**GAIAbOX®**

Dipl.-Neuro.-Biol. Jörg Langkau

**IDS-LC Fest 2020:**

June 29, 2020

Basic Services for Digital Infrastructures



## Design, implementation and 24/7 operation of IT infrastructures



The experts in secure, global data communications.



## nicos *SmartWAN* Solution



  
Service  
Operation Center  
**SOC**

---

Cyber  
Defense Center  
**CDC**



### ACCESS

Managed Connectivity

Managed *SmartWAN*  
Backbone

Managed Cloud Access

### INFRASTRUCTURE

Managed SD-WAN

Managed Application-  
based WAN

Managed WAN  
Optimization

Managed Colocation

### SECURITY

Managed Firewall

Managed MailSec

Managed SIEM

### CLOUD & VIRTUALIZATION

Managed Virtual Private  
Cloud

Managed Edge  
Computing

Consulting • Design • Project Management



**IDS-G**

**DAPS**

**Dynamic Attributes Provisioning Service**

**ParIS**

**Participant Information Service**

**IDS-LDP**

**IDS Linked Data Platform**

**nicos' product name „GAIAbOX“**



## IDS-G

- technical specification
- „the truth“ for those who want to implement
- the main landing page for techies
- it fits as a link to IDS Rule Book
- will be maintained by technical SteerCo in future

## is NOT

a copy of Reference Architecture Model  
a copy of Information Model

## will NOT

eliminate discussions in IDS-jive

- Communication Guide
- Handshake Dokument

## International Data Spaces Global (IDS-G)

# IDS\_G

### Specifications

- [IDS Information Model \(IDS-IM\)](#)
- [Certification Authority \(CA\)](#)
- [Dynamic Attribute Provisioning Service \(DAPS\)](#)
- [IDS Connector](#)
- [IDS Meta Data Broker \(IDS-MDB\)](#)
- [Participant Information System \(ParIS\)](#)
- [Clearing House](#)
- [IDS Technologies](#)
  - [Usage Control](#)
  - [IDS Communication Protocol \(IDSCP\)](#)



# Participant Information System (ParIS)



## **ParIS**

**all informations about the Participant of IDS-Eco-System**

**starting with Participant (in IDS-G) in collaboration with  
IDS Certification Body**

## **next step**

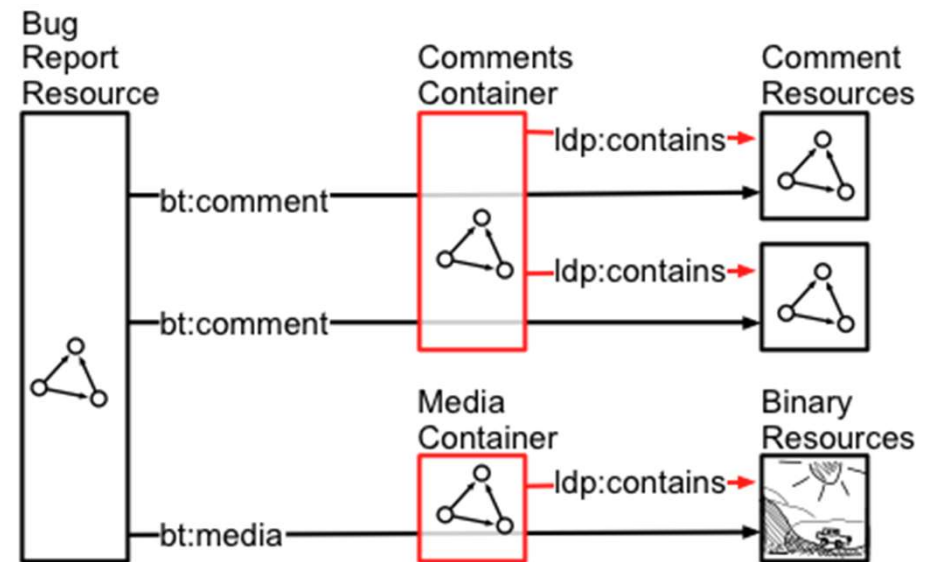
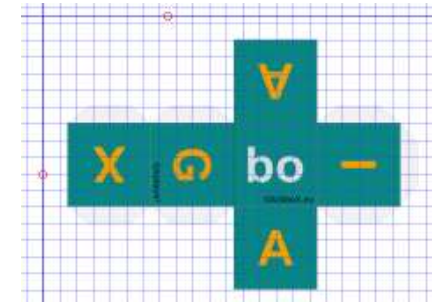
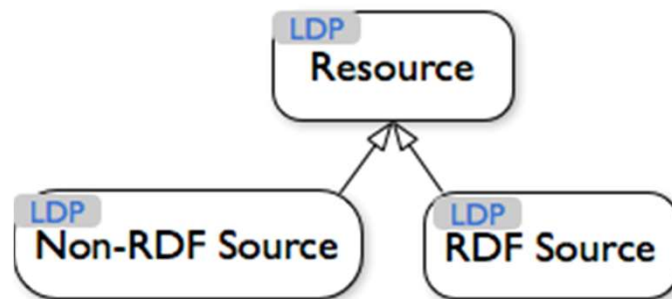
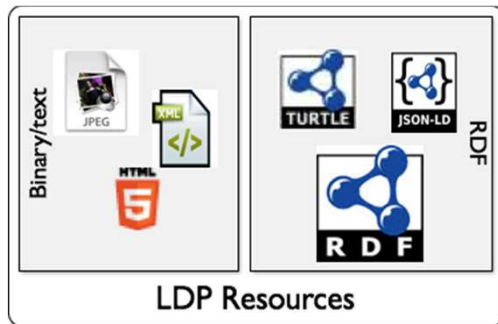
**documentation in IDS-G  
ParIS-DC (Developers Community)**



# Linked Data Platform done by GAIAbOX<sup>®</sup>



## Resources in Linked Data Platform



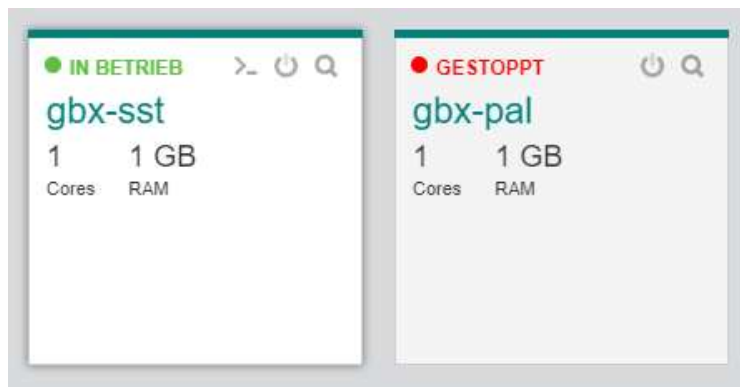
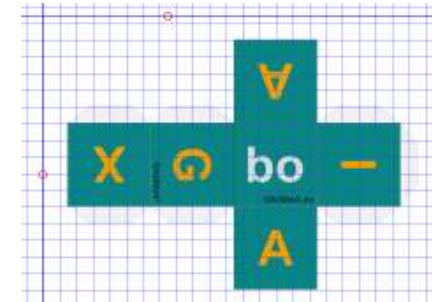


# GAIAbOX<sup>®</sup> ready for the cloud



**gbx-web-front-end:** browses own gbx-space and spaces of otherones gbx's

**gbx goes cloud:** German/EU, done by gridscale



## STATUS

VERBUNDEN

## STORAGENAME

gbx-pal-data

## GRÖSSE

1 GB

## STORAGE TYPE

Standard I/O

## VERWENDETES TEMPLATE

Ubuntu 18.04 LTS  
18.04 LTS (Bionic Beaver), no swap (10 GB)

## VERBUNDE SERVER

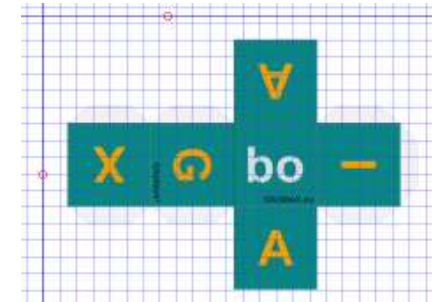
gbx-pal LUN: 0

## LOCATION

fra



- data pool, inventory
- file storage
- at nicos AG: manage all devices (like routers and firewalls)
- [Linked Data Platform Use Cases and Requirements](#) (W3C)
  - *Cloud Infrastructure Management*
  - *Maintaining Social Contact Information*
  - *Keeping Track of Personal and Business Relationships*
  - *System and Software Development Tool Integration*
  - *Library Linked Data*
  - *Municipality Operational Monitoring*
  - *Healthcare*
  - *Metadata Enrichment in Broadcasting*
  - *Aggregation and Mashups of Infrastructure Data*
  - *Data Catalogs*





## Future features:

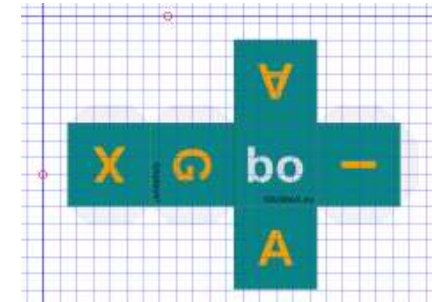
- provide a „Binary Operator Resource“ as **P**olicy **D**ecision **P**oint (PDP)
  - context ‚time‘ (yesterday **Before** today)
  - context ‚geometry‘ (point **Inside** polygon)
  - context ‚agent‘ (person, organization, IDS Participant) (connector **memberOf** group)
  - see also: <https://github.com/nicosResearchAndDevelopment/nrd-motic/blob/master/decide/operator/README.md>
- acting as **P**olicy **I**nformation **P**oint (PIP, especially for IDS scenarios as Connector Provider)
- **IDSCP** (**I**DS **C**ommunication **P**rotocol, used by IDS TrustedConnector, [provided](#) Fh AISEC)

**Subscriptions:** gRPC, MQTT and via IDSCP

**GitHub-Repository** <https://github.com/nicosResearchAndDevelopment/nrd-GAIAbOX>

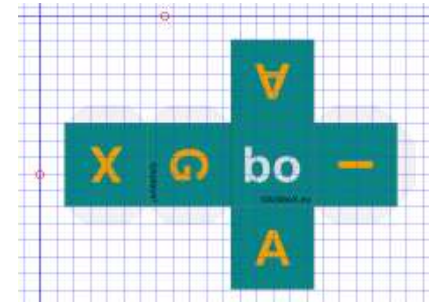
- technical specifications
- developers
- gbx-client as open source

**Online** <https://www.GAIAbOX.eu>





# GAIAbOX<sup>®</sup> do it yourself



Made by S. Steinbuss

<https://github.com/nicosResearchAndDevelopment/nrd-GAIAbOX/tree/master/DIY>



**IDS-G (draft):** <https://github.com/International-Data-Spaces-Association/IDS-G/tree/draft>

**IDS InformationModel:** <https://github.com/industrial-data-space/InformationModel>

**IDS TrustedConnector:** <https://github.com/industrial-data-space/trusted-connector>

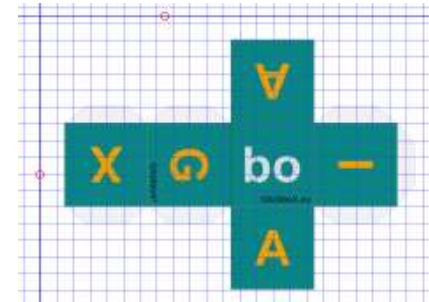
**motivic.decide:** <https://github.com/nicosResearchAndDevelopment/nrd-motivic/blob/master/decide/operator/README.md>

**Linked Data Platform 1.0:** <https://dvcs.w3.org/hg/ldpwg/raw-file/default/ldp.html#ldpr-resource>

**IDS-LDP:** <https://app.swaggerhub.com/apis/jlangkau/IDS-LDP/>

**LDP Use Cases and Requirements:** <https://www.w3.org/TR/ldp-ucr/>

**Web Access Control:** <https://github.com/solid/web-access-control-spec>



Members only (JIVE):

**The IDS Communication Guide - Working Version:**

<https://industrialdataspace.jiveon.com/docs/DOC-2524>

**The IDS Handshake:** <https://industrialdataspace.jiveon.com/docs/DOC-1817>

**LDP as IDS-Connector (IDS-LDP):** <https://industrialdataspace.jiveon.com/docs/DOC-2613>



**Resources hold in place.**





# IDSA RULE BOOK

## STATE OF PLAY

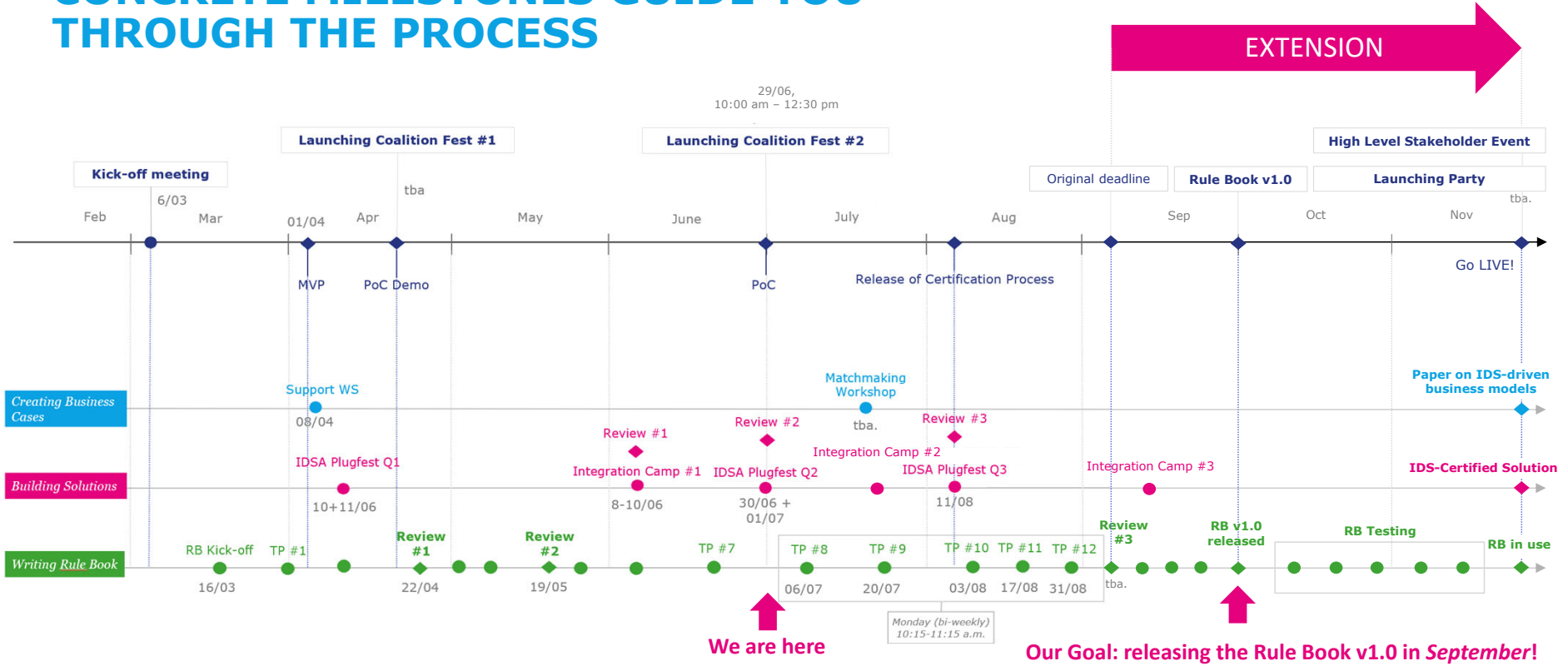
2020-06-29

Workstream 3  
as part of IDSA Launching Coalition

Welcome  
to the  
**IDSA**  
*Launching Coalition  
Fest*



































# CONCRETE MILESTONES GUIDE YOU THROUGH THE PROCESS





## ACHIEVEMENTS SO FAR (JUNE, 29TH)

Sub-Streams	Current State 2020-06-29	Planned 2020-04-30	Planned 2020-06-30	Planned 2020-09-30
Introduction				
Functional Agreements	 !			
Technical Agreements				
Operational Agreements (Governance)	 !			
Operational Agreements (Administration)				
Operational Agreements (Maintenance)				
Operational Agreements (Policies)				
Legal Agreements	 !			



# IDS-G

- Public available
- Represents the current public available version of IDS Specifications
- Provides a glossary
- Check:  
<https://github.com/International-Data-Spaces-Association/IDS-G/tree/master>



README.md

## International Data Spaces Global (IDS-G)

# IDS\_G

### Specifications

- [IDS Information Model \(IDS-IM\)](#)
- [Certification Authority \(CA\)](#)
- [Dynamic Attribute Provisioning Service \(DAPS\)](#)
- [IDS Connector](#)
- [IDS Meta Data Broker \(IDS-MDB\)](#)
- [Participant Information System \(ParIS\)](#)
- [Clearing House](#)
- [IDS Technologies](#)
  - [Usage Control](#)
  - [IDS Communication Protocol \(IDSCP\)](#)

### Additions

- [Relevant documents](#)
- [Repositories](#)
- [Glossary](#)
- [Shortcuts](#)
- [References](#)



## NEXT STEPS

### Action Items

☐ **Please provide feedbacks on the content of the Rule Book**

The content is available in [Jive](#) and in [Teams](#)

Feedbacks can be submitted to Sebastian and Giulia via:

- Jive
- E-mail
- Teams

### Events

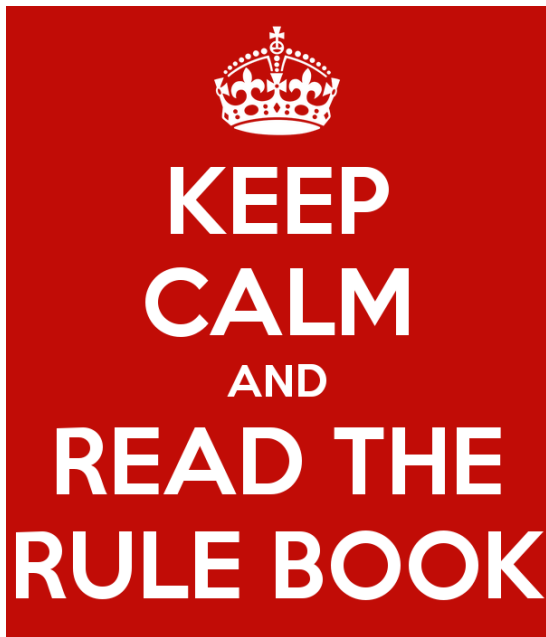
**Save the date**

- ☐ Contributors' Touchpoint #7 (June 29)
- ☐ Follow-up on Op. Agreements - Maintenance (July 3)
- ☐ Follow-up#4 on DAPS (tba)
- ☐ Workshop on Op. Agreements – Policies (July)

*If you have any doubt or request, please do not hesitate to contact Giulia via Teams or via email at [giulia.giussani@internationaldataspaces.org](mailto:giulia.giussani@internationaldataspaces.org)*



## HOW TO GET INVOLVED



#Join our Teams Channel

#Find the current draft of the Rule Book in the Teams Channel

#Participate in our biweekly Touchpoints



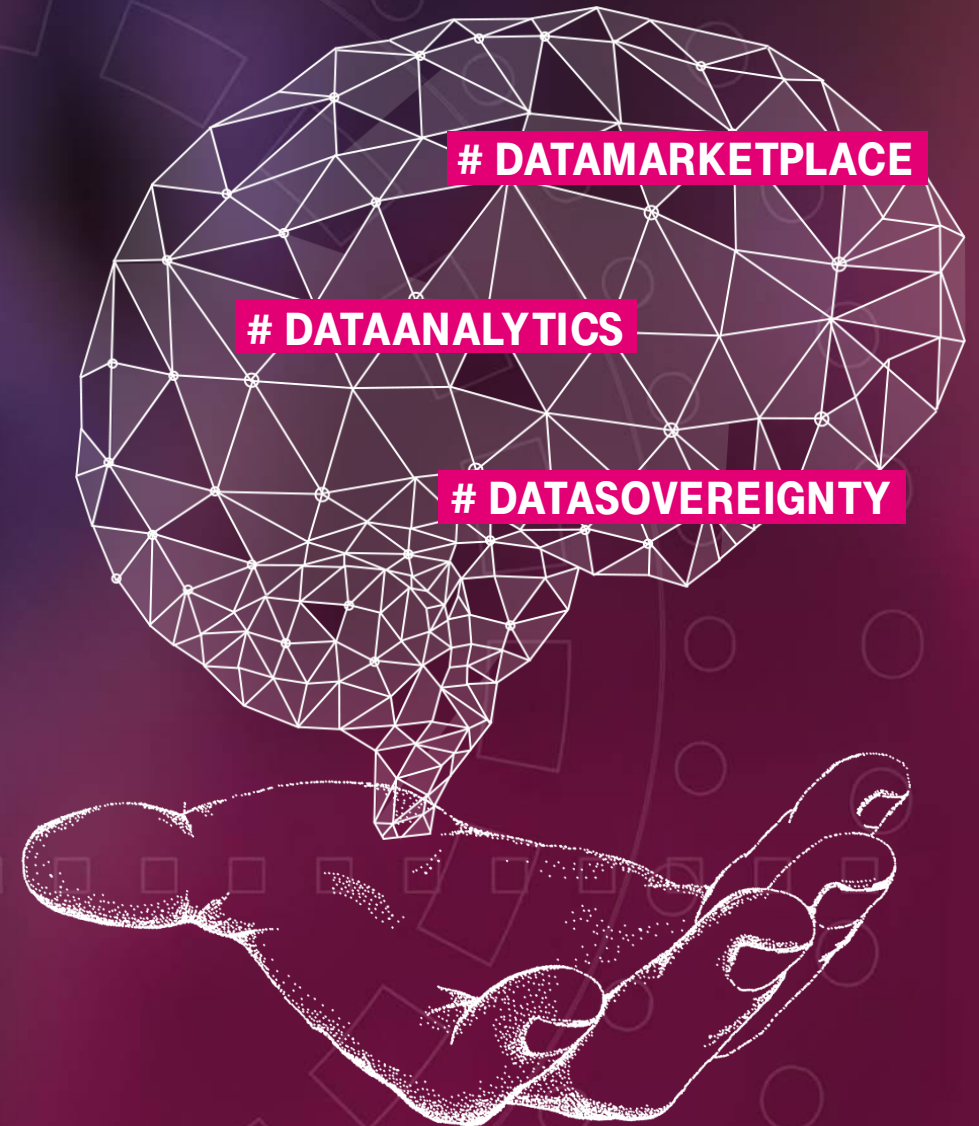
# TELEKOM DATA INTELLIGENCE HUB

Commercial Product  
with Data Sovereignty Services  
and 2 Launching Coalition usecases

Dr. Karsten Schweichhart



ERLEBEN, WAS VERBINDET.





Provider

# DATA INTELLIGENCE HUB

Consumer

Ecosystem for Data Exchange & Analytics Opportunities

Analytics



Workspaces



Data catalogue



Open Data



Closed Data



Data-driven  
business models

100 %  
RELIABILITY

Data will never be used  
or stored for own  
interests

simple and secure



## Trust

Secure, smooth data exchange  
based on standards



## Open

Neutrality for all participants,  
overcoming organizational silos



## Data sovereignty

Data owner retains control  
over data flow and use



ERLEBEN, WAS VERBINDET.

Data Intelligence Hub

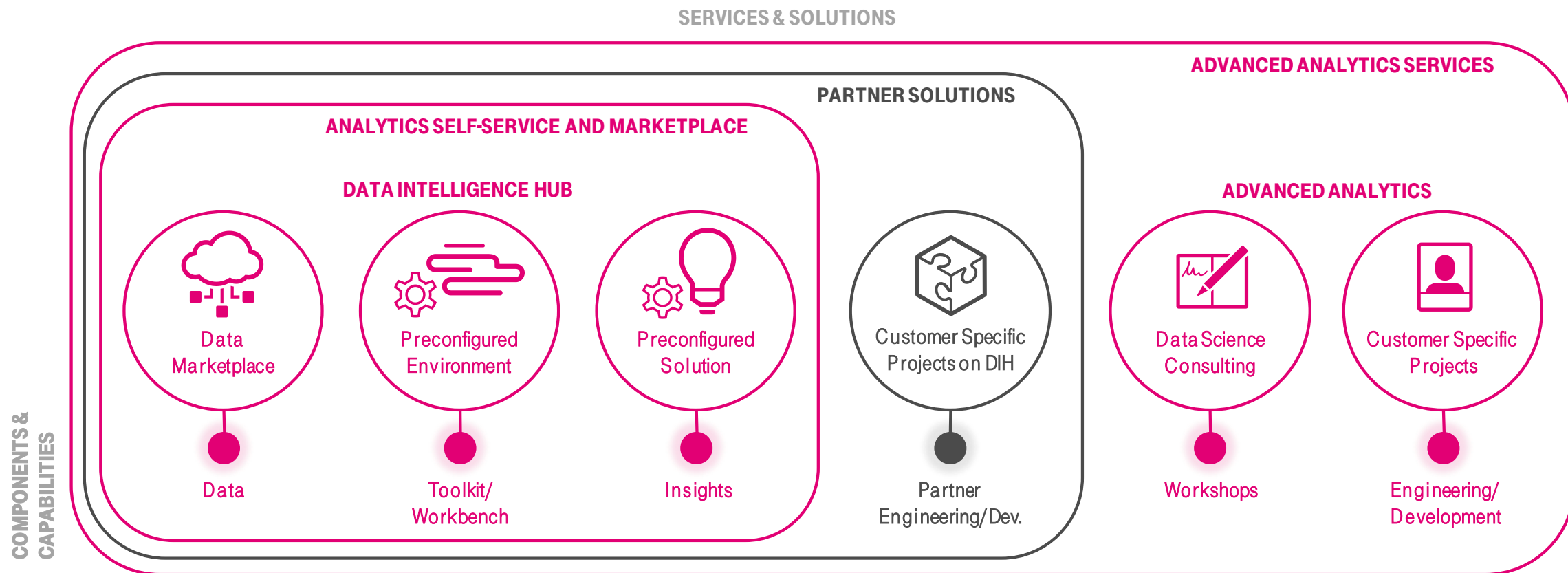
29.06.2020

2



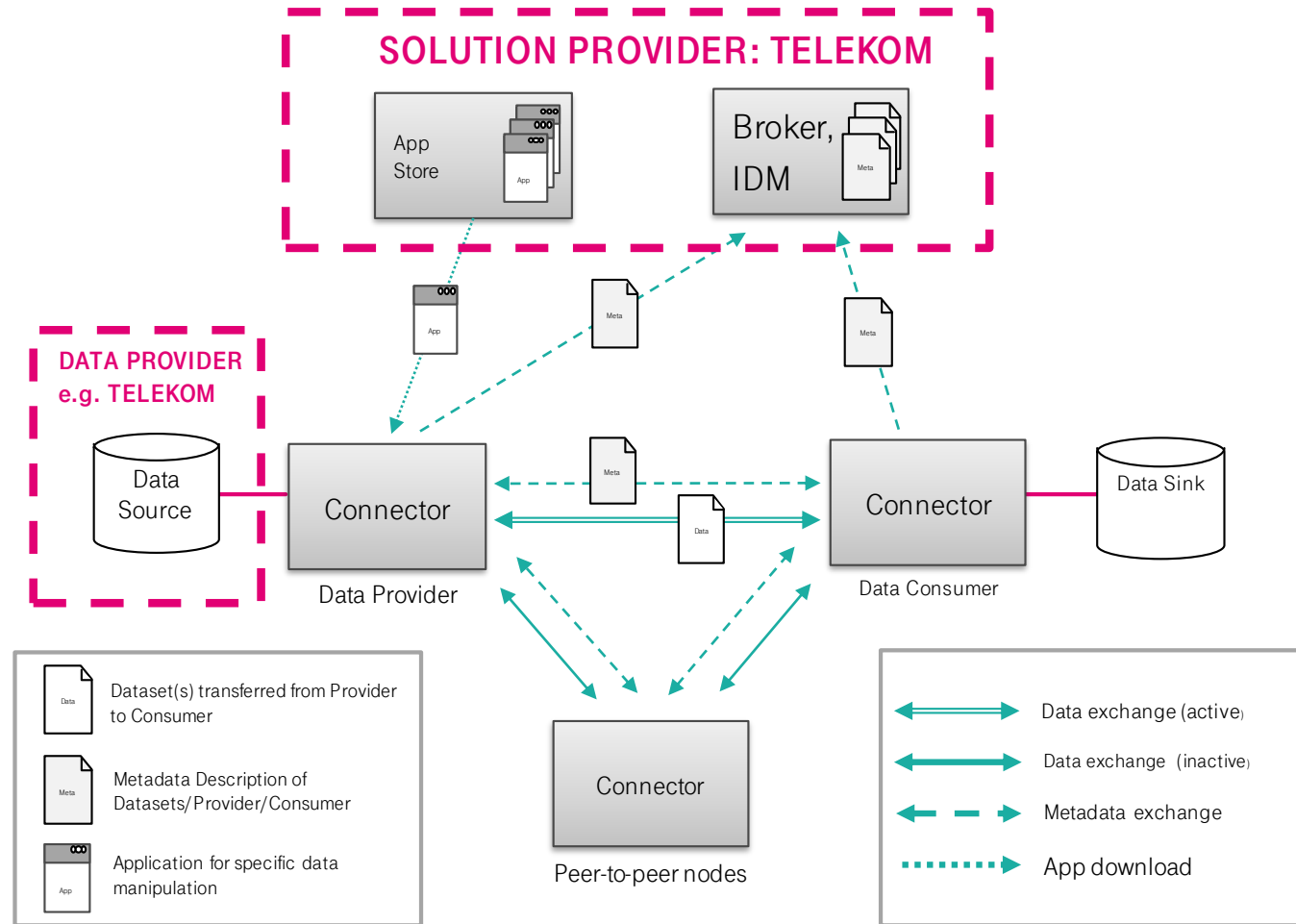
# BUSINESS MODEL

## DATA ANALYTICS OFFERINGS AND ECO-SYSTEM





# DIH BUILD ON IDSA: CONNECTOR, BROKER, IDM, ...





# EXPERIENCE DATA INTELLIGENCE HUB ON DIH.TELEKOM.NET



From Data to  
added value



## 3 KEY-TAKEAWAYS:

1. **DIH IS A PRODUCT**
2. **OFFERS DATA SOVEREIGNTY IN IT'S SERVICES**
3. **INCLUDES IDSA SERVICES: CONNECTOR, IDM, BROKER, ...**

[HTTPS://WWW.DIH.TELEKOM.NET](https://www.dih.telekom.net)



ERLEBEN, WAS VERBINDET.

## Contact?



**Dr. Karsten  
Schweichhart**

Business Development Executive



[schweichhart@telekom.de](mailto:schweichhart@telekom.de)



0228 181-95495



01712288232

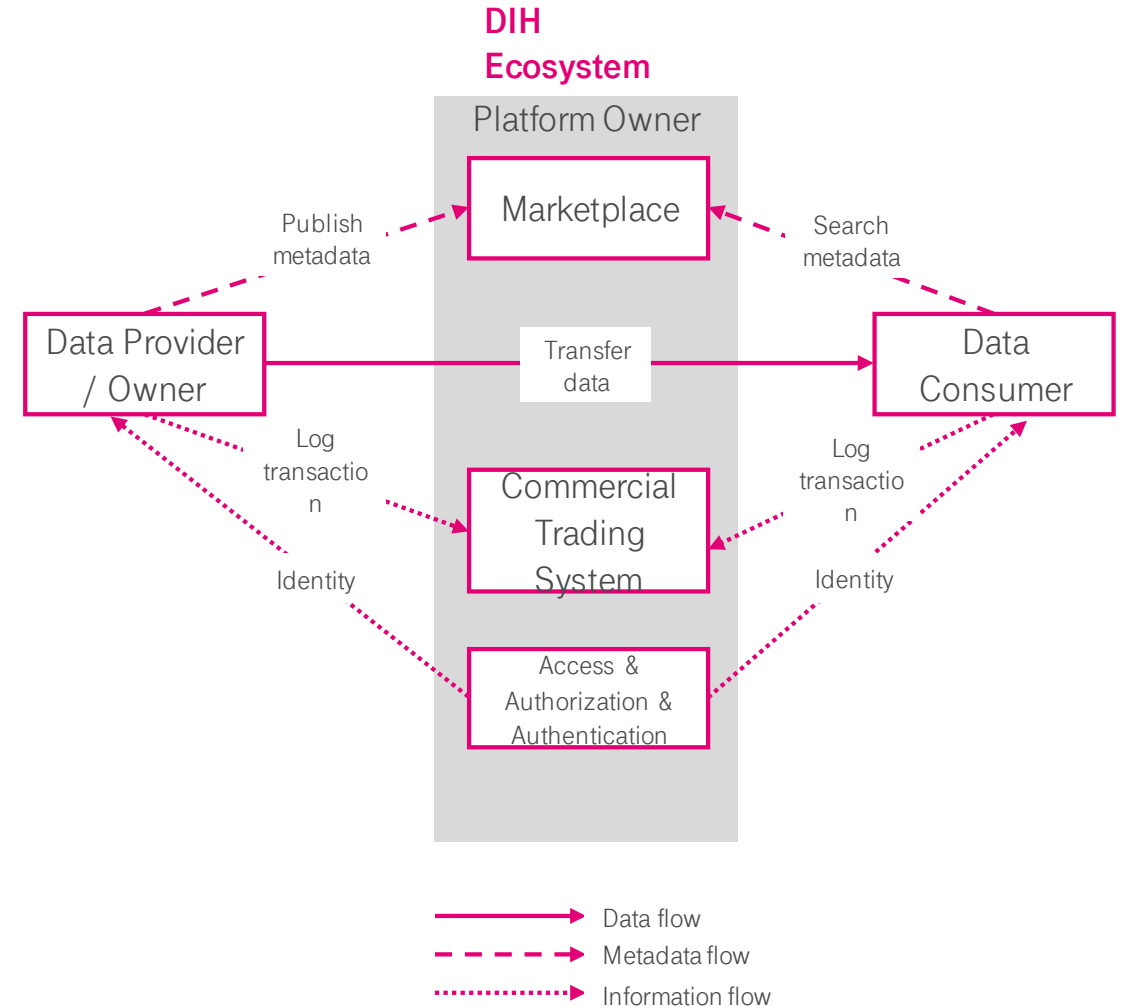
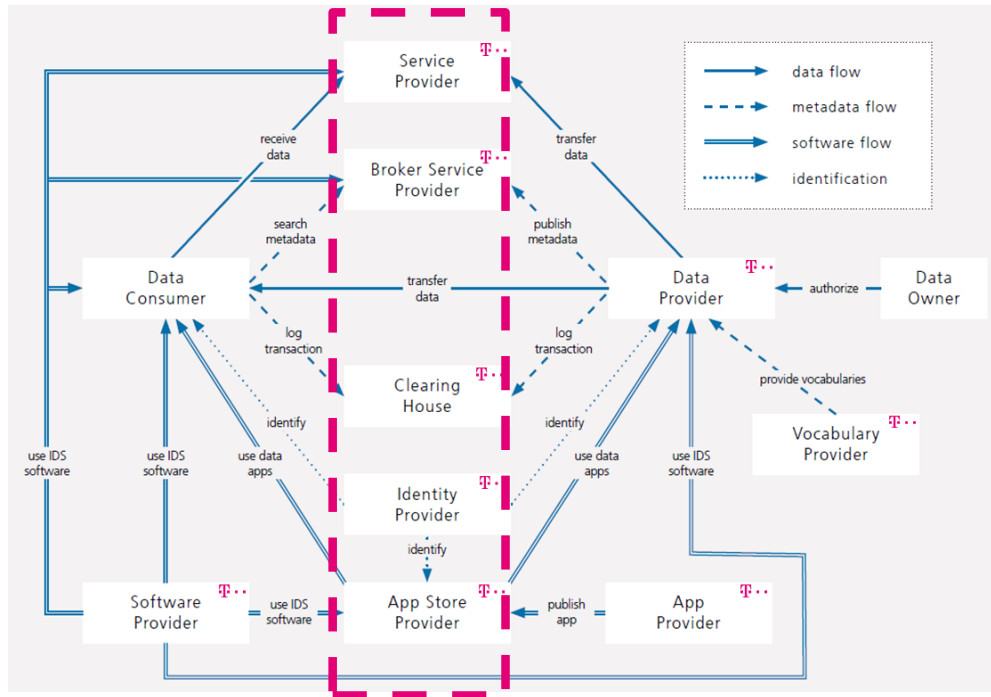
Deutsche Telekom

T-Systems, Product Unit IoT



# THERE ARE DISTINCT ROLES AND INTERACTIONS IN THE NEW DIH ECOSYSTEM

Reference architecture model for the Industrial Data Space (IDS) – 2017





# PARTNER, TOOLS AND APPLICATIONS

## Workspace

**cloudera**  
Data Science Workbench



**databricks**

**R Studio**



Demnächst auch



IBM Data Science Experience

**cloudera**  
Altus

## Processing, Machine Learning & Artificial Intelligence



**APACHE Spark** **elasticsearch** **dmlc XGBoost** ...

**TensorFlow** **R** **H<sub>2</sub>O** **julia**

**Scala** **python** **Grafana** ...

**TOP 100 LIBRARIES**  
PRECONFIGURED!  
EASY TO USE!

## Partner



**DETECON**

**cloudera**



ERLEBEN, WAS VERBINDET.

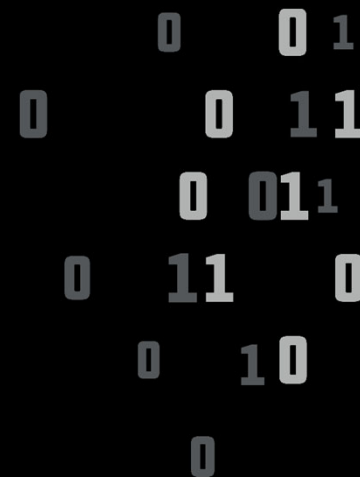
Data Intelligence Hub

29.06.2020



# ONCITE Launching Coalition

Monday, 29th June 2020





# Friedhelm Loh Group – eine starke Familie

Einführung in unser Familienunternehmen

**€ 2.6Bn**

Revenue

**80**

Countries

**12.000**

Employees



## Digital Leads

 **EDGE**  
CLOUD

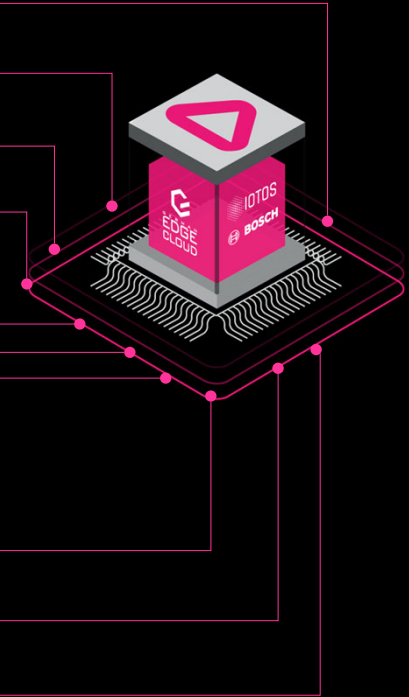
 **IOTOS**

 **iNNOVO**  
CLOUD



# PAC: The top 10 IT trends for 2020

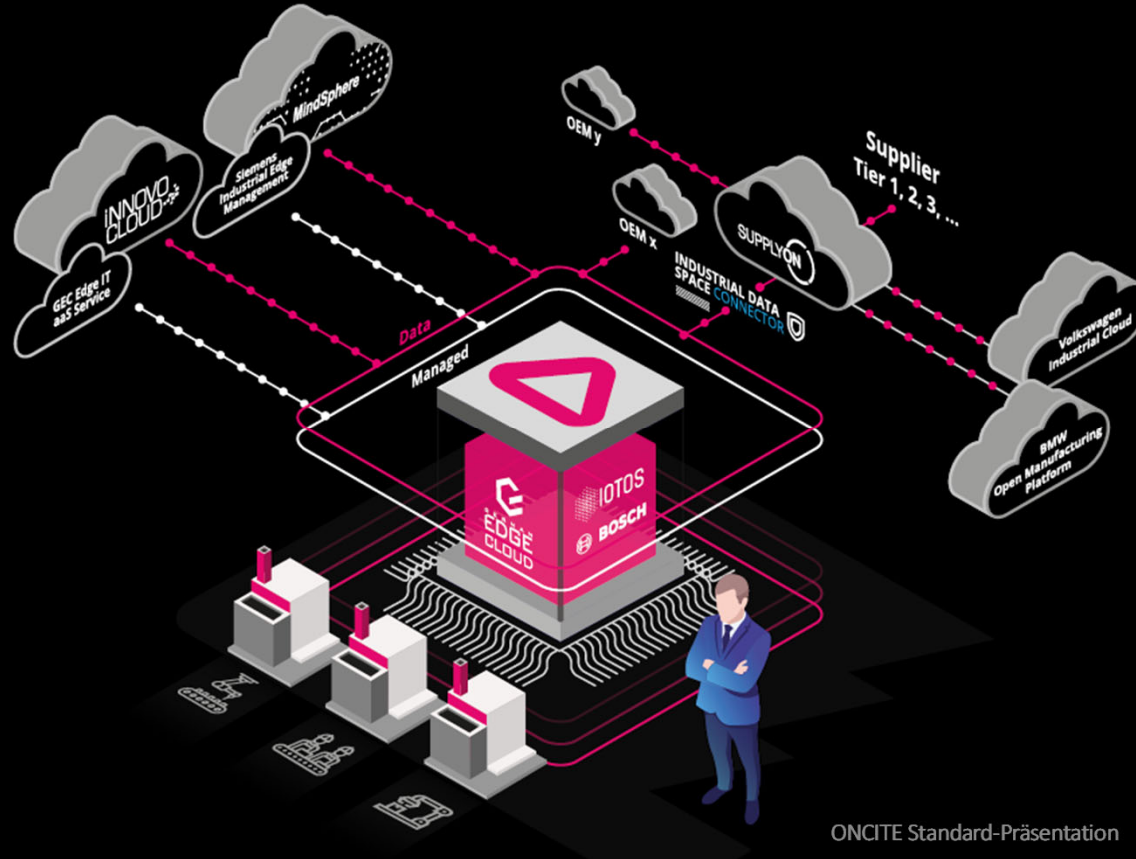
- ▶ Platform-based industrial value networks will spread
- ▶ Edge and 5G enable real-time IT locations
- ▶ IT/OT integration leads to OT data platforms
- ▶ Enterprise applications move into the public cloud
- ▶ Next-gen app platforms embrace digital innovations
- ▶ AI-empowered business applications
- ▶ RPA and automation on the edge of AI
- ▶ Cloud-based services revolutionize application development and deployment
- ▶ Managed security services accompany the digital change
- ▶ Agile and DevOps boost flexibility





# ONCITE im digitalen ECO-System

Industrial Edge-Cloud basiertes Rechenzentrum



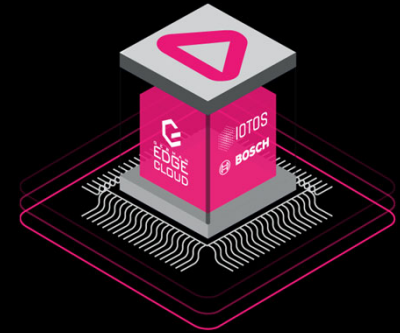


# ONCITE Industrial TSC – IDS Connector

## overview

### ▶ benefits

- ▶ make IDS intuitively usable by non-technical users
  - ▶ be fully conformant with IDS standards
  - ▶ easy to operate
- ### ▶ integrational component of the ONCITE
- ▶ can also be deployed stand-alone
- ### ▶ aspirational goal is to be Trust+ certified





# TSC certification process

IDS-ready

IDS\_ready – A Seal of Approval for Secure and Trusted Data Exchange

## IDS\_ready – A Seal for Secure and Trusted Data Exchange

T-Systems heavily promotes the IDS\_ready seal. However, many companies still don't know what that is. The makers of IDS promise to build a trusted entity advocating data security and data sovereignty.

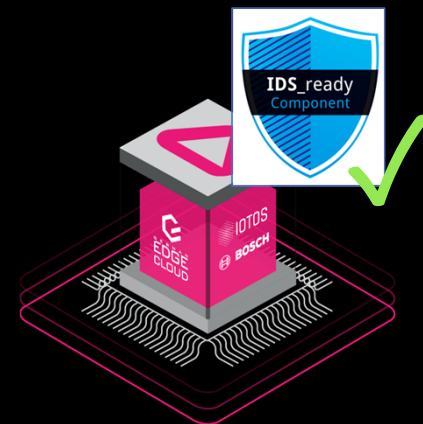


Seven years ago, huge banners could be seen across the halls of Hannover Messe, promoting enterprises 'Industry 4.0 ready'. This year, visitors did not come across such bold value propositions. Businesses have recognized that simply installing a '4.0 component' may not be sufficient to build the future. It has become common sense that – alongside with relevant technical components – appropriate business models, secure data spaces, and reliable security mechanisms need to be established.

While IDS\_ready (IDS = International Data Spaces) from its wording obviously resembles the market, we learned that there is one major difference: The initiators of IDS do not offer any '4.0 component' for secure and trusted data exchange. This is a major step towards creating and establishing new, secure data spaces in industrial manufacturing, but practically across all industries. "IDS\_ready is a reliable value proposition for the competitive edge, as it allows us to implement real data sovereignty in the digital world for the first time."

"Data security has become a major topic in industry, both in the B2B and the B2C segment", Sven Löffler of T-Systems explains. The telecommunications company sees itself as an enabler mainly for small and medium-sized enterprises. "Today, many SMEs look for some kind of a central trusted entity. They do not want to manage this technology on a daily basis. So, our job is to provide this trust and security, alongside with a plausible business model."

**Facilitating data traceability and lineage**





# the IDS-readiness experience

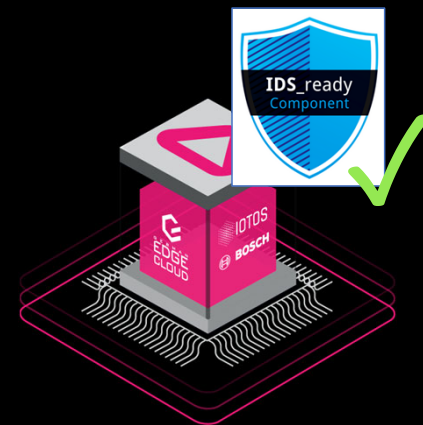
## overview

### ▶ benefits

- ▶ prepares you beforehand for every aspect of certification
- ▶ assures you have a plan
- ▶ experts consulted us on our design

### ▶ it's a project

- ▶ multiple workshops
- ▶ review of what we had
- ▶ going through every IDS certification requirement
- ▶ writing a concept paper

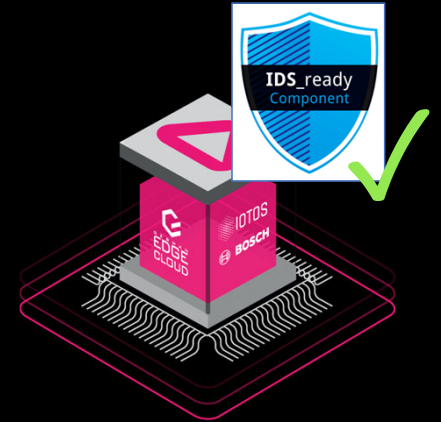




# IDS readiness learnings

## overview

- ▶ certification is very broad (think “ISO 27001”)
- ▶ is not just about IDS-specifics
- ▶ it emphasizes architecture, practices, processes and infrastructure
- ▶ it definitively impacts your implementation
- ▶ only this way IDS users can trust IDS-certified components
- ▶ without IDS-ready: we would not be able to successfully certify





10 minutes

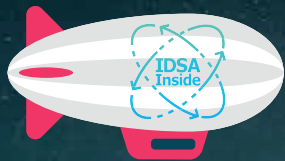
**COFFEE  
BREAK**





# SCOPE

E-RECRUITING FOR EVERYONE





## IDS: THE FUTURE OF DATA PROTECTION

Thanks to the General Data Protection Regulation (GDPR), every EU citizen has the right to know exactly what data a company has stored about them. So far, this regulation has caused many companies headaches and was technically difficult to implement.

The [International Data Space Association \(IDSA\)](#) has developed the new industry standard [IDS](#) for secure data transmission. Thanks to our cooperation with [idento.one](#), we offer you this state-of-the-art security technology, which ensures transparency and legal certainty when handling personal data. There is no additional effort involved for you as a company.

Trust and data sovereignty form the heart of the [IDS](#). All users of [idento.one](#) have guaranteed access at all times to who uses their data, for how long, for which application, how often and under what conditions. Absolute security is a must, especially in the area of recruiting, where applications and resumes with sensitive personal information are involved.

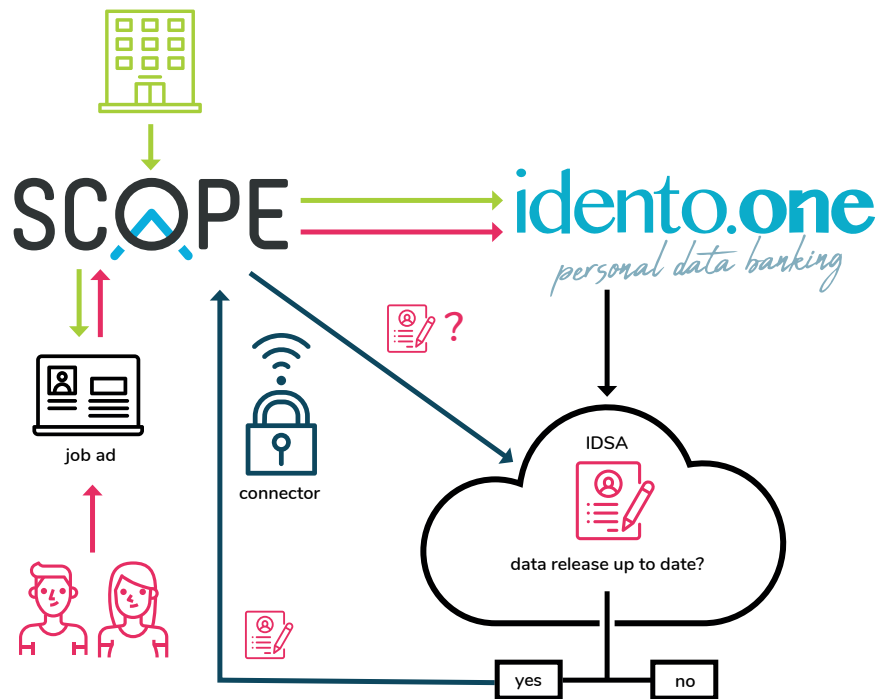
For the applicant, the process is as easy as it gets: With a check mark, he gives the companies to which he is applying the permission to access his data. With one click on a button, he can [revoke this permission at any time](#) and thus determine exactly who sees his data and when. Thanks to absolute transparency, the applicant will always feel safe when applying with SCOPE.



## IDS CASE STUDY: SCOPE & IDENTO.ONE

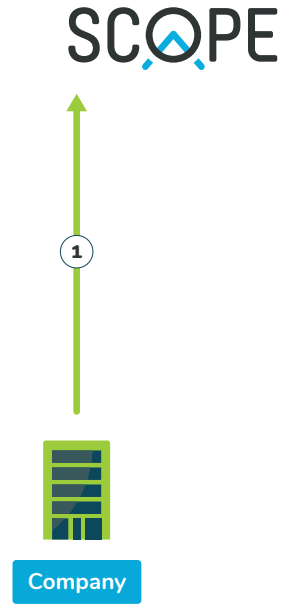
What does the secure data transfer via IDS look like in the case of SCOPE?

1. You sign up on SCOPE and we will, on request, automatically create an idento.one account for your company so that your applicants can benefit from secure data transfer using IDS.
2. You publish job ads via SCOPE and give your applicants the option to access their data at any given time thanks to idento.one.
3. If the candidate gives his permission when applying for a job, we create an idento.one account for him too.
4. The so-called connector provides the technical interface for the communication between SCOPE and idento.one. Thanks to this certified connection, the applicant's personal information can be queried encrypted on demand by our system. On each query it will be checked whether the applicant's data release is still up to date. Only if this is the case will the applicant data be transferred to our system and made available to you or the respective company.



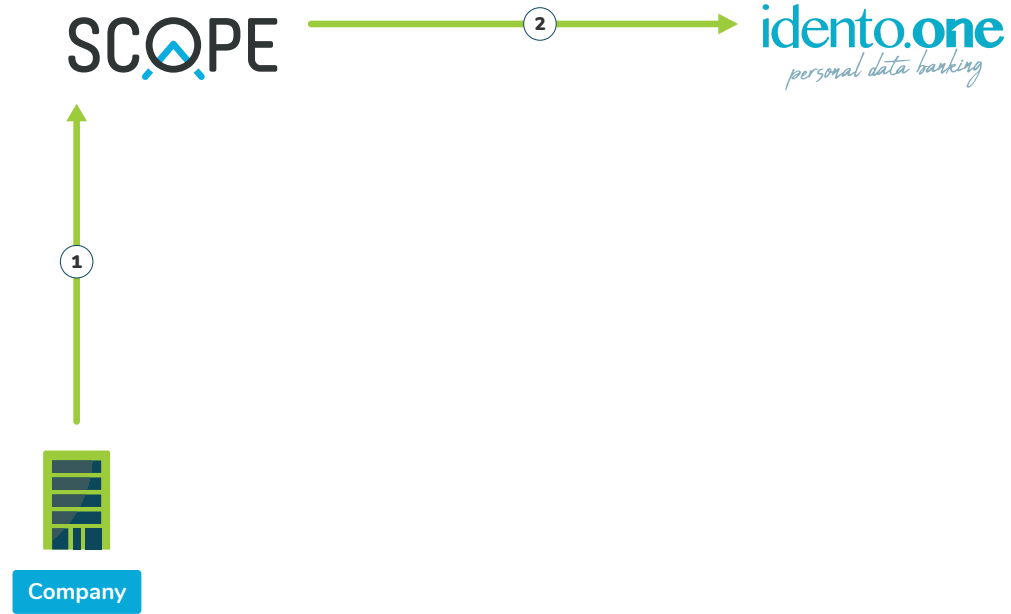


## IDS CASE STUDY: SCOPE & IDENTO.ONE





## IDS CASE STUDY: SCOPE & IDENTO.ONE





## IDS CASE STUDY: SCOPE & IDENTO.ONE





## IDS CASE STUDY: SCOPE & IDENTO.ONE



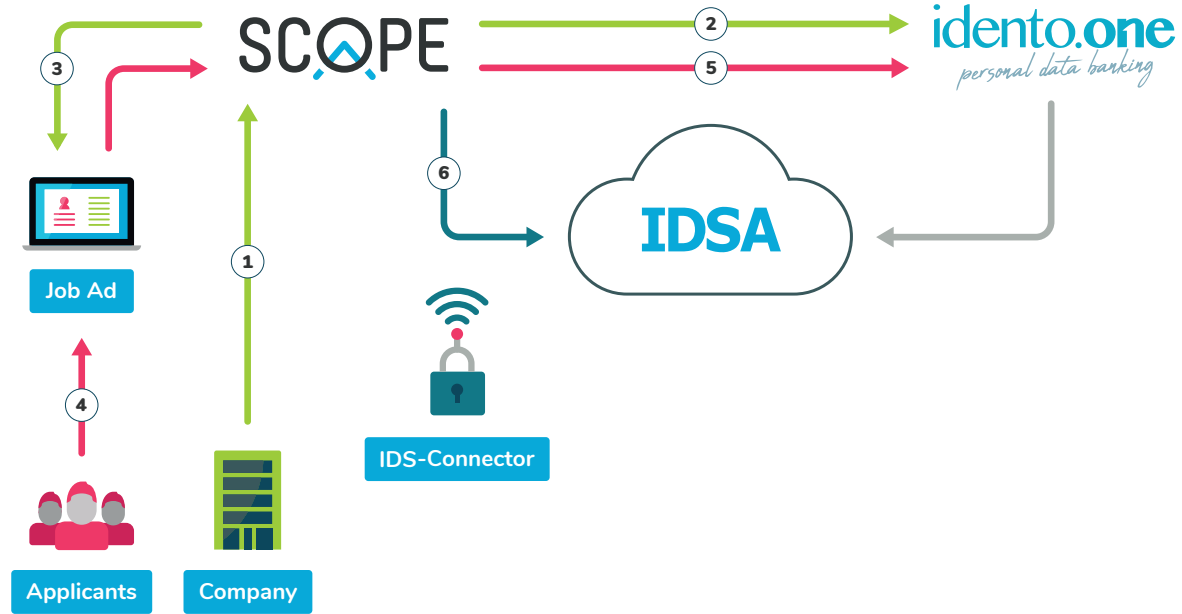


## IDS CASE STUDY: SCOPE & IDENTO.ONE



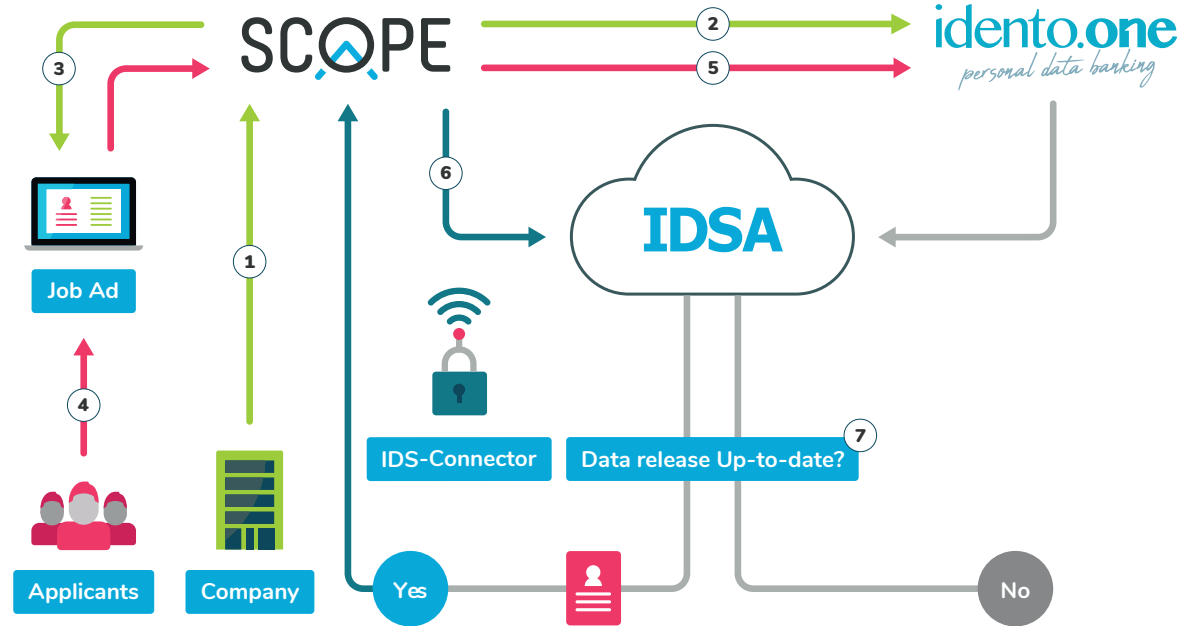


## IDS CASE STUDY: SCOPE & IDENTO.ONE





## IDS CASE STUDY: SCOPE & IDENTO.ONE





## DO YOU LIKE WHAT WE DO?

We would be happy to support you in making secure E-Recruiting a reality in your company. As software development specialists, we can also help you develop IDS connectors.

Just give us a call at [069 90757250](tel:06990757250) or write me an e-mail to [sven@scope-recruiting.de](mailto:sven@scope-recruiting.de).

Visit us at [www.scope-recruiting.de](http://www.scope-recruiting.de).



# Horizontal Supply Chain Collaboration HSC<sup>2</sup>

[Community Use Case]

Alexander Aberle

29<sup>th</sup> June 2020





# USING "SENSOR INTELLIGENCE." IN A SMART WAY

AS A CUSTOMER, OUR SOLUTIONS ARE OPEN TO YOU  
AND TO YOUR SYSTEMS



Detecting



Identifying



Measuring



Protecting



Integrating



Controlling

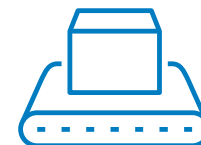


# THE BROADEST PORTFOLIO IN THE INDUSTRY

OUR UNIVERSE  
FOCUSES ON  
APPLICATIONS IN THE  
FIELD OF AUTOMATION



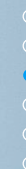
**Factory**



**Logistics**



**Process**





# 2019

1,751



SALES  
(IN EUR MILLION)

133



EBIT  
(IN EUR MILLION)

1,774



ORDERS RECEIVED  
(IN EUR MILLION)

10,204



EMPLOYEES

1,310



EMPLOYEES IN R&D

3,493



PATENTS

202

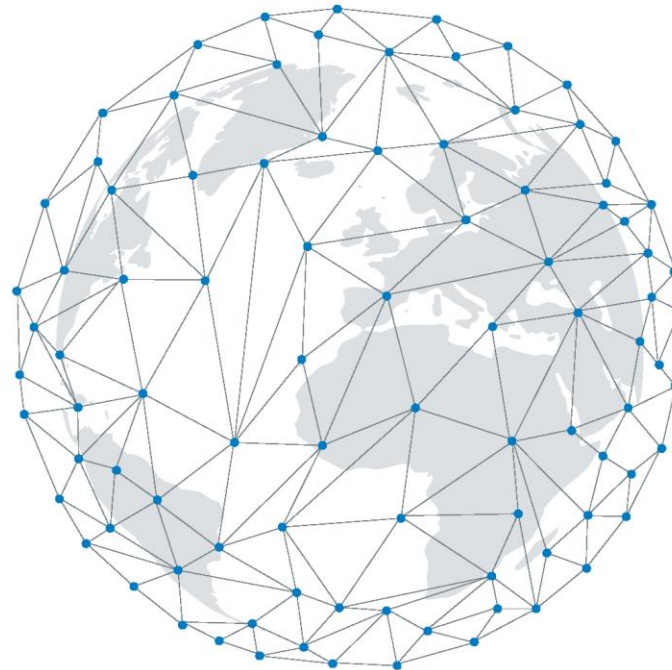


R&D EXPENDITURE  
(IN EUR MILLION)

40,000



PRODUCT  
SOLUTIONS





# Globalization





# Global Networking





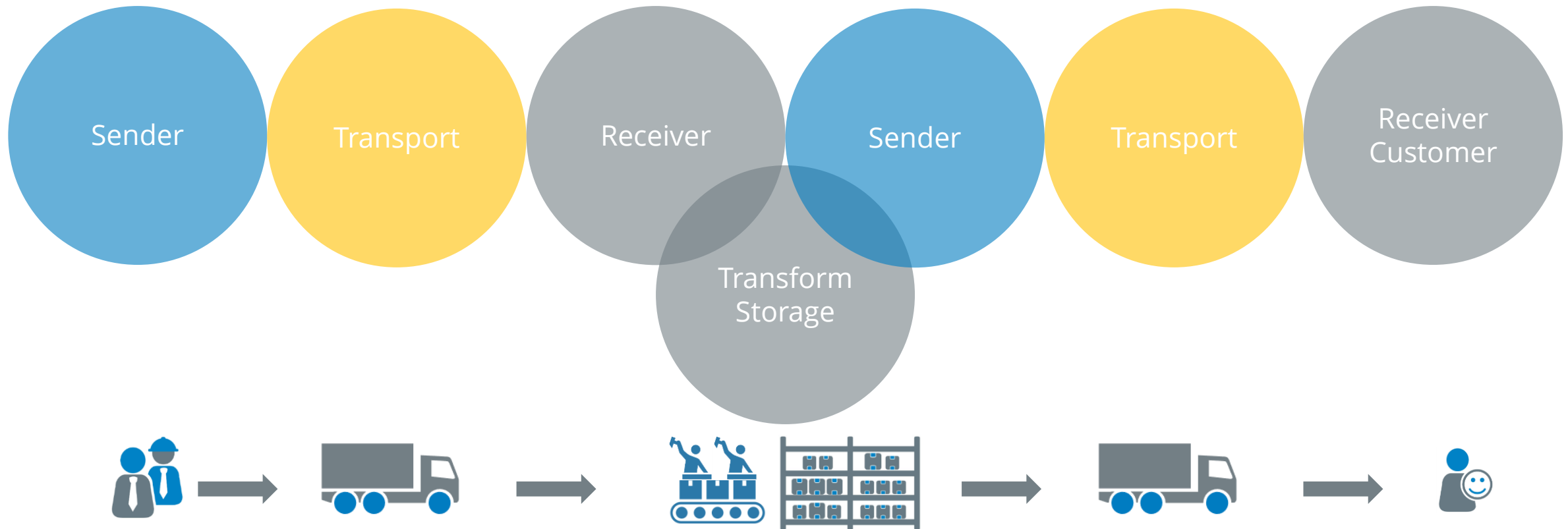
# Smart Factory





# Supply Chain

Global Network

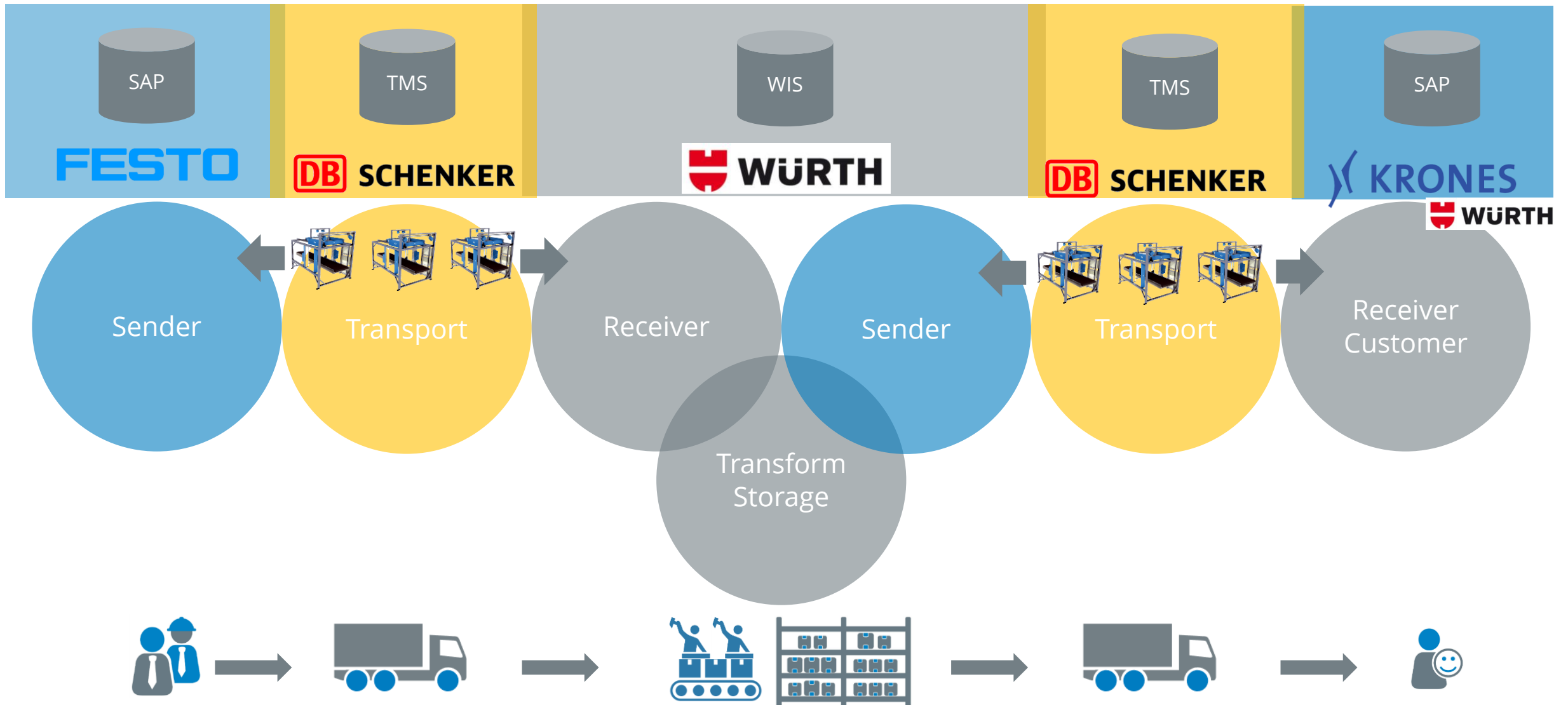




# Supply Chain

Global Network - local „data islands“

**SICK**  
Sensor Intelligence.

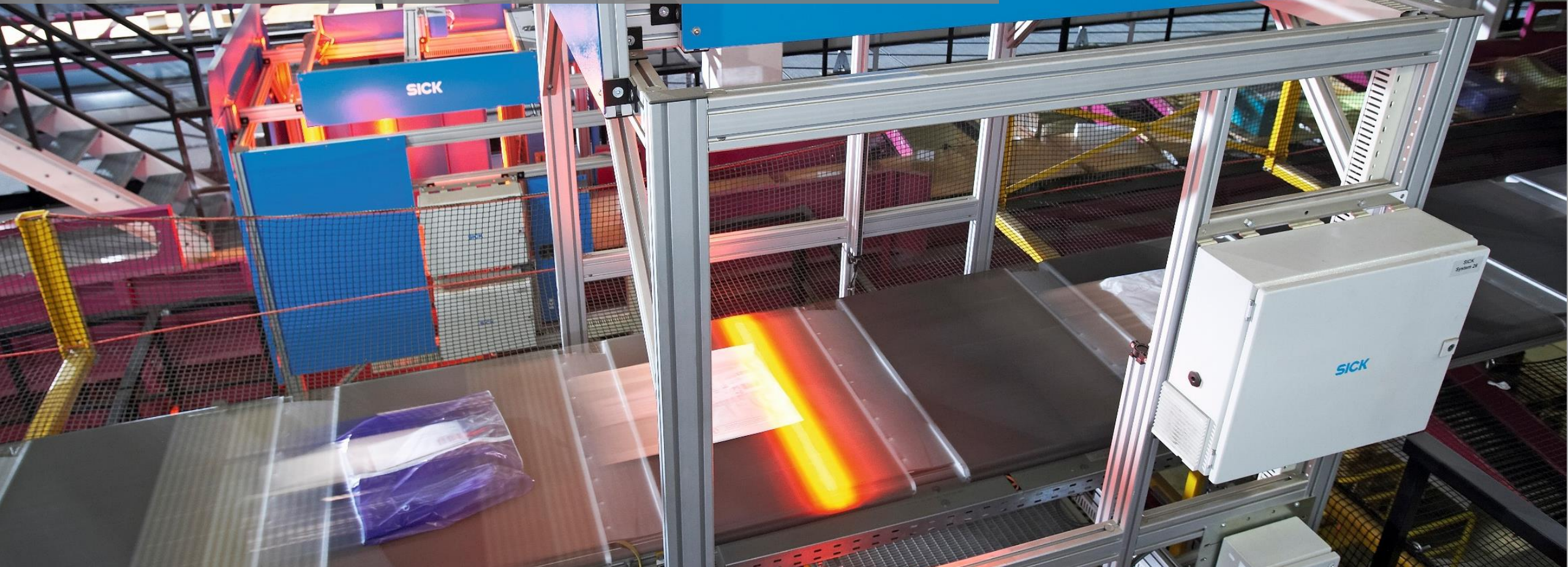




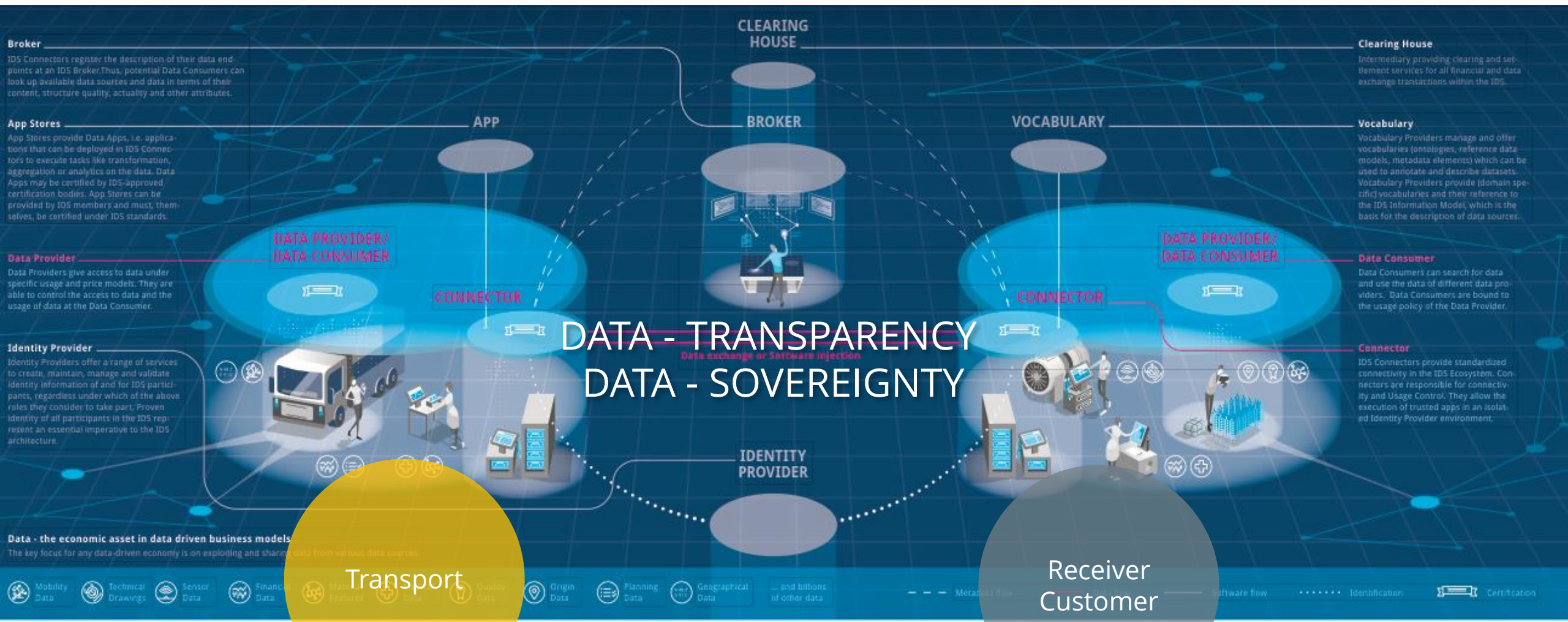
# Tracking System

- Identification and inspection of shipment
- Measure of weight and dimensions incl. image capture
- Damage detection and notification

**SICK**



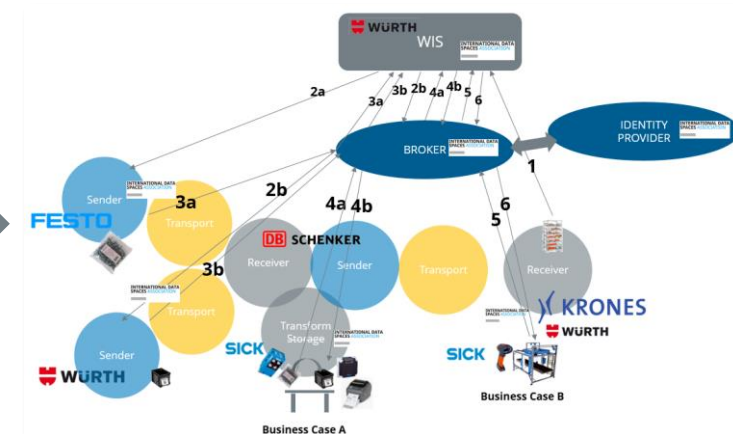
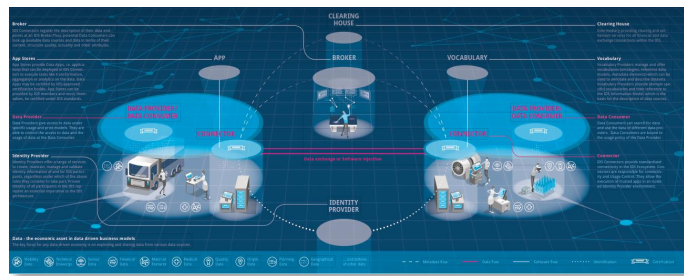
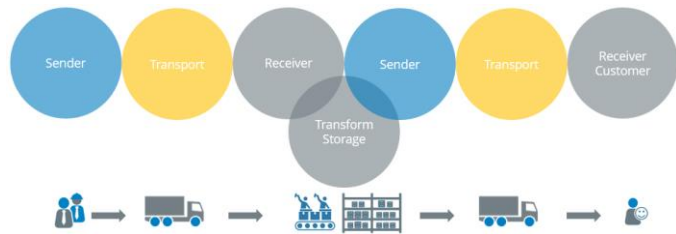






# Supply Chain

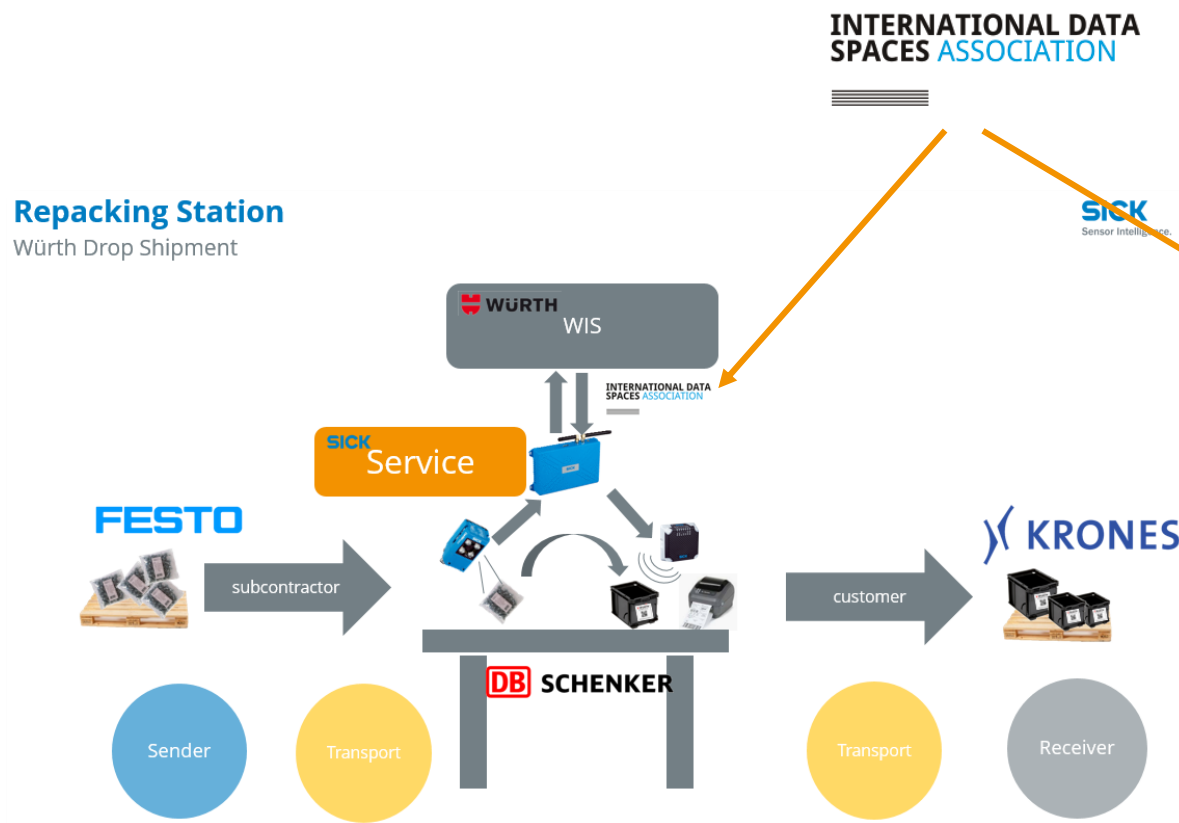
## Drop Shipment – Community Use Case





# Ideas for additional “process documentation stations”

with secure connection via the IDS infrastructure



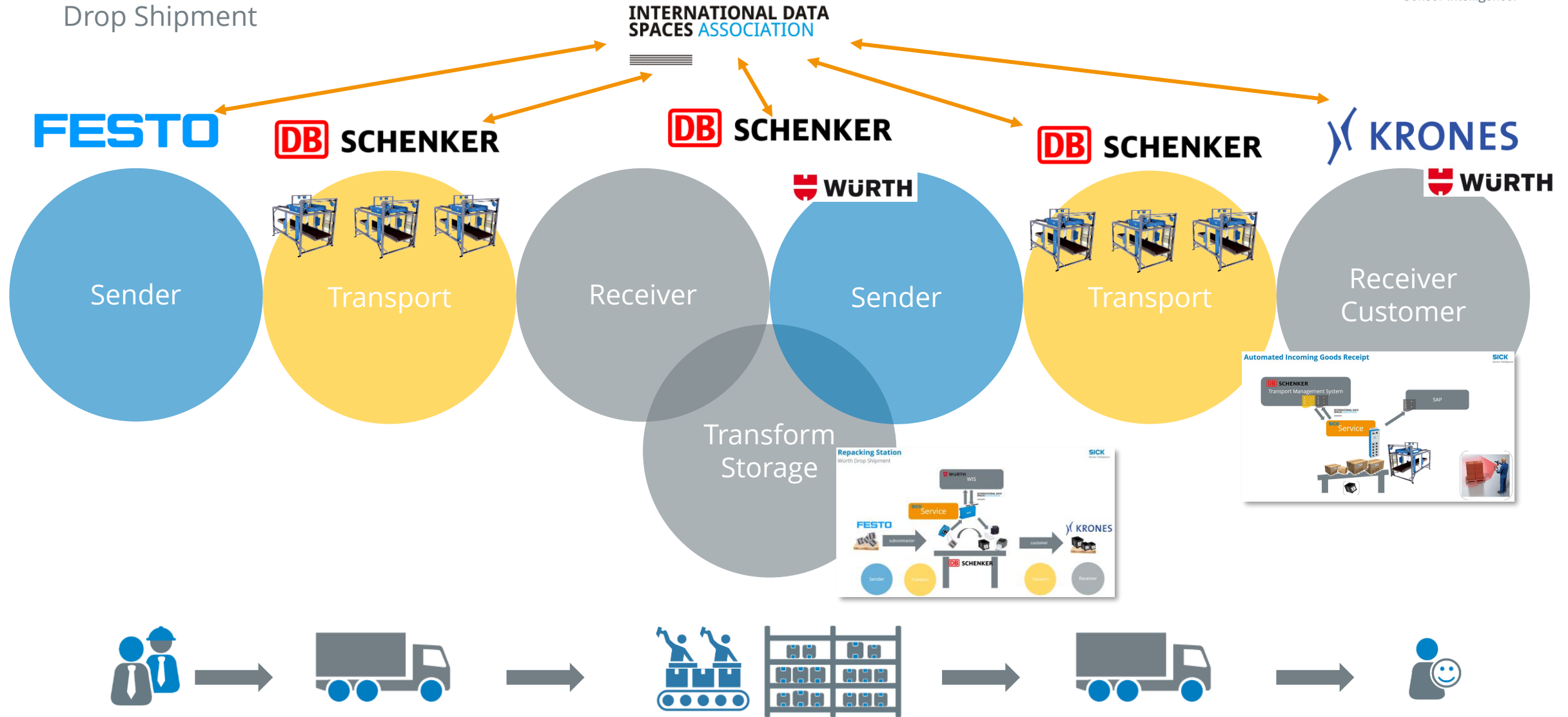
## Automated Incoming Goods Receipt





# Supply Chain

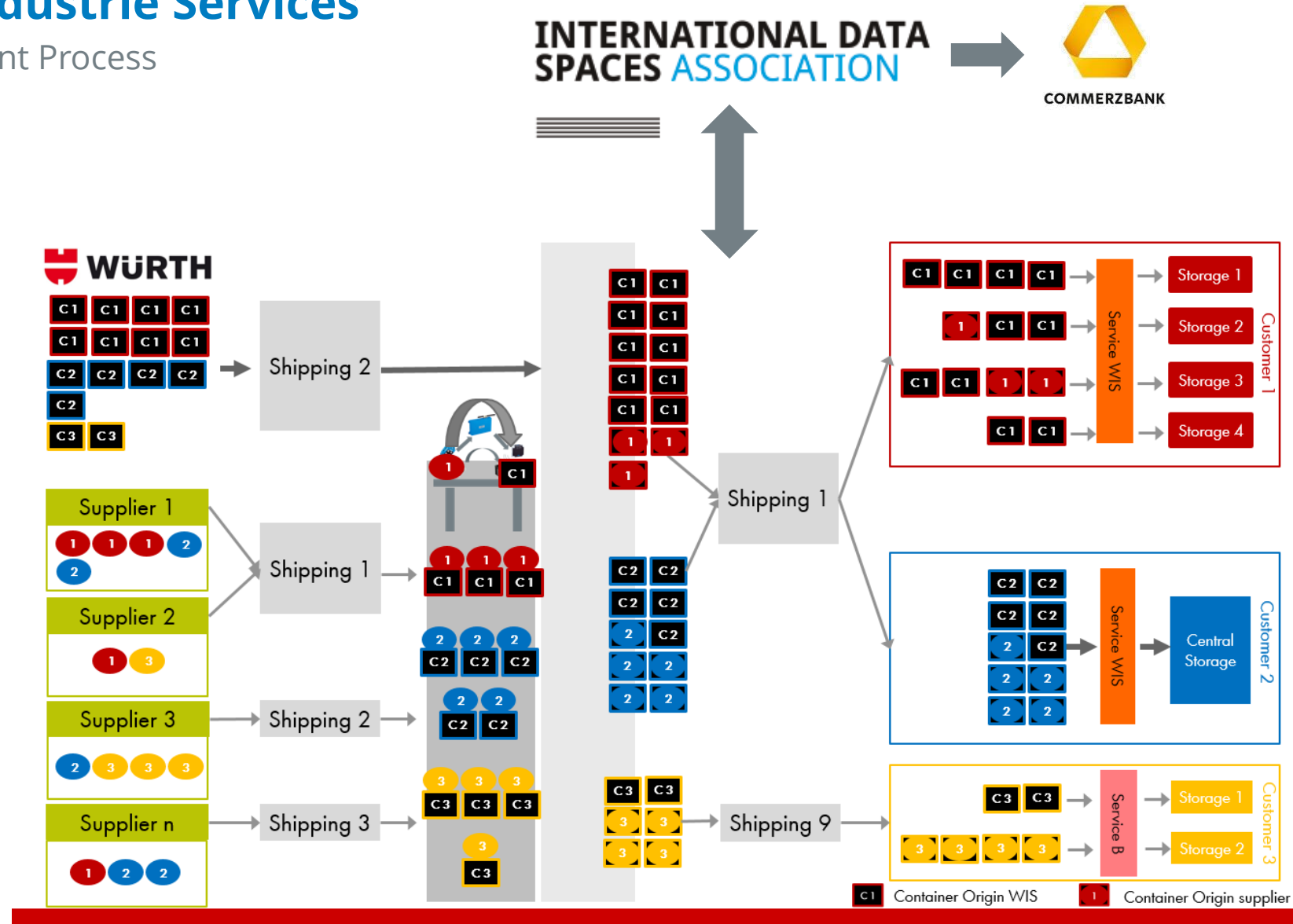
Drop Shipment





# Würth Industrie Services

## Drop Shipment Process



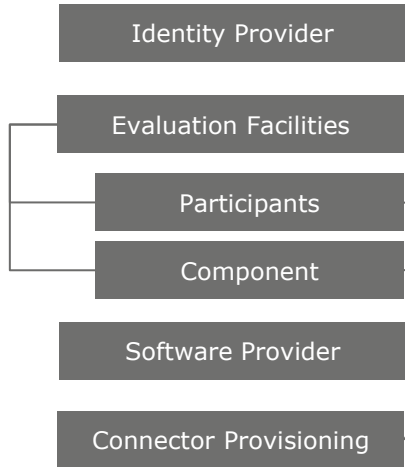
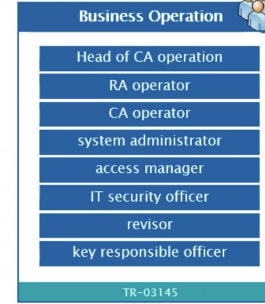
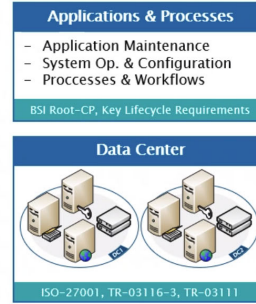
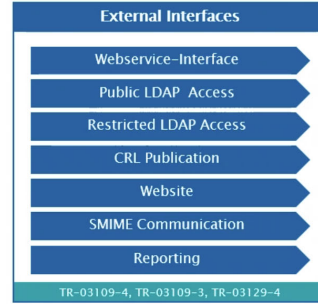
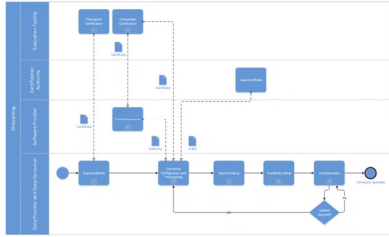


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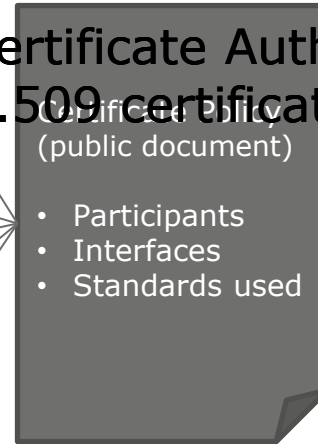
## IDS Launching Coalition Fest

- ▶ Certification Authority for X.509certificates





## Certificate Authority for X.509 certificates



RFC: 3647

Federation of Existing CA  
(e.g. Atos, T-System, Bundesdruckerei...)



Implement

New CA (e.g. IDSA)



Define

Implement

Trust Center Operations



- 
- ▶ Define Certificate Policy (2-3 Workshops)
  - ▶ Assess Certificate Practice Statement & Security Policy
  - ▶ Take decision on CA provider



## BOOSTING THE IDSA LAUNCHING COALITION ... 2020-06-29



=> Forming the **IDSA Mobility Data Space Community**



# FROM COLLISION TO SOLUTION: MOBILITY DATA SPACE

## Traditional Automotive

EU, DE jobs  
High tech  
EU power

13.5 million  
Autonomous ...  
US/CN hyperscalers

Electrified, shared ...  
Micromobility  
Multimodal, intermodal

**Mobility :=**  
Coordination problem

Tech  
Strategy  
Regulation

## Reality 2030

Full  
Climate  
Stuck

Sales, cars lasting longer  
Driving bans ...  
A-to-B: Longer, costlier

Unix, Linux  
Internet  
GSM

**Open standards**

**IDS**

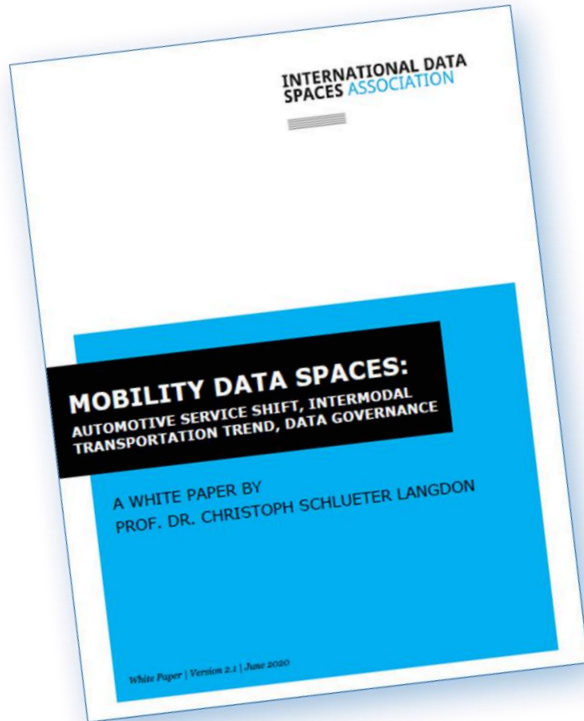
IDSA  
DIN 27070  
Mobility Community ...

=> **Mission: „Promote the open IDS standard to make better mobility happen now.“**





## WHITE PAPER ... AS A TANGIBLE FOUNDATION



### Initial contributors\*



### First chapters\*

Automotive service shift  
Trends and transformation  
Pan-european "data roaming"  
Platforms and interoperability  
Micromobility

...

-> Prof. Dr. Chris Langdon , +49 170 774 1323 , [christoph.schlueter.langdon@t-systems.com](mailto:christoph.schlueter.langdon@t-systems.com)

\* Done, in progress or planned







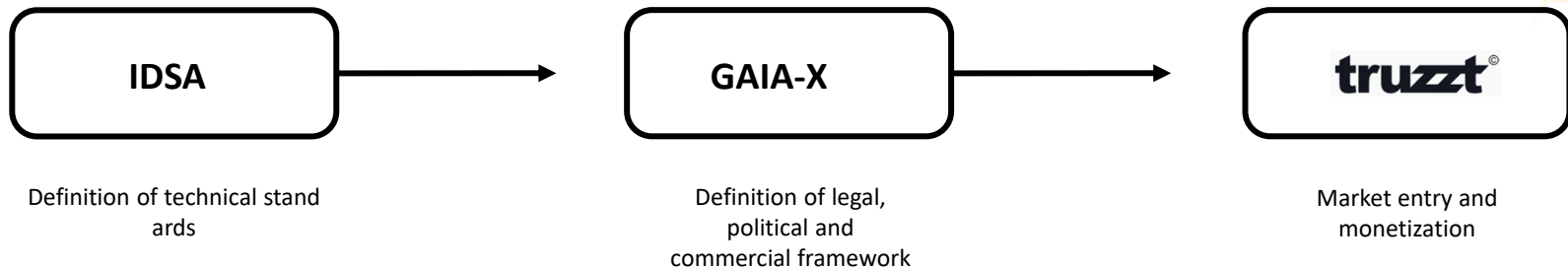
## Our Idea – Our Offering

Monday, June 29<sup>th</sup>, 2020





## Our Idea: Making IDSA Consumable





## Our Role: Orchestration

Orchestrate the data economy. Enable a trusted, secured and business neutral data exchange across companies and ecosystems

Like an electricity suppliers delivers the energy up to a normed interface – the power outlet – truzzt provides the Connector for the IDSA architecture as a standard interface

IDSA-as-a-Service – a “standard-as-a-service” to ease & accelerate its adoption, to secure invests





# Our Product: What We Do

**01.**

## **Provider**

truzzt will act as provider of trusted infrastructure services to orchestrate the data economy across all relevant industries

**02.**

## **Modules**

We will provide the core modules which are the essential parts of the IDSA Reference Architecture: Connector, Billing, Clearing House, Brokerage, Storage, DAPS, AppStore

**03.**

## **Modular**

Get the entire package or just those modules that complement your own architecture – your choice! As well, it comes with the needed interface to manage all settings

**04.**

## **Industry Agnostic**

The non-exhaustive list of industries vertical markets involves Logistics, Automotive /Mobility, Health, Home & Fitness, Manufacturing, Finance, Smart Cities, Energy, Agriculture

**05.**

## **Moderation**

Ecosystem Coaching & Moderation:  
Supporting the active truzzt customer base in Defining cross industry digital business models  
And business cases jointly with further ecosystem partners





## Our Focus: What We Do Not Do

We do not interfere with your business

We do not interfere with your application

We do not interfere with your data

We do not go B2C

We do not govern any connection





# Our Status: GO Live In 2020

Please contact us:



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# Thank You!

Connecting Ecosystems – Everybody Wins!

Michael Tworek

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[mtworek@truzzt.com](mailto:mtworek@truzzt.com)







Certification

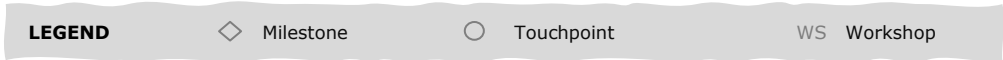
Essential  
Components

IDS Rule Book

## ***WRAP UP & OUTLOOK***

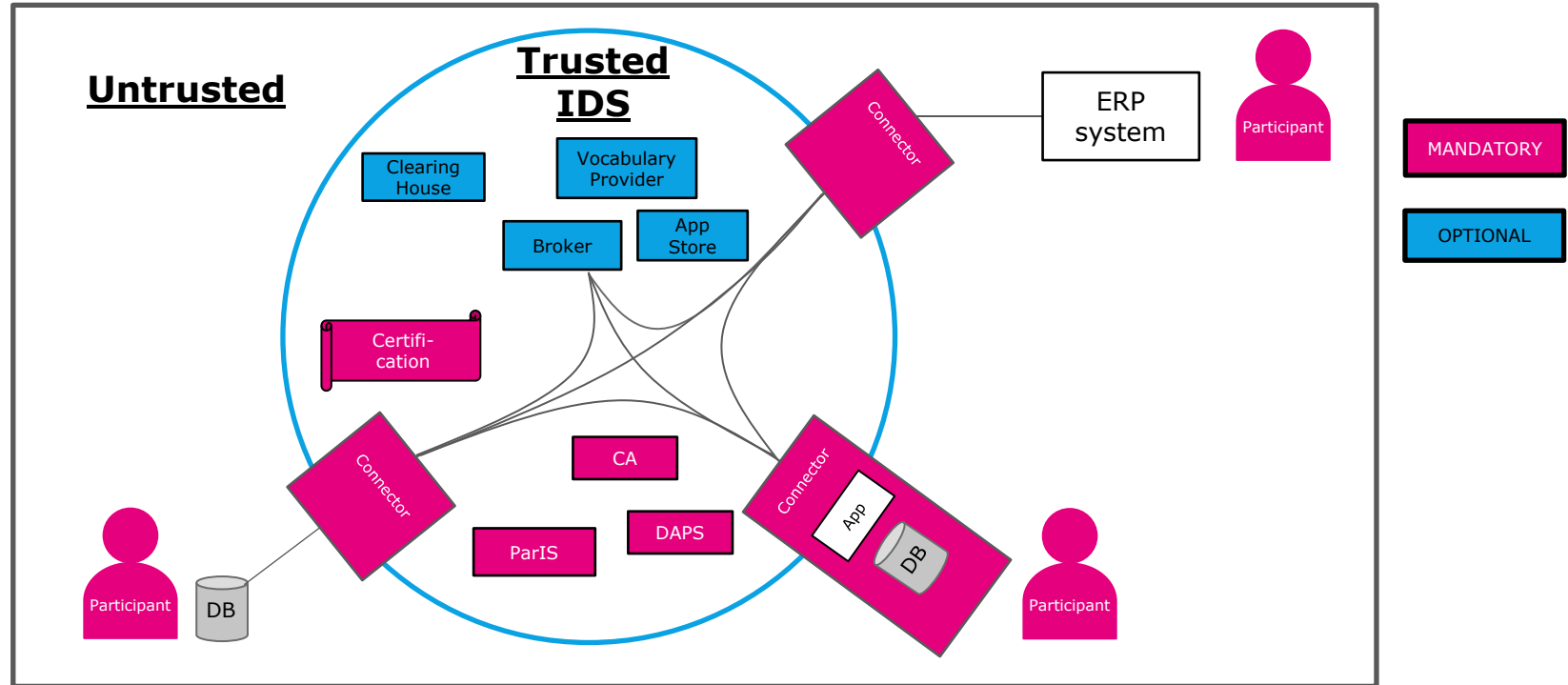


**EXTENSION**





# REQUIRED COMPONENTS FOR THE IDS ECOSYSTEM





# WHAT NEXT?



1

## Building the basecamp and going further

- Continuous refinement of essential components and Rule Book
- Continue work on optional components
  - Metadata Broker
  - App Store
  - Clearing House
  - Vocabulary Provider

RIGHT  
NOW

2

## Make the ecosystem grow by letting you join the IDS

1. Define your use cases
2. Use existing infrastructure
3. Implement your own components (optional)
4. Certify yourself and your own components
5. Start being the sovereign of your data and explore the potential value of your data

YET TO  
COME

Interested?

[LC@internationaldataspaces.org](mailto:LC@internationaldataspaces.org)





# QUESTIONS & ANSWERS

*Raise your hand or  
use the question  
section!*





Frqwulexwlrqv#  
ri#IGVD#r#kh#  
vxfhvv#ri#  
JDID0[



*The IDS reference architecture serves as an initial impulse for GAIA-X. As a basis for an open ecosystem, it enables provider and consumer of data to connect in a secure, interoperable and sovereign way. Combined with highly available storage and efficient processing of data GAIA-X has the potential to create a secure and trustworthy data infrastructure based on European values.*

#### CONCEPTUAL



- Concept for data sovereignty
- Mindset for the value of data sharing

#### TECHNICAL



- A trustworthy architecture for data sovereignty
- Reference Architecture V3.0

#### STANDARD



- Formal DIN standard on its way to ISO
- security gateway for sharing data and services

#### EU DATA STRATEGY



- Design principles and functional building blocks for data spaces



#### COMMUNITY OF PRACTICE

50+

- Concrete implementations with high TRL or even commercial offering
- National and European research projects with 100+ Mio. € volume

#### GLOBAL REACH

100+



- 100+ members from 20 countries all over the world
- Companies, research organizations, industry associations

#### IDSA HUBS



- Formal agreements with organizations in 9 countries to proliferate data sovereignty on country level

#### CERTIFICATION



- Formal certification states coherence to reference architecture, interoperability and software quality

#### GLOBAL LIAISONS



- Harmonization of reference architecture with leading global initiatives





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Association*



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