INTERNATIONAL DATA SPACES ASSOCIATION

USE CASE OVERVIEW

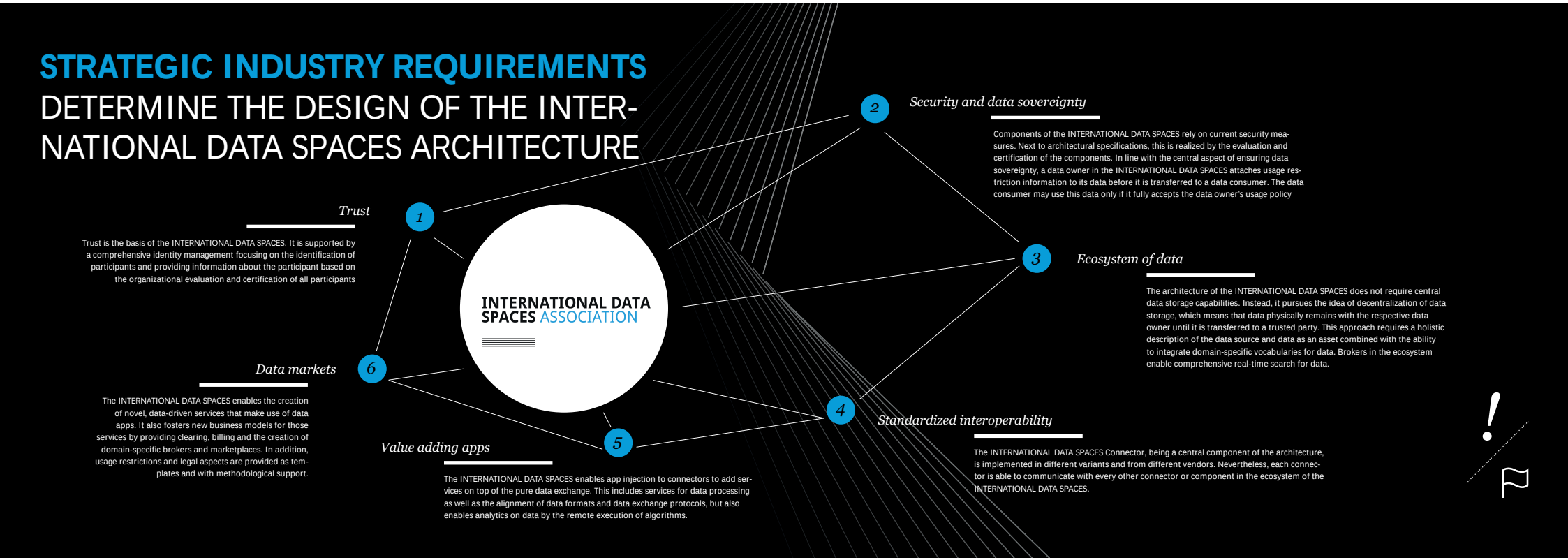
INTERNATIONAL DATA SPACES

OUR USE CASES MAKE IT HAPPEN!

THE INTERNATIONAL DATA SPACES ARE AN ARCHITECTURE FOR VIRTUAL DATA SPACES LEVERAGING EXISTING STANDARDS AND TECHNOLOGIES, AS WELL AS ACCEPTED GOVERNANCE MODELS FOR THE DATA ECONOMY, TO FACILITATE THE SECURE AND STANDARDIZED EXCHANGE AND EASY LINKAGE OF DATA IN **A TRUSTED BUSINESS ECOSYSTEM**. THEY THEREBY PROVIDE A BASIS FOR SMART SERVICE SCENARIOS AND INNOVATIVE CROSS-COMPANY BUSINESS PROCESSES, WHILE AT THE SAME TIME MAKING SURE DATA SOVEREIGNTY IS GUARANTEED FOR THE PARTICIPATING DATA OWNERS.

IN ORDER TO IDENTIFY THE REQUIREMENTS FROM POTENTIAL APPLICATION SCENARIOS OF THE INTERNATIONAL DATA SPACES ON THE ONE HAND, AND TO VALIDATE THE APPLICABILITY IN REAL SCENARIOS ON THE OTHER HAND, THE MEMBERS OF THE INTERNATIONAL DATA SPACES ASSOCIATION (IDSA) DEVELOP DIFFERENT USE CASES. A USE CASE DESCRIBES A SCENARIO, IN WHICH AN ACTOR TRIES TO REACH A CERTAIN GOAL BY USING A CONSIDERED SYSTEM, WHICH IS ACCORDING TO **THE INTERNATIONAL DATA SPACES**.

STRATEGIC INDUSTRY REQUIREMENTS
DETERMINE THE DESIGN OF THE INTERNATIONAL DATA SPACES ARCHITECTURE



1

Trust

Trust is the basis of the INTERNATIONAL DATA SPACES. It is supported by a comprehensive identity management focusing on the identification of participants and providing information about the participant based on the organizational evaluation and certification of all participants

2

Security and data sovereignty

Components of the INTERNATIONAL DATA SPACES rely on current security measures. Next to architectural specifications, this is realized by the evaluation and certification of the components. In line with the central aspect of ensuring data sovereignty, a data owner in the INTERNATIONAL DATA SPACES attaches usage restriction information to its data before it is transferred to a data consumer. The data consumer may use this data only if it fully accepts the data owner's usage policy

3

Ecosystem of data

The architecture of the INTERNATIONAL DATA SPACES does not require central data storage capabilities. Instead, it pursues the idea of decentralization of data storage, which means that data physically remains with the respective data owner until it is transferred to a trusted party. This approach requires a holistic description of the data source and data as an asset combined with the ability to integrate domain-specific vocabularies for data. Brokers in the ecosystem enable comprehensive real-time search for data.

4

Standardized interoperability

The INTERNATIONAL DATA SPACES Connector, being a central component of the architecture, is implemented in different variants and from different vendors. Nevertheless, each connector is able to communicate with every other connector or component in the ecosystem of the INTERNATIONAL DATA SPACES.

5

Value adding apps

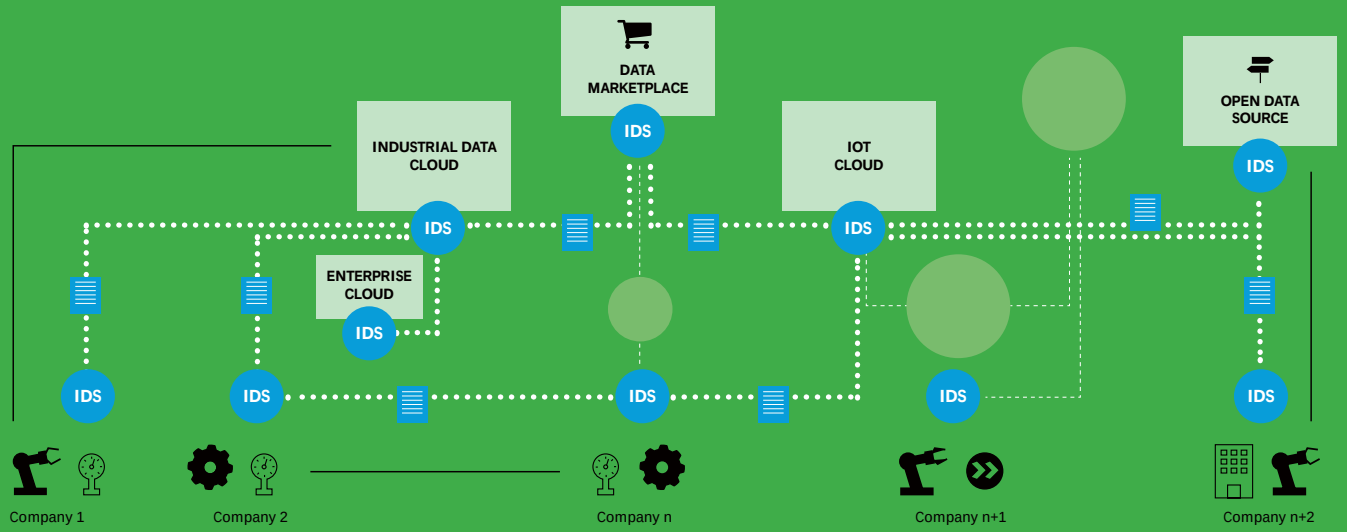
The INTERNATIONAL DATA SPACES enables app injection to connectors to add services on top of the pure data exchange. This includes services for data processing as well as the alignment of data formats and data exchange protocols, but also enables analytics on data by the remote execution of algorithms.

6

Data markets

The INTERNATIONAL DATA SPACES enables the creation of novel, data-driven services that make use of data apps. It also fosters new business models for those services by providing clearing, billing and the creation of domain-specific brokers and marketplaces. In addition, usage restrictions and legal aspects are provided as templates and with methodological support.

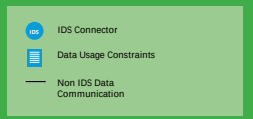
IDS-ONLY CRITERIA



By proposing a specific software component, the INTERNATIONAL DATA SPACES Connector, industrial data clouds can be connected, as well as individual enterprise clouds and on-premise applications and individual connected devices.

THE INTERNATIONAL DATA SPACES APPROACH CONNECTS ALL KINDS OF DATA ENDPOINTS

When broadening the perspective from an individual use case scenario to a platform landscape view, the INTERNATIONAL DATA SPACES positions itself as an architecture to link different cloud platforms through secure exchange and trusted sharing of data, short: **through data sovereignty.**



OUR USE CASES

PURPOSE

Use cases representing the cross-company business processes modified with the INTERNATIONAL DATA SPACES. The purpose is the identification, analysis and evaluation of requirements of user enterprises to be met by the INTERNATIONAL DATA SPACES. Furthermore, the enterprises demonstrate innovations on the basis of the INTERNATIONAL DATA SPACES and build a potential core of an ecosystem through the integration of additional (also foreign domain) partners and the development of value adding smart services. Use cases were also used to spread the INTERNATIONAL DATA SPACES through different industries and countries.

Each member of the association realizes its own use case

Each member of the user association realizes a business driven use case, which demonstrates the innovations based on.

INTERNATIONAL DATA SPACES and potential core of an ecosystem by integrating further partners (also from different domains). This leads to ecosystem specific Use Cases that cross Security Domains and apply to the INTERNATIONAL DATA SPACES Governance concerning trust and the respect for data usage policies. The INTERNATIONAL DATA SPACES will show its benefits and value to business especially when Use Cases combine data assets from different ecosystems seamlessly.

DEFINITION

In order to identify the requirements from potential application scenarios of the INTERNATIONAL DATA SPACES on the one hand, and to validate the applicability of the INTERNATIONAL DATA SPACES in real scenarios on the other hand, the research project develops different use cases. A use case describes a scenario, in which an actor tries to reach a certain goal by using a considered system, which is the INTERNATIONAL DATA SPACES.

The characteristics of a use case in the context of the INTERNATIONAL DATA SPACES are the following:

- Combination of data from **several data sources**
- Integration of **different data types** (e.g. master data and status data of the production line)
- Combination of **different data assets** (private data, public data, club data)
- At **least two companie**s should collaborate in one use case
- Integration of **more than two company architecture floors** (e.g. »Shop Floor« and »Office Floor«)
- Basis for offering **»smart services«**

COMMUNITIES BUNDLE USE CASES FROM ONE ECOSYSTEM

Our Communities develop a variety of Use Cases in a certain domain, e.g. Medical, Materials, Logistics, Industrial and Farm & Food.

- Interest Groups from one domain, one ecosystem with common challenges
- Validating INTERNATIONAL DATA SPACES and proliferating the approach and technology
- Finding common and new requirements from the community to amend the reference architecture
- Driving domain specific implementation, business model development, product launchs
- Jointly solving common challenges using INTERNATIONAL DATA SPACES technology

PROCESS

The use case process helps setting up use cases in your company.

1 ONBOARDING
After becoming a member of the INTERNATIONAL DATA SPACES Association, capabilities must be built up within the company to understand the idea of the INTERNATIONAL DATA SPACES concept.

2 IDENTIFY
Inspired by the concept and related business cases the focus is on identifying an own use case during stage 2. The working group use cases and requirements of the user association supports this process.

3 SET UP
Stage 3 focuses on setting up project planning, project management and the ongoing reporting of requirements. Technical workshops help to define a prototype environment in a relevant business environment.

4 IMPLEMENT
According to the agile development process, software components like the INTERNATIONAL DATA SPACES Connector are implemented in the company´s IT infrastructure.

5 VALIDATE
Following the implementation phase, the prototype can be validated and the project can be reviewed.

6 ROLL-OUT
Finally the prototype can be rolled-out in a productive system.

The whole process will be supported by selected partners of the INTERNATIONAL DATA SPACES Association.

Use Case ***#01***

ADVANEO – BROKER FOR A SECURE DATA EXCHANGE ON A VIRTUAL DATA MARKET PLACE

Advaneo advises and accompanies companies in the field of digital transformation. One focal point for European railway companies is on questions of standardisation and digitisation in infrastructure technology. This is all about guaranteeing the highest possible data security to avoid data misuse.

Deutsche Bahn, for example, equips tens of thousands of railway-track switches with special sensors that provide the company with important information about the condition of the points drives and therefore enable predictive maintenance. These data are also of great interest to other companies so they could even be traded commercially.

In this application scenario, Advaneo serves as a broker that arranges the secure exchange of the respective data between provider and user via IDS structures. On a virtual marketplace, the "Advaneo Data marketplace", comprehensive metadata from different sources are available on the supply side. Other users of the marketplace can purchase this information to gain the latest insights or to develop new business models.

Data sovereignty has first priority in all processes: exchange is only possible via the secured data space of IDS that safeguards the processes for the partners and simultaneously guarantees adherence to the distinct rules of the game. All participants in the data exchange are identified and certified thanks to IDS.

BENEFITS

- *Individual cloud-based data management marketplace to access and share railway switches*
- *Enables railway suppliers to identify existing data assets of shunting switches for new value added*

TARGETS

- To exchange critical data securely and trade them in a non-discriminatory way
- To guarantee data sovereignty

PARTNERS/ ECOSYSTEMS

- Railway infrastructure companies
- Signal construction company

MAIN TECHNOLOGY/ IDS COMPONENT

- Adavaneo–IDS broker connector
- Broker repository and indexing
- Identity access management and clearing house

Use Case #02

AMABLE – ADDITIVE MANUFACTURING 3D PRINTING

AMable

BENEFITS

- *Digital market place for Additive Manufacturing*
- *Companies can handle complete processes via a central platform*
- *Merging users and providers*

TARGETS

- To support small and medium-sized companies in implementing 3D printing techniques
- To create a digital service arena where companies offer their services
- To protect intellectual property by maintaining data sovereignty

PARTNERS/ ECOSYSTEMS

- Fraunhofer Society
- CISCO Systems International
- INTERNATIONAL DATA SPACES
- The Manufacturing Technology Centre Limited LBG

MAIN TECHNOLOGY/ IDS COMPONENT

- IDS Broker
- IDS Base Connector
- Clearing & Billing
- Vocabulary

3D printing techniques offer many advantages to companies. Because behind the term 3D printing there are a number of additive manufacturing technologies which can improve structures and processes. So far, it has mainly been large companies which have been able to benefit from the innovative processes. But it is small and medium-sized companies, in particular, that have problems implementing their ideas with respect to Additive Manufacturing. AMable wants to pave the way to industrial 3D printing for these companies and deliver support from the development process of the product right through to the finished printout. This is intended to put small and medium-sized companies in a position to produce single parts or small series made of plastic or metal using these new technologies.

AMable creates a digital market place with the help of IDS components where providers and users can come together. All participants can benefit from this: providers benefit by getting new orders and better capacity utilization, and users benefit by having a comprehensive range of offerings that enables them to order all the services they need via one central platform. In this way, the participating companies not only receive high-quality products but also benefit from time, price and cost advantages. By using IDS technology, it is possible to protect intellectual property rights and to guarantee your own data sovereignty when using the digital market place.

BOSCH
Technik fürs Leben

TARGETS	PARTNERS/ ECOSYSTEMS	MAIN TECHNOLOGY/ IDS COMPONENT
» Sovereign data exchange through terms of use	» Bosch/Audi	» IDS Base Connector
» System-supported data exchange in the case of risks	» Fraunhofer IML, ISST, IESE	» Existing logistics systems
» Event-based supply chain transparency between Audi AG and Robert Bosch GmbH	» Experts from logistics and IT at Bosch & Audi	» Oracle APEX application (Audi)
		» Web service developed by Bosch

Hurricanes, earthquakes, bankrupt supplier companies: hazards like these often lead to breakdowns along the supply chain between suppliers, transporters and manufacturers. This can seriously disrupt the production of goods. However, when such risk events occur, communication between the participants is often inefficient, incurring high costs for time and resources. The "Collaborative Supply Chain Risk Management" use case helps companies to exchange information and sensitive data quickly and securely in order to avoid bottlenecks like this. The companies involved work more closely together and increase the transparency of the supply chain in the case of risks. Moreover, automated risk reports make it possible for the companies to react more effectively and efficiently.

This application scenario offers solutions for the automotive industry but is also interesting for other industries. Compared to classic cloud solutions, INTERNATIONAL DATA SPACES that serves as a data interface to all participating companies provides a wide range of benefits. IDS creates the technical basis for sovereign data exchange. Many of the data that must be exchanged when such risk events occur are so sensitive that companies have not been passing them on automatically to their partners until now.

Thanks to IDS, in future, the companies – as data owners – will retain control over these sensitive data that can be stored and exchanged decentrally. The participants attach defined terms of use to their information and thus control how the data consumer can use the information.

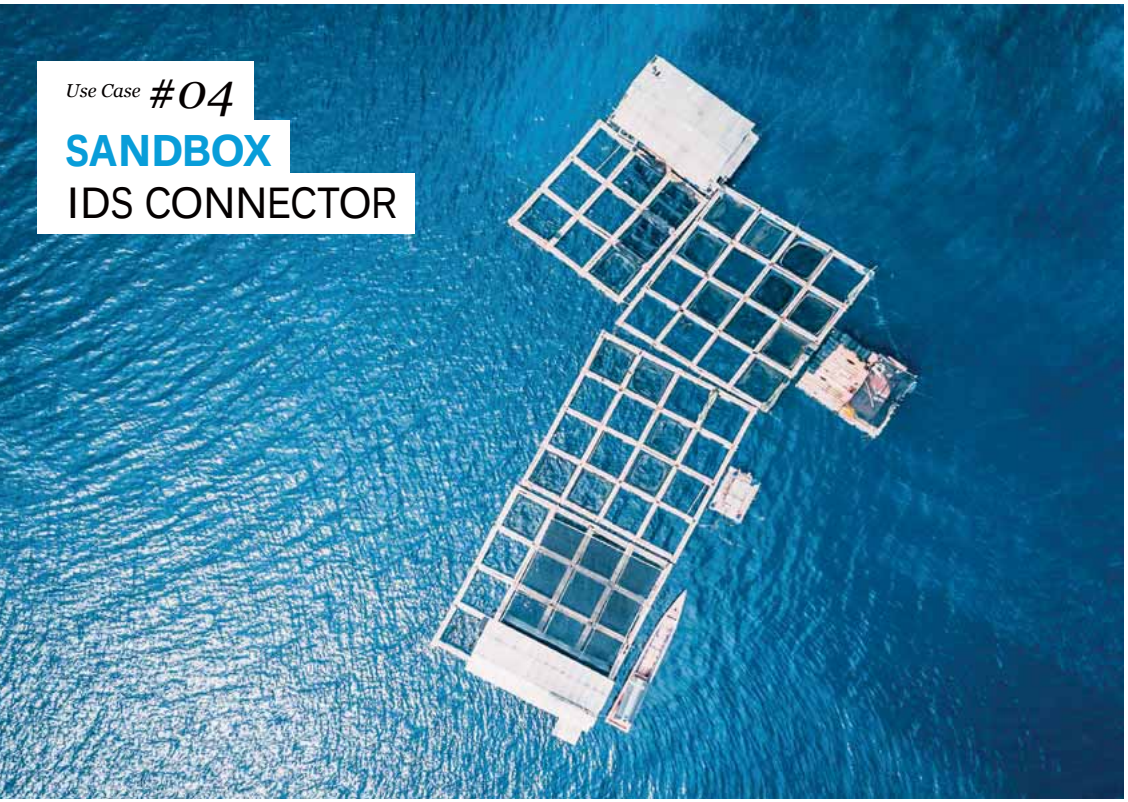
BENEFITS

» *Faster introduction of measures ensuring supply and therefore avoiding bottlenecks*

» *Raising transparency along the supply chain in case of risks*

Use Case #03

COLLABORATIVE SUPPLY CHAIN RISK MANAGEMENT



Use Case #04

SANDBOX
IDS CONNECTOR

Cybus

Manufacturing in the manufacturing industry, particularly discrete manufacturing, is largely automated, however, networking between machines belonging to different manufacturers in terms of Industry 4.0 rarely exists. To get into a position where companies can manage their machinery better and to increase productivity, they need more transparency for their own equipment and more control over any digital access external service providers have to their machines. To optimise their control over machines, many companies are working on their own software solutions: but programs that work on a small scale often cannot be implemented on a large scale. The topic of data security often falls by the wayside. For clarification: the biggest things blocking the roll-out of Industry 4.0 prototypes are the topics of data security and data governance.

The technological start-up Cybus provides a software solution for Industry 4.0 that guarantees secure and simple distribution and use of industry data in the manufacturing environment. For this purpose, Cybus has developed the Sandbox where the pre-installed software solution makes it as simple as possible for companies to access INTERNATIONAL DATA SPACES and thus implement secure data exchange. By means of the Sandbox, manufacturing companies can test their own use cases under real conditions – without having to build their own connector. This solution by Cybus is ideal for all industrial companies that want to exchange data via an IDS-compliant connector in order to benefit from digitisation. IDS provides a guideline and a secure basis for doing business with such data.

TARGETS

- Practical implementation of IDS Connector
- Fast, future-proof implementation of use cases under real conditions
- Data management and control of external data access

PARTNERS/ ECOSYSTEMS

- DXC Technology
- Fujitsu
- iTiZZiMO

MAIN TECHNOLOGY/ IDS COMPONENT

- IDS Connector
- Identity management
- Installation and support of the app store

BENEFITS

- *Secure and transparent data exchange beyond company borders*
- *Practical proof for the operability of the IDS Connector*
- *Data provision by implementing all relevant industry records*

DATA AHEAD

BENEFITS

» *Variety, volatility, volume, speed and ubiquity*

Data Ahead developed out of a system company for measurement, control and automation technology to become a specific provider of industrial mass data logistics. The company provides system integrators and application companies with specifically configured gateways, edge-computing and high-speed architectures. This logistics company for industrial data provides an innovative access architecture for the data management of renewable energy in the application scenario for "Renewable Energy Data Management - Readiness for Multi Stakeholding": a search engine for mass raw data that simultaneously guarantees variety, volatility, volume, speed and ubiquity. The architecture includes more than 2,500 edge devices and ensures users access to raw data in original granularity without compression or archiving – in less than a second. This architecture is built so that anybody who wants to do something with the data at a later point in time can correlate them completely freely. For example, network agencies that want to decide automatically and within seconds which field is to be fed by a local battery or wide area network. In future, this topic could be relevant for micro service providers and such providers in the Internet who build their business models on freely accessible raw data.

In the Industrial Internet of Things (IIoT) no company can depict the entire value-added chain on its own. This is only possible in collaboration with the best-in-class players that are part of INTERNATIONAL DATA SPACES.

TARGETS	PARTNERS/ ECOSYSTEMS	MAIN TECHNOLOGY/ IDS COMPONENT
» Provide stakeholders from any area with large amounts of raw data	» All companies that require mass raw data	» Exclusively a combination of open-source technologies

Use Case #05

RENEWABLE ENERGY DATA MANAGEMENT – READINESS FOR MULTI STAKEHOLDING

Use Case #06

PREDICTIVE MAINTENANCE AND PROCESS-ACCOMPANYING QUALITY ASSURANCE

"The requirements for guidelines for managing and using machine, operating and process data are continuously increasing. Organisations and companies are increasingly considering technologies and solutions that give them full, secure and flexible control over their data."

Jürgen Walter, CEO Datatroniq

DATATRONiQ

TARGETS

- The data gathered by DATATRON are configured with individual access guidelines and specifically transferred and used according to target group, purpose, region and period of time.

PARTNERS/ ECOSYSTEMS

- The application scenario is tested in cooperation with the company LEADEC Industrial Services. Target groups basically include companies that, for example, operate stationary and mobile machines in series production or in the energy industry and gather and use telemetry data for process optimisation or maintenance.

MAIN TECHNOLOGY/ IDS COMPONENT

- In addition to DATATRON (Smart Edge Computing), various infrastructure technologies are deployed, such as the Docker Container. This enables the flexible implementation of the solution at the users' site. The data transformation as well as rights and role administration were implemented with Open Source technology based on PostgreSQL and Scala Akka Streams.

BENEFITS

- *Development and use of individual guidelines that control data access*
- *Secure, reliable and appropriate use of telemetry data according to purpose (e.g. traceability, maintenance), business partners and customers*
- *Unlimited data sovereignty for the user and specific control of information flow*
- *Flexible processing and configuration of data and of the usage characteristics*
- *Protection against the transfer of sensitive data such as performance indicators and process know-how*
- *Development of effective requirements for data protection and confidentiality*

DATATRONiQ GmbH developed DATATRON, an intelligent device for data recording that collects and evaluates telemetry data from production machines and transfers them into cloud services. Operability is to be extended, depending on each respective purpose, so that the data to be transferred are supplemented by user profiles and authorisations and the access management that goes along with them.

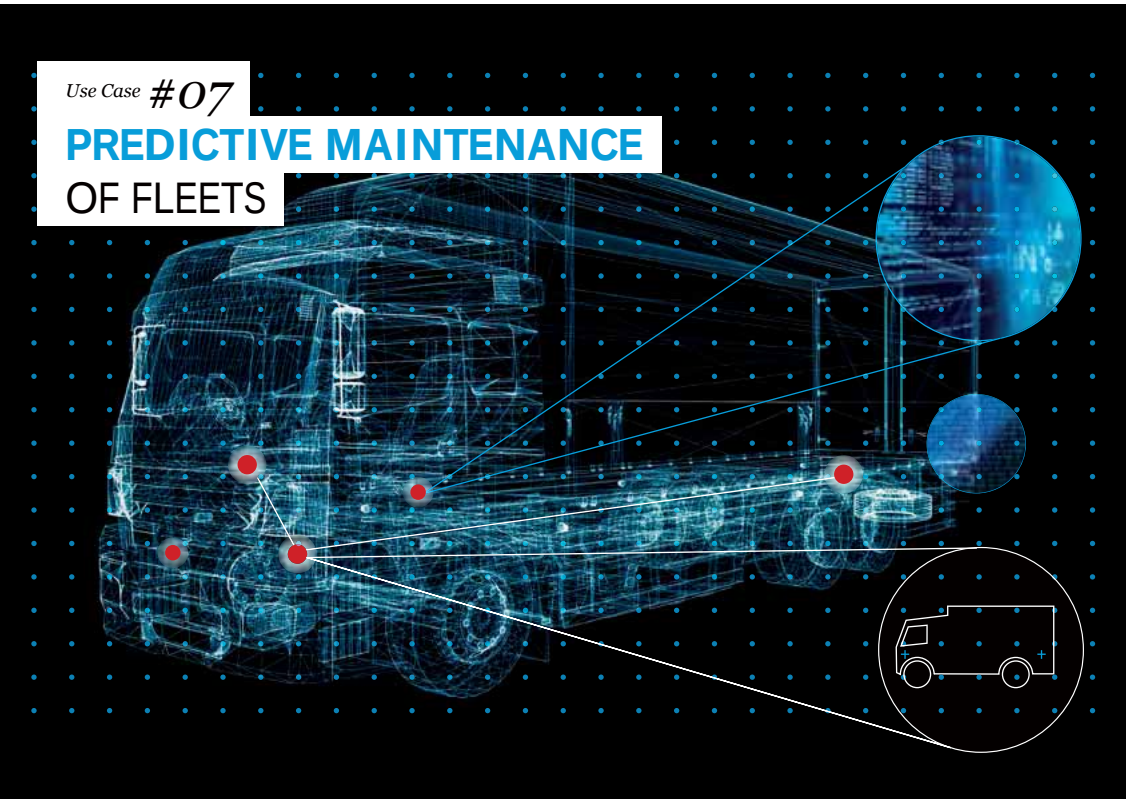
In this application scenario, an IDS Provider Connector is deployed as an intermediary between DATATRON, as the data source, and the consumers of data. The consumers can be external users or can be within the same organisation

As part of the use case, a number of IDS connectors were implemented. These are particularly suitable for telemetry data as they occur, for example, in the field of industrial series production. Particular attention was paid to a simple and flexible way of configuring the usage rights linked to the data – depending on the respective source and the planned user.

After acquiring machine, operation and process data (e.g. currents, moments, vibrations, fault messages and status information) DATATRON transforms and compressesthem as required before they are forwarded to the IDS Provider Connector. This in turn ensures that the data are automatically and continuously forwarded to external users. Always provided that the latter produce the necessary authorisations and follow the rules.

Use Case #07

PREDICTIVE MAINTENANCE OF FLEETS



TARGETS

- To increase the availability of commercial vehicles in the fleet
- To reduce operational costs
- To make additional information available for operators and users

PARTNERS/ ECOSYSTEMS

- Cities of Malaga and Porto
- Stratio Automotive
- FIWARE Foundation

MAIN TECHNOLOGY/ IDS COMPONENT

- IDS Connector
- App-Store
- IDS Broker

BENEFITS

- *Fewer vehicle breakdowns*
- *Operators of the car pools are always informed about operating conditions*
- *Locating single vehicles for citizens and companies*

Maintaining vehicles, not at fixed intervals, but according to predictive necessity – this is what the topic "Predictive Maintenance" is about. In this use case, vehicle parameters are used to avoid technical breakdowns and therefore to increase availability. The IDS FIWARE architecture enables secure data exchange between vehicles and fleet operators to improve predictive maintenance for vehicles. The hardware component from Stratio Automotive, which is installed in the vehicles, transmits information such as the actual engine temperature or the battery charge status to the server. This is where the true intelligence of the system is. The server matches the current data with recorded data and complements them with further data about weather conditions, fine dust pollution or traffic situations. By matching these data, the system generates new information. In this way, problems are identified before they occur. If the system recognises a potential mechanical error, it issues information in real time. The fleet management and the service station know which vehicle requires repairing at which location even before the driver arrives at the depot. The merging and controlled exchange of data from different areas are guaranteed via the IDS Connector. Thanks to IDS, participants can only use the confidential information if they are authorised to do so.

All operators, and even users of vehicle fleets, can benefit from the FIWARE use case "Predictive Maintenance of Fleets". In this way, for example, passengers using a transport company can use apps to track the exact position of their bus.

Fraunhofer

New materials play a significant role in the development of innovative products. To be in a position to develop, produce and process materials more quickly, companies require a central platform that facilitates secure data exchange: the “Materials Data Space” provides cross-company digital information about materials and components along the entire value added chain. For example, companies receive information about the origin of the material, about certifications or possible damage by means of a digital material-twin. This is particularly useful in complaints management in the automotive industry. If a vehicle suffers engine damage, for example, it is often difficult to find the cause. By means of the digital material-twin, the automotive manufacturer will in future be able to exactly trace back the supply chain for all the 1,500 different components in the combustion engine. The digital twin of the spare part that is necessary for the repair also provides detailed information about the history of the component. Its virtual prototype also gives information about whether this component will withstand future loads. The “Materials Data Space” is also relevant for companies from other areas, e.g. for manufacturers of medical products or for the aerospace industry, and in general for industries that develop security-relevant components. To be in a position to make use of these benefits, companies must transfer the digital file of their products and with that also key competencies to others. That entails risks. Thanks to the secure IDS architecture, however, the companies participating in information exchange retain control over their data. Companies can transfer relevant parameters to their partners without passing on their core know-how.

BENEFITS

» *Develop virtual prototypes and therefore implement innovations more quickly*

TARGETS

» To set up a digital material-twin throughout its entire life cycle

PARTNERS/ ECOSYSTEMS

» Verband Deutscher Maschinen- und Anlagenbau VDMA (German Engineering Association)

» Deutsche Gesellschaft für Materialkunde DGM (German Materials Association)

» Carl Zeiss

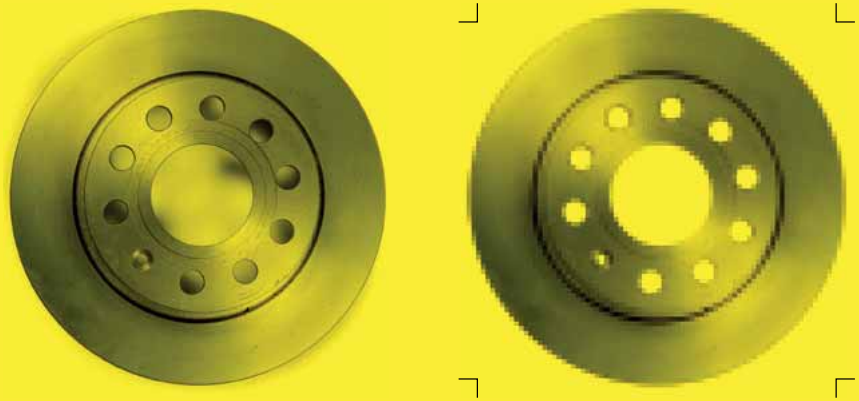
MAIN TECHNOLOGY/ IDS COMPONENT

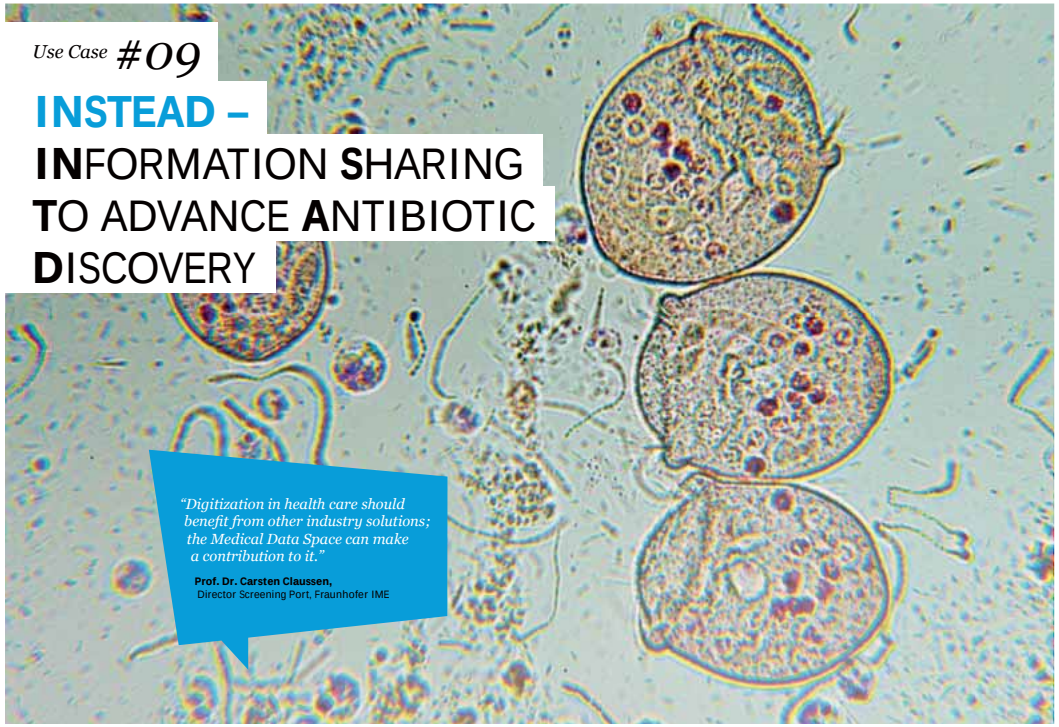
» Internal IDS Connector

» External IDS Connector

Use Case #08

MATERIALS DATA SPACE





Use Case #09

INSTEAD – INFORMATION SHARING TO ADVANCE ANTIBIOTIC DISCOVERY

"Digitization in health care should benefit from other industry solutions; the Medical Data Space can make a contribution to it."

Prof. Dr. Carsten Claussen,
Director Screening Port, Fraunhofer IME

Fraunhofer

BENEFITS

- *Sharing defined results in a certified community*
- *Centralised broker system*
- *Ontology-based search*

TARGETS

- To implement both an extraction and analysis process for biological and clinical data
- To connect different partners with their data bases and samples

PARTNERS/ ECOSYSTEMS

- Fraunhofer
- GRIT42
- Lundbeck (Innovative Medicine Initiative New Drugs4BadBugs)
- GSK (Innovative Medicine Initiative New Drugs4Bad-Bugs)
- Jacobs University (Innovative Medicine Initiative New Drugs4BadBugs)

MAIN TECHNOLOGY/ IDS COMPONENT

- Internal IDS connectors
- External IDS connectors
- Brokering system combined with IZI metadata interface

The exchange of health data and research data, in particular, offers a lot of potential for improving patient care and medical research. It often fails however because of the lack of access possibilities – either for technical or regulatory reasons. Digitisation in medicine offers opportunities by means of innovative IT solutions to secure the exchange and evaluation of medical data beyond institutional borders.

The essential elements of the IDS architecture can also be deployed in the health care sector. On the basis of INTERNATIONAL DATA SPACES, the Medical Data Space in which companies like Boehringer Ingelheim, BBraun or SAP are actively participating is suitable for providing trustworthy access to research or personal data. The certification of participants guarantees a common understanding and a highly ethical and legal standard when sharing and using data.

The application scenario "INSTEAD" revolves around data access in antibiotics research. Due to the emergence of new antibiotic resistances and research following more and more complex approaches, tasks are spread out between highly specialised scientists at different institutions: experts that have medical and biological expertise, biological material or for example clinical studies. To guarantee the regulated and controllable exchange of data and results between scientists, a platform with decentralised data stocks is required that facilitates secure exchange. By deploying the IDS components, data scientists have, for example, access to both the results of different studies or to clinical biological material. The data owner always has control over any access to their data.

nicos AG

BENEFITS

» *Key component of the entire IDS architecture*

nicos AG connects globally operating companies to their international locations and production sites via secure global data networks. In addition to strategic planning, network design and the provision and setup of all network components, nicos takes care of the reliable operation of customer networks.

For INTERNATIONAL DATA SPACES the company provides one of the key components of the entire IDS architecture: the IDS Identity Provider. Only because of this crucial component are the participating connectors able to authorise and authenticate themselves. The user has to prove their identity to the system. Only then can it communicate with other users. The data provider has information that it makes available to other participants in INTERNATIONAL DATA SPACES. Thanks to the IDS Identity Provider, these data are only exchanged if certified partners request them. All participants retain sovereignty over their own data at all times.

TARGETS

- To provide additional attributes
- Authentification
- Authorisation

PARTNERS / ECOSYSTEMS

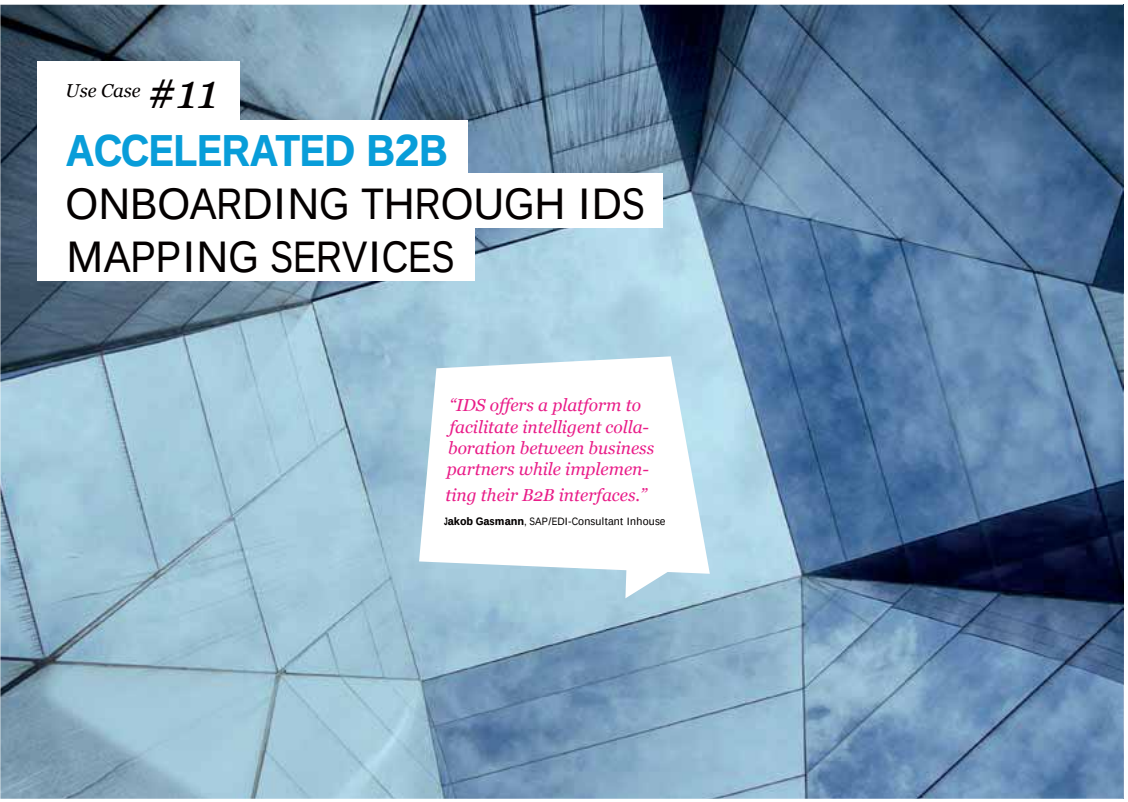
- Ceisco
- IDS

MAIN TECHNOLOGY / IDS COMPONENT

- IDS Connector
- IDS Identity Provider

Use Case #10

IDENTITY PROVIDER IN THE ENVIRONMENT OF IDS



Use Case #11

ACCELERATED B2B ONBOARDING THROUGH IDS MAPPING SERVICES

"IDS offers a platform to facilitate intelligent collaboration between business partners while implementing their B2B interfaces."

Jakob Gasmann, SAP/EDI-Consultant Inhouse

SALZGITTER AG Stahl und Technologie

Companies that maintain business relations with each other need to exchange data and news during their work together, for example when ordering steel. They use their IT systems for this but the different systems usually use different languages. The person who sends the message decides on the data content, so determines the language it is sent in. The recipient then has to translate the message so its systems can use it. Companies have to put in a lot of effort to decode each message from their business partners so that their systems can read the messages automatically. This bilateral mapping takes a lot of time and thus incurs a lot of costs for the companies. To make sure they retain data sovereignty the companies do not hand over control of their mappings. Under certain conditions, companies could benefit from exchanging their mapping logic to help them work more efficiently.

In the application scenario "Accelerated B2B Onboarding through IDS Mapping Services", certified companies can access modular mapping services by other communication partners via a central, IDS-compliant platform and use them for their own processes. If these mappings are used comprehensively, the bilateral coordination effort is reduced and connection speeds increase dramatically. The INTERNATIONAL DATA SPACES architecture guarantees that the companies participating in this exchange retain the sovereignty over their own data.

BENEFITS

- *Reducing the effort needed for technical connections/integration projects*
- *Fast integration of business processes between companies*
- *Exploitation of new communication partners and business models*

TARGETS

- To create an accelerated and open process for more intelligent networking of partners

PARTNERS/ ECOSYSTEMS

- Deutsche Telekom
- Mannesmann Line Pipe GmbH
- Salzgitter Flachstahl GmbH

MAIN TECHNOLOGY/ IDS COMPONENT

- Internal and external IDS Connectors
- Broker
- App Store

Use Case ***#12***

PREDICTING LEAD TIMES

SETLOG
The Smart Connective

TARGETS

- To forecast the possible arrival time of a transport/ delivery by means of Data Analytics
- More transparency in goods transport and goods delivery
- Optimised coordination of all connected processes

PARTNERS/ ECOSYSTEMS

- Telekom
- Logata
- Jack Wolfskin

MAIN TECHNOLOGY/ IDS COMPONENT

- Broker / T-Systems & DIH
- Setlog-OSCA® as IDS Connector

BENEFITS

- *Efficiency in planning processes*
- *Reduction of planning insecurities and slack times in the supply chain*
- *Optimisation of capacity and resources planning*

SETLOG, together with OSCA®, develops tailor-made SCM and VCM software. Many of the software developer's customers come from the textile and consumer goods industry: companies that buy and produce goods globally. Because of individual customer requirements, reduced product life cycles and increasingly volatile demand, companies are being put under more and more pressure. When delivering their products, however, they still rely on planning data as no real-time data are available. This complicates the control of the processes that are part of procurement and distribution logistics. It is difficult to predict when goods will actually arrive at their destination. That leaves little scope for planning further steps, such as door and warehouse planning or (pre-) order picking. The resulting planning uncertainties lead to increased buffer times in the supply chain. The consequence is a lack of transparency influencing further processes and therefore invalid planning for goods deliveries. Delayed deliveries cost time, money and resources.

The application scenario "Predicting Lead Times" aims to plan supply chains in an intelligent and cost- and process-optimised way. Transport data from the past are combined with planning data from the enterprise resource planning system, actual data from OSCA® and public data in order to obtain an exact statement of transport time and delivery time. INTERNATIONAL DATA SPACES helps the companies involved in the supply chain to connect to each other. The data gathered for the companies are anonymised in the process so that they do not disclose any company secrets but nevertheless offer added value for other companies. The participating companies and their data are protected by the IDS architecture.

SIEMENS
Ingenuity for life

To remain competitive, the manufacturing industry must constantly improve: by optimising processes, reducing costs and satisfying their customers all at the same time. The use case "Industry 4.0 Demonstrator: Asset Administration Shell Live Experience" helps companies to improve their value added chain in production. At the first level of the application scenario for example, a bottler is looking for a company that produces different shaped bottles for them. The request is processed via a digital business marketplace that works as an intermediary. The bottler selects the appropriate offer from the suppliers for bottles that offer their products via the IDS-compliant marketplace and concludes a master agreement with the respective supplier. Both the bottler and the supplier are interested in a long-term mutual business relation to create the basic conditions for improving their respective production processes. A commission fee is paid to the operator of the digital marketplace.

In order to optimise the cooperation and processes of both the bottler and the supplier, the second level of the use case becomes effective: the integration of a forecast provider. For example, live production data from the bottler are exchanged to facilitate on-demand bottle production. In addition, the digital marketplace provides data sources that are used by the forecast provider to put it in a position to reliably forecast the market for the final product of the bottler. The implementation of the "Data Intelligence Hub" established by Deutsche Telekom on the basis of the INTERNATIONAL DATA SPACES reference architecture model makes sure that the participating companies constantly retain control over their own sensitive data when exchanging information.

BENEFITS

- *Larger and more simplified access to potential suppliers in goods purchasing*
- *Optimising the production process*
- *Establishing the forecast provider as a new business player in the manufacturing industry environment*

TARGETS

- To illustrate the significance of data value chains
- To develop a business scenario in the environment of manufacturing industry
- To implement an IDS reference architecture in combination with an Industry 4.0 administration shell

PARTNERS/ ECOSYSTEMS

- Telekom
- Siemens
- The manufacturing industry

MAIN TECHNOLOGY/ IDS COMPONENT

- IDS Connector
- Broker
- Demonstrator of platform Industry 4.0

Use Case #14

TELEKOM DATA INTELLIGENCE HUB

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TARGETS

- Secure data exchange between companies and partners to establish a data supply chain
- Data sovereignty, control and transparency
- Secure working environment for data-driven business innovations
- Monetisation of data

PARTNERS/ ECOSYSTEMS

- Technology partners
- Implementation partners
- Solution providers

MAIN TECHNOLOGY/ IDS COMPONENT

- IDS Connector
- IDS Broker
- IDS App Store

BENEFITS

- *Secure and controllable data exchange including administration of user rights*
- *Secure working environments for analysis tools to develop data-driven products and services*
- *Simple search and use of data beyond company borders*
- *Imparting data offer and data requirements between data providers and data users*
- *All-in-one solution for programmers, data engineers, data journalists and data scientists that are interested in data analysis*
- *Optional storage of data in a secure cloud*
- *Certified as "ready" for IDS*

Partners in a value-added chain often lack transparency, security and trust with respect to the use of their data. For example, the companies involved in production, sales and distribution (supply chain) do not pass on important information to their business partners for fear of losing data and control. Companies could reduce costs and increase the quality of their products by means of precise information. To achieve that target, larger companies work on their own solutions, however, smaller and medium-sized companies often fall by the wayside.

Telekom wants to facilitate data access with the product "Telekom Data Intelligence Hub" by encouraging and enabling companies to exchange their data via a secure business marketplace according to the principles of INTERNATIONAL DATA SPACES. "Telekom Data Intelligence Hub" is intended to serve as a digital connection between companies and be both a source for commercial data acquisition and open data. The platform offers users tools for analysis in addition to acquisition, exchange and processing of data. Industry experts, e.g. programmers, data engineers, data journalists and data scientists, get the possibility to develop new business models, data-driven products or services. "Telekom Data Intelligence Hub" is relevant for companies of different sizes and industries but also for universities, for example, that develop models for the combination of data and algorithms to attain new insights. To achieve this, INTERNATIONAL DATA SPACES provides the reference architecture that facilitates the secure and sovereign exchange of sensitive data.

DATA –
THE RAW MATERIAL FOR OUR ECONOMY

BUSINESS MODELS DEVELOP OUT OF DATA, VALUES DEVELOP OUT OF BUSINESS MODELS, AND GROWTH AND PROSPERITY DEVELOP OUT OF VALUES. INTERNATIONAL DATA SPACES PRESERVES THE DIGITAL SOVEREIGNTY OF DATA OWNERSHIP AND FORMS THE BASIS FOR SMART SERVICES AND INNOVATIVE BUSINESS PROCESSES WORLDWIDE. IT IS AN ECOSYSTEM IN WHICH DIFFERENT PARTICIPANTS CAN PLAY BY THEIR OWN RULES SO THEY CAN IMPLEMENT THEIR BUSINESS MODELS AND PROTECT THEIR OWN INTERESTS – AND THOSE OF THEIR CUSTOMERS.

ADVANTAGES
OF MEMBERSHIP

- ✓ *Implement use cases*
- ✓ *Drive global standardisation forwards*
- ✓ *Develop architectures*
- ✓ *Design sustainable business models*

BECOME A MEMBER → www.industrialdataspace.org

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