INDUSTRIAL DATA SPACE ASSOCIATION SUMMIT TO CELEBRATE PREMIERE IN 2018

IDSA AND MTC: NEXT STEPS TOWARDS AN IDSA HUB IN UK

IMPRESSIVE EXHIBITION PREMIERE AT IOT SOLUTIONS WORLD CONGRESS
CONTENT

EDITORIAL
OVERALL PROJECT MEETING:
FOCUS ON THE WORK ABOUT USAGE CONTROL AND CERTIFICATION // 05
LEAD ARCHITECT IN THE INDUSTRIAL DATA SPACE ASSOCIATION // 05

NEWS
INDUSTRIAL DATA SPACE ASSOCIATION SUMMIT TO CELEBRATE PREMIERE IN 2018 // 06
IDSA BOARD MEETS AT SICK AG // 07

ABOUT THE ASSOCIATION
NEW MEMBERS SUPPORT INDUSTRIAL DATA SPACE // 08
3 QUESTIONS FOR... OSCAR LAZARO, MANAGING DIRECTOR INNOVALIA ASSOCIATION // 09

IDSA INTERNATIONAL
IDSA AND MTC: NEXT STEPS TOWARDS AN IDSA HUB IN UK // 10
IDSA IMPROVES IMPACT OF MANUFACTURING INDUSTRY DIGITAL INNOVATION HUB // 10
BOOST 4.0 INITIATIVE INVOLVES 50 PARTNERS FROM 16 COUNTRIES // 11

IDSA ON THE ROAD
IMPRESSIVE EXHIBITION PREMIERE AT IOT SOLUTIONS WORLD CONGRESS // 12
GERMAN LOGISTICS CONGRESS 2017: IDSA INVITED DELEGATES TO THE INNOVATION LOUNGE // 14
DEMONSTRATOR SHOWCASES PRACTICAL APPLICATION OF IDS AT SPS IPC DRIVES // 15
ON THE WAY TOWARDS AN INTERNATIONAL DATA SPACE // 16

TECHNICAL INSIGHTS
OFFICIAL PRESENTATION OF THE FIRST PROTOTYPE OF THE TRUSTED CONNECTOR // 18
FINAL SPRINT OF USE CASE LOGISTICS CONCLUDED // 18
NEW GUIDELINE PUBLISHED FOR INDUSTRIAL DATA SPACE CONNECTOR // 19
SOURCE CODE OF IDS INFORMATION MODEL UNDER DEVELOPMENT // 20

ABOUT THE WORKINGGROUPS
SALZGITTER AND ADVANCED AGREE TO PILOT CERTIFICATION // 21
USE CASE DEVELOPMENT CYCLE PUBLISHED // 21
WG ARCHITECTURE ADDRESSES CONNECTOR SPECIFICATION AND SECURITY PROFILE // 22
USE CASES & REQUIREMENTS WORKING GROUP IS RESTRUCTURING // 22

PROSPECTS
IMPORTANT STEPS TOWARDS COOPERATION WITH PLATTFORM INDUSTRIE 4.0 // 23

POINT OF VIEW
WHAT IS DIGITAL IDENTITY? A POINT OF VIEW BY JÖRG LANGKAU // 24

IDSA INTERACTIVE
BEST TWEETS // 25
MEMBERS EXPLAIN WHY THEY JOINED THE IDSA // 26

EVENTS
CES CONGRESS PRESENTING INNOVATIONS IN IOT // 29
SPECIALIZED LECTURES ABOUT INDUSTRIAL DATA SPACE PLANNED FOR HANNOVER MESSE // 29
Dear Reader,

more than 80 companies, initiatives and institutions have now become committed members in the Industrial Data Space Association. Together we are working towards the common goal of sovereign data exchange that works reliably beyond company, domain and country boundaries. You can find out about the steps we have already taken successfully on the way towards this in the second edition of our Data Spaces_Now! magazine. With the latest news and announcements, we would like to tell you about the most recent developments in Industrial Data Space and give you an insight into the ideas behind it.

We have been presenting and sharing this idea of Industrial Data Space throughout Europe even more in the past twelve months. We succeeded in this, for example, by means of numerous presentations and appearances at congresses and exhibitions. But also with future-oriented cooperations with renowned companies and initiatives in countries like the Netherlands, Spain, Finland and Great Britain. In this way, together, we can establish international anchor points for Industrial Data Space and create the basis for gradually and smoothly putting the research results, reference implementations and insights from the use cases into practice. You can read more about this on the next pages.

In future, other important milestones will be waiting for us: currently, we are at a threshold as we move on from having an impressive and universally accepted idea towards having functioning business-relevant eco-systems with which sovereign data exchange can now finally become the core for optimised and new business models. One example of Industrial Data Space is about to go live, and at the Hannover Messe we will experience many new, impressive use cases that will demonstrate the key value proposition of Industrial Data Space. As you can see, there are many topics and lots of news and information about Industrial Data Space. We are looking forward to taking you on part of this exciting journey with our newsletter and our magazine.

I hope you enjoy looking through Data Spaces_Now!

Yours

Lars Nagel
Managing Director
Industrial Data Space Association

Editorial

The work being carried out on the information model and about usage control was the focus of the IDS overall project meeting in the middle of December. Both elements will be updated in the new reference architecture document that is to be published at the Hannover Messe 2018. There will now be a use case for usage control as well, that will also be presented for the first time at the world’s leading trade fair for industry.

Work on certification is progressing well, too. The first companies and the Trusted Connector have now been evaluated in the context of pilot certifications. IDSA member T-Systems is currently one of the first to undergo certification and the plan is to integrate more participants to test the certification.

Sebastian Steinbuß is Lead Architect in the Industrial Data Space Association (IDSA) since June 2017. He supports the working group architecture and the exchange between the working groups and Task Forces in the IDSA. Further he coordinates the IDSA Steering committee.

Sebastian Steinbuß studied Computer Science and Mechanical Engineering at the Technical University in Dortmund. Afterwards he started his work at the Fraunhofer Institute for Software and Systems Engineering (ISST) as Scientist. He was involved in the development of the Logistics Mall and led the Research Project Service Design Studio at the EﬃzienzCluster LogistikRuhr. His main focus was the development of Cloud Solutions in industry scale at Fraunhofer ISST. He is the head of the area Business Cloud Solutions of the Fraunhofer Innovation Centre Logistics and IT in Dortmund.

Facing the challenges of digitization he developed the methodologic framework Digital Business Engineering together with Prof. Boris Otto. This framework is applied in different domains like retail, insurance, smart devices and smart services.

Sebastians Steinbuss main interests are in distributed enterprise scale architectures, rapid software prototyping and Requirements Engineering.
The board of the Industrial Data Space Association all headed to Waldkirch for their board meeting in the middle of October. The meeting was hosted by SICK AG, who have been IDSA members from the very beginning. After a tour of the company, led by Managing Director Dr. Robert Bauer himself, and dinner, the meeting took place on the company premises the next day, 17 October. One topic of the agenda was the next General Meeting to be held in March 2018.

NEWS

INDUSTRIAL DATA SPACE ASSOCIATION SUMMIT TO CELEBRATE PREMIERE IN 2018

Innovative event format gets members involved

A new event format will be premiered in March 2018: at the Industrial Data Space Association Summit to be held in the PwC Experience Center (Frankfurt am Main) for two days from 22 to 23 March 2018, the focus will be on the development and objectives of Industrial Data Space, and on its members as well. The summit is a chance to get to know more about the user association and the research projects, to actively participate in developments and to continue pushing the internationalisation of Industrial Data Space. Not only does the general assembly take place during the summit, several workshops, speed dating and a newbie session are also on the agenda, the details of which are currently being refined.
Why are you involved in the Industrial Data Space Association?

Right from the first time we came across the Industrial Data Space concept and project we were immediately attracted by it and the role it could play in leveraging the potential of Big Data and analytics in an industrial context. Industrial data tends to be very sensitive and it is usually spread across many stakeholders. In order to create a competitive advantage out of such a quantity of data, it is very important that a clear data governance mechanism is in place ensuring that the data generated by a system or a platform remains under the full control of its owner. Otherwise, data-driven digital business models in the industrial context will be very limited. That is why Innovalia was one of the pioneers of IDS in Spain and still remains one of the most active supporters and promoters of IDS at European level.

What is special about the Industrial Data Space and working together in the user association?

It is special because it brings together the required data-centric expertise driven by clear manufacturing use cases motivating the development of IDS specifications. However, IDSA does not stop there, it is making a very intense effort towards achieving certification and contributing towards standardising activities. That will make it possible for digital manufacturing platform developers involved in IDSA to use such technologies as part of their industrial solutions. Growing this German initiative on a European scale with initiatives such as the BOOST 4.0 European Industrial Data Space is just one example of how such collaborations can really mobilise European industry with a common goal.

Industrial Data Space in ten years’ time: What should we have achieved together by then?

In ten years, we should be in a position for digital manufacturing platforms and manufacturing equipment to benefit from IDS specifications and to build smarter and more efficient industrial services exploiting the controlled and trusted exchange of data. IDSA should aim at becoming the open data backbone for implementing the extensive digital business models that will sustain and enhance the competitiveness of our European industry.

NEW MEMBERS SUPPORT INDUSTRIAL DATA SPACE

User Association now numbers around 80 member companies.

The Industrial Data Space Association is not only a (positive) talking point at exhibitions and congresses, it continues to convince companies and institutions in Europe and the whole world to support the idea of a secure and sovereign Industrial Data Space. More than 80 members are currently signed up to the User Association and contribute their requirements and ideas for practice-oriented implementation. The latest new members include the Manufacturing Technology Centre (MTC) located in Coventry (Great Britain) that develops and tests innovative production processes and technologies, the Czech Technical University in Prague as a new member is also committed to the development of Industrial Data Space, as are the Forschungszentrum L3S (Research Centre L3S) from Hannover and the Netzwerk Geoinformation der Metropolregion Rhein-Neckar e.V. (Network for Geoinformation in the Metropolitan Region Rhine-Neckar) (GeoNet.MRN).

You can find more information about members in the Industrial Data Space Association and download the membership application here.
After cooperations with companies and initiatives in Spain, Finland and the Netherlands, the Industrial Data Space Association continues to push for cooperation with the Manufacturing Technology Centre (mtc) in Great Britain.

The independent research institution has been a member of the Industrial Data Space Association since 2017. The plan is to establish an IDSA hub in UK together: “With mtc we have a reliable and innovative partner who can act as a nucleus and contact partner for local companies in this country”, Lars Nagel, Managing Director of the Industrial Data Space Association, explains the shared objective. “In Great Britain there is a very vibrant aviation and automotive industry. We have already developed some ideas for use cases focusing on Industry 4.0.”

Currently, the Manufacturing Technology Centre is working together with the IDS user association, several Fraunhofer institutes and with companies at Amable, an EU research project, to which the organisation contributes its expertise on the topics of Industry 4.0 in general, and 3D printing technology in particular. “To cooperate closely in a practice-oriented way right from the beginning of our alliance is a big advantage for further development”, emphasises Lars Nagel, who sees great potential for further successful projects. “In Great Britain there is a very vibrant aviation and automotive industry. We have already developed some ideas for use cases focusing on Industry 4.0.”

**IDSA IMPROVES IMPACT OF MANUFACTURING INDUSTRY DIGITAL INNOVATION HUB**

On October 3rd-4th, the kick-off meeting for the MIDIH (Manufacturing Industry Digital Innovation Hub) project was held at the offices of EIT DIGITAL. MIDIH is an H2020 Innovation Action in the Factories of the Future Public Private Partnership, implementing Phase III of the I4MS (ICT Innovation for Manufacturing SMEs) Digital Innovation Hub programme.

The major aims of the project are:

- to build a pan-EU network of DIHs in the domain of CPS/IoT for manufacturing;
- to integrate a data-driven open platform for implementing smart factory, smart product, smart supply chain industrial scenarios;
- to experiment with and pilot the platform in several industrial use cases, some of them provided by the MIDIH beneficiaries, others coming from open calls which will be issued starting from spring 2018.

The MIDIH project, on the one hand, continues along the lines of the previous phases of I4MS but, on the other hand, it also opens up some significant new and innovative topics. The presence of IDSA in MIDIH has in fact positively stimulated the introduction into the whole I4MS programme of particular innovation topics in each of the three main MIDIH pillars. IDSA, a pan-EU ecosystem of more than 80 members, will dramatically improve the impact of MIDIH especially in the big data and cybersecurity communities. Moreover, open source FIWARE-based implementations of the IDS Reference Architecture will substantially enrich the MIDIH open platform value proposition.

Finally, a data sovereignty industrial use case supported by IDSA will complete the spectrum of Industry 4.0 scenarios in I4MS, adding the smart lifecycle and smart supply chain dimensions to the smart factory dimension which dominated the previous I4MS phases.

**BOOST 4.0 INITIATIVE INVOLVES 50 PARTNERS FROM 16 COUNTRIES**

Boost 4.0 is the biggest European initiative in Big Data for Industry 4.0. With a budget close to 20 million euros and leveraging over 100 million euros of private investment, Boost 4.0 will lead the construction of the European Industrial Data Space to improve the competitiveness of Industry 4.0 and guide the European manufacturing industry in introducing Big Data in the factory, providing the industrial sector with the necessary tools to obtain the maximum benefits from Big Data.

Boost 4.0 is led by Innovaalia and involves 50 partners from 16 countries, including IDSA and many of its partners, in making a concerted effort by equipment providers, digital platform providers, data analytics software providers, the manufacturing industry, standardisation bodies, certification service stakeholders and digital innovation multipliers.

Boost 4.0 will demonstrate an open, certifiable and highly standardised data-driven Factory 4.0 model in a realistic, measurable, and replicable way. Boost 4.0 will also demonstrate how European industry can build unique strategies and competitive advantages (significantly increasing operational efficiency, E2E manufacturing planning and delivering an improved smart product customer experience, and fostering new digital business models; e.g. outcome-based and product servitisation) through big data across all phases of product and process lifecycles (engineering, planning, operation, production, and after-market services) building upon the Boost 4.0 connected smart Factory 4.0 model to meet the challenges of Industry 4.0 (lot size one distributed manufacturing, the operation of zero defect processes & products, zero breakdown sustainable operations, agile customer-driven manufacturing value network management and human centred manufacturing).

Boost 4.0 aims at delivering:

- Global standards, contributing to the international standardisation of European Industrial Data Space data models and open interfaces aligned with the European Reference Architectural Model Industry 4.0 (RAMI 4.0).
- Secure digital infrastructures, adapting and extending cloud and edge digital infrastructures to ensure high performance operations for the European Industrial Data Space; i.e. supporting high-speed processing and the analysis of huge and very heterogeneous industrial data sources.
- Trusted big data middleware, integrating the four main open source European initiatives (Industrial Data Space, FINWARE, Hyperledger, Big Data Europe) to take care of the development of open connectors and big data middleware with native blockchain support in the European Industrial Data Space.
- Digital manufacturing platforms with open interfaces for the development of big data pipelines for advanced analysis services and data visualisation supported by the main digital engineering, simulation, operations and industrial quality control platforms.
- Data connector certification, contributing to the establishment of European certification programmes for equipment, infrastructures, platforms and big data services so they can be operated in the European Industrial Data Space.

Boost 4.0 European Industrial Data Space and big data services will be deployed and assessed in 10 lighthouse factories at the main European manufacturing leaders (VW, FCA, VOLVO, VW AutoEuropa, Benteler, Gestmap, Philips, Whirlpool, Fill, Georg Fischer) divided into three strategic economic sectors (automotive, manufacturing equipment and household appliances) and adopted by three replication factories in traditional and highly regulated manufacturing sectors (textile, ceramics, aero).
Companies like Microsoft, Google, Intel, Telekom and Deloitte as exhibitors, more than 250 speakers from industry, business and research and about 13,000 visitors from 114 different countries – the IoT Solutions World Congress in Barcelona was a great success for the organisers. The Industrial Data Space Association can also draw a thoroughly positive conclusion after its premiere as an exhibitor at one of the leading IoT exhibitions in Europe. “The number of visitors at our booth and the feedback we got about our idea and the previous successes of Industrial Data Space was fantastic”, Lars Nagel, Managing Director of the Industrial Data Space Association, looks back at the exhibition in Spain with satisfaction.

At their 30 square metre booth, the User Association demonstrated the cornerstones that have already been achieved together with the member companies Cybus, Fraunhofer ISST, MSG Group and Nicos in a vivid and practice-oriented way. One exhibit about the reference use case Logistics, for example, showed how applying Industrial Data Space can work in logistics and how it is able to optimise processes sustainably – for example in the supply chain.

With a constellation of 1,500 LED lamps, Cybus impressively showcased how data can be distributed in real time between manufacturing and cloud with Cybus Connectware. The MSG Group presented their myData platform, a data broker for data-centred business models. The fact that Industrial Data Space can be a solution for sovereign data exchange for companies worldwide, was underlined by the IDSA member thyssenkrupp at IoT with a film specifically produced for the exhibition: “The solution is Industrial Data Space”.

There was another practical example of a very successful cooperation at the IoT Solutions World Congress: Directly next to the Industrial Data Space Association’s booth, the FIWARE Foundation also had their stand. They would like to deploy the first open source implementation of Industrial Data Space.

Whereas everything was running smoothly inside the exhibition halls, the current political events in Spain affected arrivals and departures. Strikes and demonstrations subsequent to the Catalan independence referendum of 1 October 2017 partly stopped the traffic and public transport. Transport with busses, underground and cabs was only guaranteed for one hour before and one hour after the beginning of the exhibition. Participants who wanted to be more flexible needed to be more imaginative: Uwe Brettner, Managing Director of nicos AG, and Jörg Langkau, Managing Director of nicos Research & Development GmbH, quickly decided to rent bikes as the best way to get to the exhibition halls.
“Think new – live digital”: the motto of this year’s German Logistics Congress which took place in Berlin from 25 until 27 October encouraged companies to establish digitization in their daily routine. Industrial Data Space is an important condition for achieving this objective, providing sovereign data space for secure data exchange beyond both company and country boundaries. In this context, the Industrial Data Space Association presented Industrial Data Space as the basis for new and future-oriented business models in the Innovation Lounge at the InterContinental Hotel Berlin, where they also made new business contacts and gained even more members for the user association.

The focus of their joint appearance at the fair, together with Effizienzcluster Management GmbH and the Digital in NRW - SME 4.0 Enabling Centre, was clearly on the Digital.Hub Logistics Dortmund: this platform for companies and founders encourages the growth of innovative, digital logistics and production services as future-oriented business ideas. The visitors to the Innovation Lounge could learn about and experience how these are developed, tested and successfully implemented in Digital.Hub Logistics.

How can the Industrial Data Space reference architecture models and connectors be successfully implemented and deployed in practice? These questions were answered by a demonstrator which was presented by IDSA member Siemens at the international trade fair for electrical automation SPS IPC Drives in Nuremberg at the end of November.

At the booth for Labs Network Industry 4.0 LNI 4.0 and the Industrial Data Space Association, together with other participating companies Siemens, Pepperl&Fuchs and evosoft presented the results of a practical test of the Industrial Data Space concepts in an implementation of the reference architecture models for connectors and the information model for Industrial Data Space.

This demonstrator was an extension of the presentation at the Hannover Messe 2017 which showcased a filling station with an administration shell based on openAAS (ZVEI research-project “open Development of asset administration shell”). This was enhanced with IDS-compliant communication between the station and the supplier of a filling level sensor, Pepperl&Fuchs. Because a liquid in the filling process and the design of the bottles have been changed, the filling level sensor needed to undergo recalibration, the requirements of which were provided to the supplier by the station and the recalibration dates were then provided back to the station against payment. In this way it was possible to show the specialist audience a business-relevant use case performing a practical demonstration of Industrial Data Space.

The booth, which was highly frequented on all three days, invited visitors to find out more about IDS, to understand the tasks and value proposition but also to discuss further requirements for commercially feasible implementations. It was therefore possible to interest new people in the topic as well as to gain insights to help make proposals for the next steps at IDS. The demonstrator was particularly appreciated by the President of OPC Foundation, Thomas Burke, who visited the booth on the second day when he welcomed the demonstrator’s connection to OPC UA.
The “First Summit of the Industrial Data Space Association (IDSA) and the Spanish Industria Conectada 4.0 initiative” was the result of a joint effort with FIWARE, the Spanish IDSA member, the Spanish Government and the Industria Conectada 4.0 (the Spanish Industry 4.0 initiative). One entire afternoon was dedicated to the integration of the initiatives and on new use cases that could arise from close cooperation in a Spanish IDSA hub.

Lars Nagel, Managing Director of the Industrial Data Space Association (IDSA), introduced the vision of a secure and sovereign data space. Afterwards, an application-oriented use case from the electronics industry was presented by the IDSA member company Data Ahead GmbH. Two flagship projects from the IDSA presented international solutions: Boost 4.0, presented by Oscar Lazaro from Innovalia in Spain, and MIDH, presented by Sergio Guzméroni from Politecnico Di Milano in Italy. Further topics at the summit were “Relevant coordination initiatives for Digitising European Industry”, investigating the significance of IDS from the point of view of Hubert Tardieu, CEO Advisor at Atos with “Multi-side Markets and Business Models in the new Digital Industry Era” and the presentation of the two new use cases at Fiware by Ulrich Ahle that are to be demonstrated as the first open source implementation of the IDS architecture at the Hannover Messe. Presentations about the Industry 4.0 initiative in Spain by representatives of the Spanish Ministry, Banco Santander, Tecnalia and Ametic followed, before a panel discussion closed the programme. “This joint summit demonstrates how much potential and willingness there is with respect to all Spanish stakeholders to implement Industrial Data Space in the Spanish economy and to provide for the further dissemination of the IDS idea through an own eco-system”, explained Lars Nagel after the successful congress appearance in Malaga.

On the last day of the Fiware Tech Summit, Ulrich Grauvogel from Dataahead produced another highlight when he gave a high-profile, thought-provoking presentation about democratising data.
NEW GUIDELINE PUBLISHED FOR INDUSTRIAL DATA SPACE CONNECTOR

Having an IDS Connector is a prerequisite for participating in «Industrial Data Space». The Connector provides the communication interface to other participants in the network. The Connector is not a predetermined hardware and software with specified interfaces but is a logical entity composed of different services or components according to the task in hand - a complex topic and a prerequisite for the technical implementation of Industrial Data Space.

That is why a guideline was developed for member companies and published in November 2017 called "Industrial Data Space – Connector in a nutshell". "Members can be guided by this, become acquainted with the connector specification and the reference architecture and begin with implementation", explains Ralf Nagel of Fraunhofer ISST and Head of the AP2 software development, who wrote the 25-page document.

The publication is divided into three sections:

- From which components can you assemble your own connector according to your individual requirements?
- How can the compatibility of the connector with other connectors be checked as a supplement to certification?
- How can communication be standardised in Industrial Data Space?

"Here, I would like to emphasise that Industrial Data Space does not determine a standard API for data retrieval, but describes the individual data APIs of connectors through a standardised information model (metadata)."

Ralf Nagel Head of the AP2 software development, Fraunhofer ISST

TECHNICAL INSIGHTS

OFFICIAL PRESENTATION OF THE FIRST PROTOTYPE OF THE TRUSTED CONNECTOR

The Trusted Connector is a significant feature of Industrial Data Space. It forms an important basis for the secure exchange of data beyond company borders – while maintaining complete control over data flows and data use. The key functions of the Trusted Connector are the trustworthy transmission of data and its fine-grained control of information flow. The open-source prototype of Trusted Connector was developed at Fraunhofer AISEC and presented to the public for the first time at the it-sa security exhibition in Nuremberg in mid-October.

Anxiety about losing control over sensitive data is one of the biggest impediments to deploying Industry 4.0 and the Industrial Internet of Things (IIoT) in Germany. The rise of networking between companies enables new business models, more precise planning and direct ways of communication, but at the same time it means new requirements for data security.

The Trusted Connector is a trustworthy platform which ensures that applications are isolated while providing mutual proof of the respective security levels. Guidelines for data processing control data flows and lock the use of data into requirements. In this way, the sovereignty of the data owner is preserved, and sensitive business processes are protected from threats. Pre-processing data by means of isolated applications in the Trusted Connector makes it possible to create trustworthy process chains both within the company and beyond company borders.

At it-sa in Nuremberg the security researchers from Fraunhofer AISEC presented a prototype of the open-source Trusted Connector. This is currently being piloted in various application scenarios, and being tailored to meet industry requirements and standardised according to DIN Spec 27070. Fraunhofer AISEC helps companies to integrate and adapt the Trusted Connector approach.

FINAL SPRINT OF USE CASE LOGISTICS CONCLUDED

The software development of the use case Logistics has been concluded. In the final sprint 7 the current sectors, i.e. the current alternatives, were merged: both variants of sprint 6 – the migration of the IDS information model and the separation of the system adapter and mockup implementation – are now merged in the final status.

All the different levels and steps of the software development are still explicitly deposited in the member area of the IDSA homepage and are available at any time. An informative final report has been added as a pdf. 30 pages give readers and users an overview of the use case as well as of the implementation and the functionalities.

“Anyone new to this subject matter can get off to a good start by looking at the background information in this report”, explains Ralf Nagel from Fraunhofer ISST and Head of AP2 software development, who wrote the 25-page document.

The publication is divided into three sections:

- From which components can you assemble your own connector according to your individual requirements?
- How can the compatibility of the connector with other connectors be checked as a supplement to certification?
- How can communication be standardised in Industrial Data Space?
ABOUT THE WORKINGGROUPS

SALZGITTER AND ADVANEOD Agree To Pilot Certification

Work on certificating participants and key components is entering a significant phase. The working group on Certification set this out in their last meeting in Berlin in the middle of September. During the meeting decisive steps were determined for piloting the respective criteria catalogues. The companies agreed to undergo certification in the pilot phase. Salzgitter and Advaneo will complete the participants’ certification and AISEC agreed on pilot certification for the components catalogue. The Connector security profiles and the requirements specification for the approval of “IDS test centres” were further issues on the agenda.

USE CASE DEVELOPMENT CYCLE Published

Step by step towards a successful use case: The use case development cycle that has been developed by a sub-working group of the working group use cases & requirements a couple of months ago provides IDSA members with important background knowledge to help you transfer Industrial Data Space into practical examples and test it in a company’s everyday business. Six steps lead interested members from onboarding IDSA and planning the use case projects, right through to roll-out. In addition to the clear and comprehensible graphics, key points provide further tips to help you avoid possible obstacles on the way towards implementing your own use case.

IDSA members can find out more about the use case development cycle here

TECHNICAL INSIGHTS

SOURCE CODE OF IDS INFORMATION MODEL UNDER DEVELOPMENT

The Industrial Data Space Information Model is an extensible, machine readable and technology independent data model suitable to describe all relevant processes and data artefacts used in the Industrial Data Space. The Information Model is implemented as an OWL Ontology document and is developed as an open source project on the widely used development platform Github https://github.com/IndustrialDataSpace/Information-Model. The source code of the Information Model is currently under development. However, the current development status is available in the develop branch of the repository under the terms of the Apache License 2.0 https://www.apache.org/licenses/LICENSE-2.0. A release of the Information Model is planned for end of 2017. The work on the information model is organised in the sub-working group 4 of the architecture working group of the Industrial Data Space Association, which is chaired by Jaroslav Pullmann (Fraunhofer FIT) and Dr. Sebastian Tramp (eccenca GmbH).
The cooperation between the Industrial Data Space Association and Plattform Industrie 4.0 continues to take shape. During a meeting of both initiatives in Dortmund on 11 October they sought to align the approaches of Industrial Data Space, the administration shell and Open AAS. For this purpose, application scenarios from Plattform Industrie 4.0 will be run through and analysed in the Use Cases & Requirements working group at the IDSA. In a further step, the security paper by Plattform Industrie 4.0 will also be synchronised with the Trusted Connector. Representatives of Industrial Data Space will present the Trusted Connector in detail at the next meeting of the Security working group on 13 November and agree on further steps.

**IMPORTANT STEPS TOWARDS COOPERATION WITH PLATTFORM INDUSTRIE 4.0**

**WG ARCHITECTURE ADDRESSES CONNECTOR SPECIFICATION AND SECURITY PROFILE**

The Architecture working group met at Siemens in Erlangen on 21 November to discuss the current developments for the architecture of Industrial Data Space. In focus were topics related to the IDS Connector such as the Connector specification, security profiles and different implementation variants.

Work on the reference architecture model 2.0 and they cooperation with the Plattform Industrie 4.0 and with FIWARE were also addressed at the meeting. In particular, innovations in the areas of Usage Control and Functional Overview were discussed and the IDS and FIWARE architectures were compared with each other. Furthermore, the agenda included reports from the sub-working groups and on the topic of certification.

“The number of use cases and members of the association increases, so use case pitches and discussions belong to a larger audience among the members and even beyond - to the public. So we integrate the pitches of use cases and the matchmaking into our summit.”

* Lars Nagel, Managing Director Industrial Data Space Association

**USE CASES & REQUIREMENTS WORKING GROUP IS RESTRUCTURING**

More transparency, more interaction and even more use cases: Those are the objectives the Use Cases & Requirements working group expressed at its last meeting at the beginning of September. Besides having an overview of all the use cases that are already in the process of being set up, there will also be a news blog in future. There are also plans to initiate a Use Case Conference. That will provide the appropriate conditions for the Use Case Pitches by companies and for establishing networks or implementing workshops. This conference is to be organised by a committee which has grown out of a working group and which will also be able to take care of the strategic development and control of use cases.

“The working group is currently in the middle of a significant period of change”, explains Sven Wenzel from Fraunhofer ISST who manages the working group together with Gerrit Stöhr. The mission statement is currently being defined more specifically. “We are also orienting our new measures and structures to that.”

**INDUSTRIE 4.0**

The cooperation between the Industrial Data Space Association and Plattform Industrie 4.0 continues to take shape. During a meeting of both initiatives in Dortmund on 11 October they sought to align the approaches of Industrial Data Space, the administration shell and Open AAS. For this purpose, application scenarios from Plattform Industrie 4.0 will be run through and analysed in the Use Cases & Requirements working group at the IDSA. In a further step, the security paper by Plattform Industrie 4.0 will also be synchronised with the Trusted Connector. Representatives of Industrial Data Space will present the Trusted Connector in detail at the next meeting of the Security working group on 13 November and agree on further steps.
WHAT IS DIGITAL IDENTITY?
A POINT OF VIEW BY JÖRG LANGKAU

To begin an essay about this topic is a challenge in itself! This question seems to be a “digital issue” which we might also ask in the context of the “digital world.”

The issue: identity. This is quickly explained with an Internet search and a bit of copy and paste. Finished! And again: digital. Finished!

What I find a lot more interesting is to ask what can I do with an identity? If you have an identity, you can authenticate yourself for a communication partner: the receiving partner trusts this authentication and is also willing to give information if a fundamental premise is fulfilled: namely that he/she, i.e. the giver, authorises this as well.

What I find to be the most interesting thing is that this triad of “identity, authentication and authorisation” is to be heard everywhere. However, it suddenly becomes silent as soon as a cross-domain solution is wanted. Does a “device” quote in the annual diagram and chart the willing reader attempts to fully understand.

In the “Annual 2013/2014, digital infrastructures, working group 2 of the national IT summit (AG2)” on page 295, I discovered that: “... for efficient operations a suitable device identity management component is required, ...” and that there is obviously need for action.

At this year’s (2017) IoT World in Barcelona I gazed in awe at numerous interesting and propitious solutions! In the discussions however I always got the same answer: i.e. that the question of cross-domain “digital identity” has still not got anywhere near to getting a reliable answer.

And visiting the working group 3 “Security of networked systems” at Plattform Industrie 4.0 (Berlin, October 2017) demonstrated that the “digital identity” in a sub-working group i4DI- IDS will definitely initiate some discussions.

If you replace the “device” quote in the annual with “connector”, then we are getting as close as possible to Industrial Data Space and “digital identity” becomes tangible (and the triad becomes audible again): which IDS Consumer Connector is allowed to elicit data from this IDS Provider Connector? And if the Provider Connector imparts data – which data and on which basis does it formulate the usage control which obliges the Consumer Connector to proceed with the data in an authorised way?

In time there will be a first attempt which will be suitable for keeping the “digital identities” of the connectors participating in a multi-domain topology available in an “identity provider” IDS Connector.

Subsequently, nicos will be able to showcase the first draft of an IDS Broker that will give us an understanding of the triad with a service: the authorisation service.
SICK is collaborating with all of the members in the Industrial Data Space Association to develop a company-neutral standard, that is to be open on an international level. For SICK this is a mandatory prerequisite for success.

Medium-sized enterprises must become the driving force behind Industry 4.0. With Industrial Data Space we want to make the potentials provided by networking all the stakeholders in supply chains available for industry and SMEs alike, and to motivate them to deploy innovative technologies.

Due to the growing flood of data working with our partners within the supply chain has become more and more complex in the last five years – especially at an international level. Today solutions are created primarily for partners with direct relations. Industrial Data Space and the cooperation between companies of all kinds within the Industrial Data Space Association gives us a great opportunity to change that: by drawing up new standards and simultaneously ensuring highest levels of data security.

Membership of Industrial Data Space Association is an enormous advantage for us, and not only because it enables us to take the topic of “Industry 4.0” forward on a technical level and to participate in creating a basic framework for future applications. For us it is also a platform which we can both learn from and contribute our knowledge to the Industrial Internet of Things.

Our lives will be facilitated by self-learning decision-making systems integrated in a wide range of applications and everyday items. The new Technology can become widespread if it is possible to process control and measurement data uniformly and safely.

Due to the growing flood of data working with our partners within the supply chain has become more and more complex in the last five years – especially at an international level. Today solutions are created primarily for partners with direct relations. Industrial Data Space and the cooperation between companies of all kinds within the Industrial Data Space Association gives us a great opportunity to change that: by drawing up new standards and simultaneously ensuring highest levels of data security.

SICK is collaborating with all of the members in the Industrial Data Space Association to develop a company-neutral standard, that is to be open on an international level. For SICK this is a mandatory prerequisite for success.

Medium-sized enterprises must become the driving force behind Industry 4.0. With Industrial Data Space we want to make the potentials provided by networking all the stakeholders in supply chains available for industry and SMEs alike, and to motivate them to deploy innovative technologies.

Due to the growing flood of data working with our partners within the supply chain has become more and more complex in the last five years – especially at an international level. Today solutions are created primarily for partners with direct relations. Industrial Data Space and the cooperation between companies of all kinds within the Industrial Data Space Association gives us a great opportunity to change that: by drawing up new standards and simultaneously ensuring highest levels of data security.

Membership of Industrial Data Space Association is an enormous advantage for us, and not only because it enables us to take the topic of “Industry 4.0” forward on a technical level and to participate in creating a basic framework for future applications. For us it is also a platform which we can both learn from and contribute our knowledge to the Industrial Internet of Things.

Our lives will be facilitated by self-learning decision-making systems integrated in a wide range of applications and everyday items. The new Technology can become widespread if it is possible to process control and measurement data uniformly and safely.
Strategies, innovations and solutions related to the Internet of Things (IoT) and the Industrial Internet of Things (IIoT) will be presented and discussed at the IoT Conference CESIS 2018 in Munich from 20 to 21 February 2018. At the second VDI congress about business strategies and visions to deal with these topics, the IDSA will also be present.

After a successful kick-off, the Industrial Data Space Association will be there again in 2018. "Integrated Industry – Connect & Collaborate" is the main topic at the Hannover Messe 2018. From 23 to 27 April 2018, the world’s leading industrial fair aims to illuminate the next level of digital transformation as the interaction between automation and energy technology, intralogistics, IT platforms and artificial intelligence continues to push developments forward. After their successful initial appearance there this year, the Industrial Data Space Association will also be present as one of the expected 5,000 exhibitors in Hannover in 2018 to give an impressive insight into the world of Industrial Data Space together with member companies and cooperation partners.

The IDSA is currently planning the exhibits and specialized lectures for the fair so as to present its idea of inter-country and inter-company data space to the 200,000 trade visitors.
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. Industrial Data Space 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
2017-02-13 15:59:09.140 WARN 1 ... [nio-9999-exec-1-36] [ConcurrentHashMap] Error performing Action 'REGISTER': Error performing Action 'REGISTER':

<DataEndpoint>
  <active>false</active>
  <connector>
    <active>true</active>
    <description>Broker API implementation for ISST</description>
    <key>http://www.isst.fraunhofer.de/Broker</key>
    <name>Broker</name>
  </participant>
  <participant>
    <active>true</active>
    <description>Fraunhofer ISST - Dortmund</description>
    <key>http://www.isst.fraunhofer.de/</key>
    <name>Fraunhofer ISST</name>
    <rdf>&lt;participant&gt;Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy eirmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.&lt;/participant&gt;</rdf>
  </participant>
</DataEndpoint>