

#### CONNECT & PRODUCE

### A Multi-Sided Business Platform for Plug and Produce Industrial Product Service Systems

### **IDS** Concept

### 26 November 2020, 15:00 CEST

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no<sup>o</sup> 822064.



# **IDS Concept – Introduction**



IDSA defines a reference architecture, which supports sovereign exchange and sharing of data between partners independent from their size and financial power.

"Data sovereignty can be defined as a natural person's or corporate entity's capability of being entirely self-determined with regard to its data"

The IDSA aims at providing the standard for sharing data between different endpoints while ensuring data sovereignty.

# **IDS Concept – Reference Architecture**



### IDS Reference Architecture Model 3.0

<u>https://www.internationaldataspaces.org/wp-</u> <u>content/uploads/2019/03/IDS-Reference-Architecture-Model-3.0.pdf</u>

"The Reference Architecture Model of the International Data Spaces (IDS-RAM) constitutes the basis for a variety of software implementations, and thus for a variety of commercial software and service offerings."

		INTERNATIONAL DATA SPACES ASSOCIATION
REF ARC MOI	ERENCE HITECTURE DEL	
	Version 3.0   April 2019	

### **IDS Concept – Profiles and Interactions**





## **IDS Concept – Roles and Interactions**





# **IDS Concept – Usage Control**



Usage Control in the International Data Space https://www.internationaldataspaces.org/wpcontent/uploads/2020/09/IDSA-Position-Paper-Usage-Control-in-IDS.pdf

"Data usage control and data provenance as conceptual and technical solution to cope with data sovereignty."



Position Paper of members of the IDS Association
Position Paper of bodies of the IDS Association
Position Paper of the IDS Association
White Paper of the IDS Association

🗾 Fraunhofer





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# **IDS Connector – From Theory**





# **IDS Connector – To Practice**



### **TRUE (TRUsted Engineering) Connector**

- Base Security Profile
- Based on Apache Camel/Spring Boot
- Info Model alignment 4.0.0
- Tested the integration with other HTTP/HTTPS connectors (GEC, FIWARE) during the Integration Camp events
- Main focus on the Execution Core Container, a foreground of the Market4.0 project
- Trivial Data APP

#### **MARKET4.0 IDS Connector – Data Flow** CONNECT & PRODUCE **TRUE Connector IDS Trusted Environment TRUE Connector Open Source Open Source** MultiProtocol **MultiProtocol** Sender Route **Receiver Route** • Get Message from Data APP • Get Message from Sender ECC • Add Token received from DAPS • Validate Token with DAPS MultiFormat MultiFormat Send Message to Data APP • Send Message to Receiver ECC • Register Transaction to CH • Send Response to Sender ECC Extendible Extendible Configurable Configurable Integrable Integrable

### **IDS Connector – Architecture**







### **IDS Connector – Demo**





## **IDS Connector – Demo Scenario**





## **IDS Connector – References**



TRUE Connector – Dockerized

https://github.com/Engineering-Research-and-Development/true-connector

TRUE Connector – Execution Core Container Source Code

https://github.com/Engineering-Research-and-Development/market4.0execution\_core\_container\_business\_logic

TRUE Connector – Data APP Source Code

https://github.com/Engineering-Research-and-Development/market4.0data\_app\_test\_BE

### **IDS Connector – Contacts**





- www.eng.it
- O LifeAtEngineering
- **@EngineeringSpa**
- in Engineering Ingegneria Informatica Spa
- f gruppo.engineering



Gabriele De Luca Senior Researcher

gabriele.deluca@eng.it



Igor Balog

Senior Developer igor.balog@eng.it



Lorenzo Sutton Project Manager

lorenzo.sutton@eng.it



#### **Angelo Marguglio**

Head of Unit angelo.marguglio@eng.it

### **THANK YOU**



Project Coordinator: INTRASOFT International SA



www.market40.eu



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