OTWeek

Dublin — June 20-23, 2022

Interconnect Project and OPEN DEI TF3 23 June 2022

Antonio Kung (Trialog)

GLOBAL VISION:

IoT TODAY AND BEYOND



ınterconnect

PROJECT

THE ROAD TO INTEROPERABILITY



INTERCONNECT TEAM PROFILE

50+

institutions from

EU countries engaged in this interoperability mission

R&D Institutions

10

Manufacturers and Integrators

09

IoT/ICT Providers

05

Consultancy

04

Sets of end-users

03



DSO

13

Retailers

U,



Associations

INTERCONNECT PATHWAY

TO INNOVATION

2019-2021



Existing background

- Technologies & services in TRL 6
- SAREF, SPINE, FIWARE, S2
- 30 use cases from 11 different projects (InterFlex, Integrid, GIFT, EEBUS, etc.)



Interoperability

- Semantic data exchange (SAREF)
- Interoperability framework w/ semantic discovery, navigation and reasoning enablers

2019-2021



Use Cases & Services

- New use cases for existing technologies
- New technologies for existing use cases
- Incremental innovation of existing technologies

2021-2023



Core Technologies

- SAREFized services
- AI & ML
- IoT platforms
- Gamification
- P2P marketplace
- DSO interface

2021-2023

Open Calls for Innovators



- Interoperable-bydesign prototypes
- Interoperableby-adoption demonstrators

2021-2023

Pilots



- DSF-centric
- Multi-utility
- Cross-sector

Interconnect

Deadline: 26/07/2022



www.interconnect-1-oc.fundingbox.com



FOR EUROPEAN ICT/ENERGY SMEs AND STARTUPS



INTERESTED IN DEVELOPING NOVEL INTEROPERABLE APPLICATIONS FOR SMARTHOMES AND SMARTGRIDS

14 Bottom-up projects will get benefits such as:

- Financial support: up to 150.000 € per project!
- 7 months Customized Support Programme



AIOTI-BDVA-European Projects Position papers



H2020 and Horizon Europe

Industry Initiatives







Building blocks from research



Position papers 2021-2022



Industry solutions

Associations

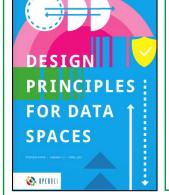


Support actions









Published

Guidance for the inegration of IoT and Edge computing in data spaces

AI @ TI

Draft May 10



Data sharing spaces and interoperability

Draft June 24



Reference architectures and interoperability in digital platforms

Draft June 23



Digital platforms
Data spaces
Digital twins
standards 20222025







OPEN DEI TF3

REFERENCE ARCHITECTURES AND INTEROPERABILITY IN DIGITAL PLATFORMS





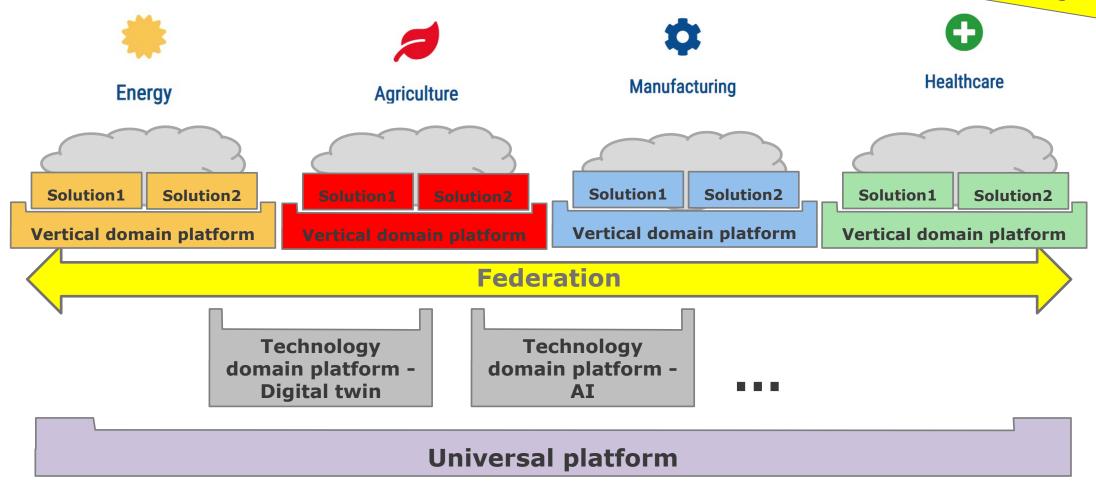
TABLE OF CONTENTS

1	Intro	luction	7
	1.1	Structure of Position Paper	7
	1.2	Acknowledgement	7
2	Aligni	ng Digital Platforms for DEI	9
	2.1	Context	9
	2.2	Reference Architectures	9
		2.2.1 Purpose of Reference Architectures	9
		2.2.2 OPEN DEI Reference architecture framework	11
		2.2.3 Digital Platforms Convergence - DSBA Initiative	12
	2.3	Interoperability Frameworks	13
		2.3.1 Purpose of interoperability Frameworks	13
		2.3.2 Building Interoperability	16
	2.4	Topics of Interest for Federated Platforms	18
		2.4.1Trustworthiness	18
		2.4.2 Universal resource management	
		2.4.3 Digital twin and Al integration	
		2.4.4 Semiotic approach to support cyber physical systems	
		2.4.5 Interoperability approaches	
	2.5	Aligning with Solutions	
3	Reference Architectures and Interoperability for Digital Manufacturing Platforms		
	3.1	Context for Manufacturing	
	3.2	Reference Architectures for Manufacturing	
	3.3	Interoperability Frameworks for Manufacturing	
	3.4	Aligning the Manufacturing domain for DEI	
4		ence Architectures and Interoperability for Digital AgriFood Platforms	
	4.1	Context for Agrifood	
	4.2 4.3	Reference Architectures for Agrifood	
	4.3 4.4	Interoperability Frameworks for Agrifood	
5		ence Architectures and Interoperability for Digital Energy Platforms	
5	5.1 Context for Energy		
	5.1 5.2	Reference Architectures for Energy	
	5.3	Interoperability Frameworks for Energy	
	5.4	Aligning the Energy Domain for DEI	
6	Reference Architectures and Interoperability for Digital Health & Care Platforms		
	6.1	Context for Health and Care	
	6.2	Reference Architectures for Health and Care	
	6.3	Interoperability Frameworks for Health and Care	
	6.4	Aligning the Health and Care domain for DEI	51
	6.5	Example of InteropEHRate Research Project	54
7	Lesso	ns Learned and Recommendations	56

OPEN DEI TF3

REFERENCE ARCHITECTURES AND INTEROPERABILITY IN DIGITAL PLATFORMS

Following Reference Architecture Standards
ISO/IEC/IEEE 42010 - Architecture description
Meta Reference Architecture



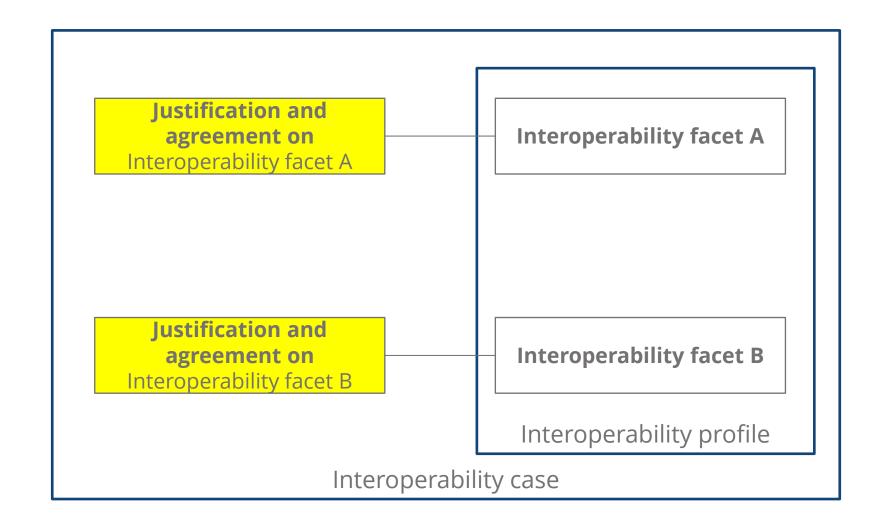


OPEN DEI TF3 reference architectures and interoperability in digital platforms

Digital platform IoT Data space reference architecture **Common blocks Digital twins Digital platform** reference architecture **Energy domain pattern (e.g. SGAM) Patterns Digital platform Energy digital platform** Solution architecture solution architecture **Digital platform Energy digital platform**



Interoperability Approach





Conclusion of OPEN DEI position paper: principles for constructing cross-domain

- Cross-domain convergence at architecture level
 - Constructing solution architectures from reference architectures standards
 - Unified platform building blocks
 - Technology domain building blocks (e.g., AI, digital twin), and
 - Vertical domains building blocks
 - Example: energy solution architecture based on SGAM
- Cross-domain convergence at interoperability level
 - Constructing interoperability profiles from interoperability cases
 - Example: energy interoperability profile based on energy ontologies
- Additional building blocks
 - Trustworthiness
 - Resource management
 - Digital twin and Al Integration
 - Semiotic approach, Semantic interoperability approach
- Demonstrating use in 4 domains





Thank you!

Find more:

https://www.opendei.eu/

iotweek.org