DATAWEEK

JOIN.LEARN.SHARE.GET VALUE

Digital Twins and Data Spaces and Standards

June 13th, 1530-1700
Ivar Room

EUHUBS4DATA

BDV BIG DATA VALUE ASSOCIATION

ARNE BERRE

Chief Scientist and Innovation Director at SINTEF and NorwAI

LINKEDIN

TWITTER

SINTEF AND NORWAI

Arne J. Berre is Innovation Director at NorwAI.ai and chief scientist at SINTEF. He is the lead of GEMINI Big Data iSpace and involved in the Norwegian Nemonoor AI EDIH. He is the leader of the BDVA/DAIRO TF6. He is the technical coordinator of the COGNITWIN projecton Cognitive Digital Twins for the process industry and involved in Circular TwAIn for Manufacturing. He is the scientific coordinator of the European Green Deal, ILIAD, Digital Twin of the Ocean project, and the AquaINFRA EOSC project. He is the lead of the Norwegian ISO SC42 AI group and involved in ISO SC41 IoT and Digital Twin, ISO/TC211 and OGC for Geospatial Digital Twins.

Introduction to Digital Twins with Data Lakes, Data Spaces and Standards

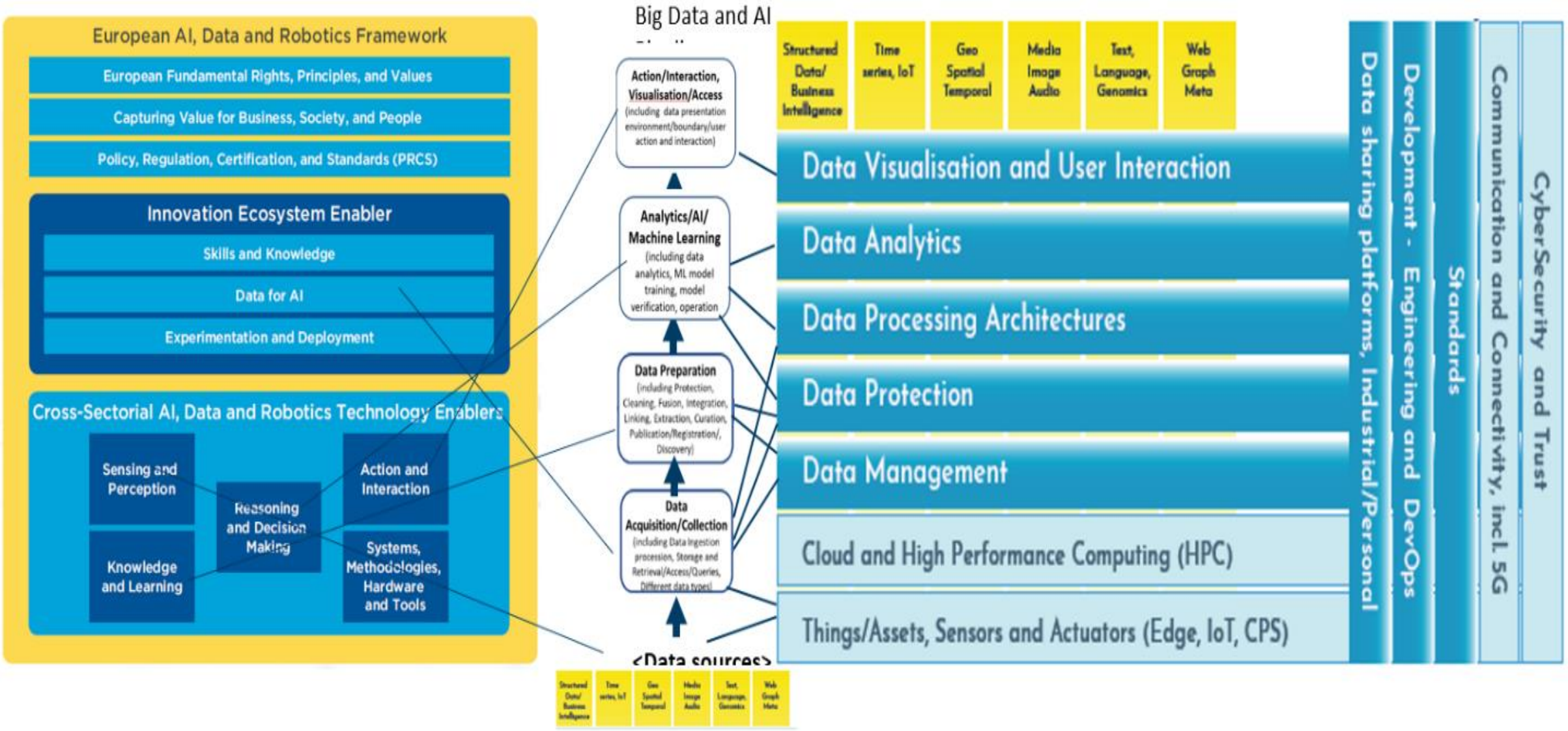
Important next steps for Digital Twins, Data Spaces, Data Lakes and Standards ?

Join at

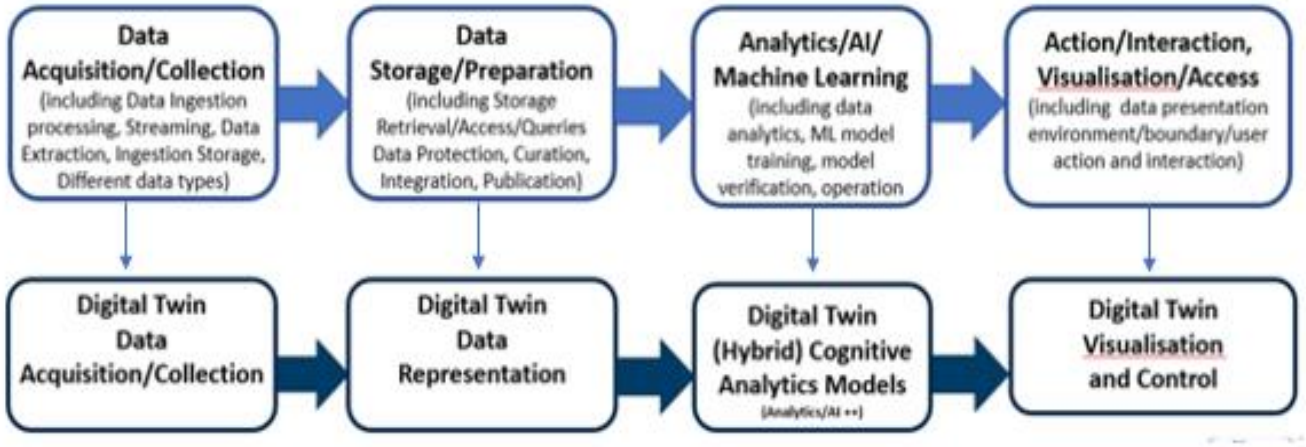
slido.com

#1970 621

Referanse modell for BDVA – Big Data Value Association



Digital Twin Pipeline architecture



[Technologies and Applications for Big Data Value]

Edward Curry, Sören Auer, Arne J. Berre, Andreas Metzger, Maria S. Perez, Sonja Zillner
Pages 1-15 | Open Access

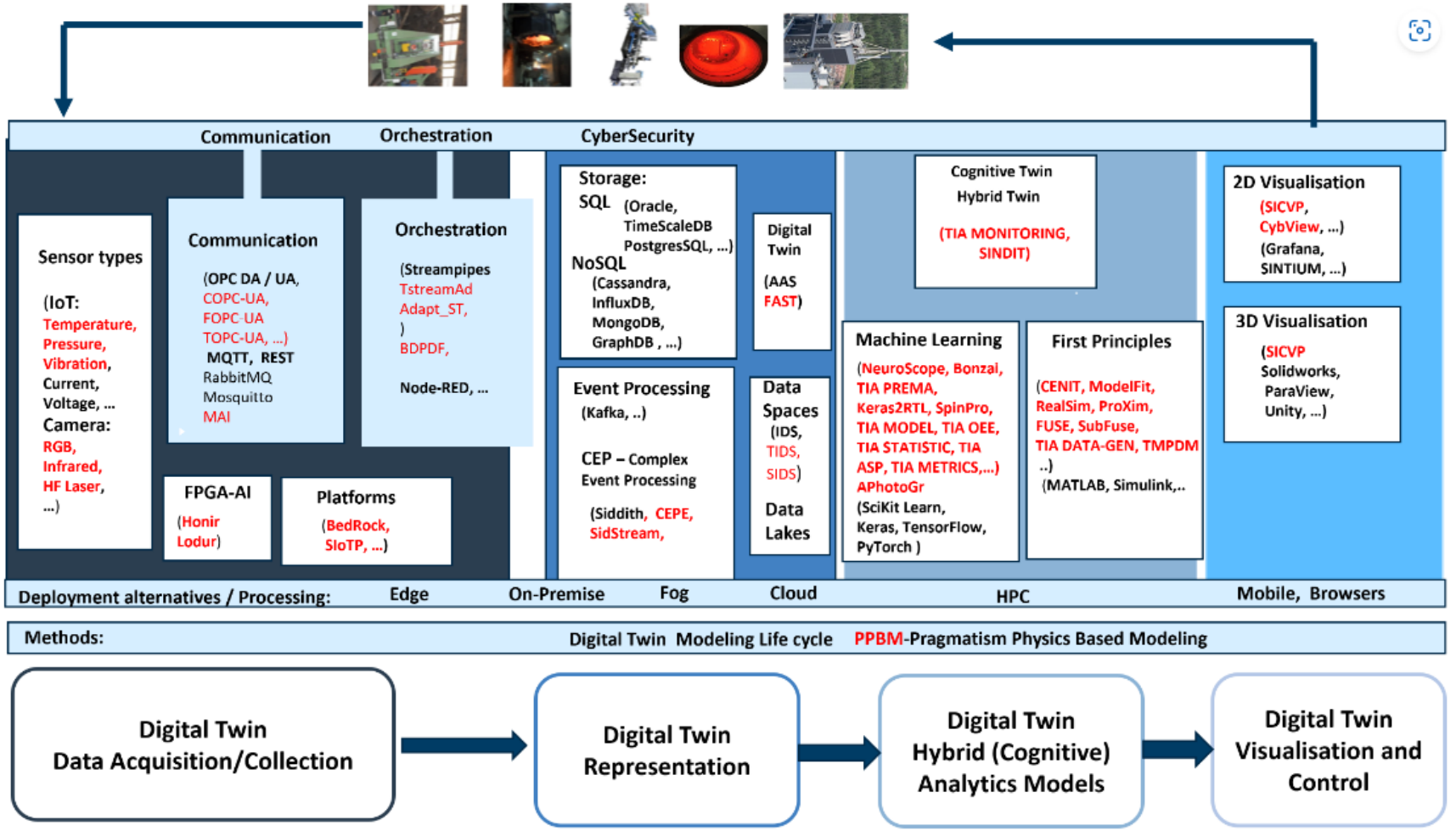
[Big Data and AI Pipeline Framework: Technology Analysis from a Benchmarking Perspective]

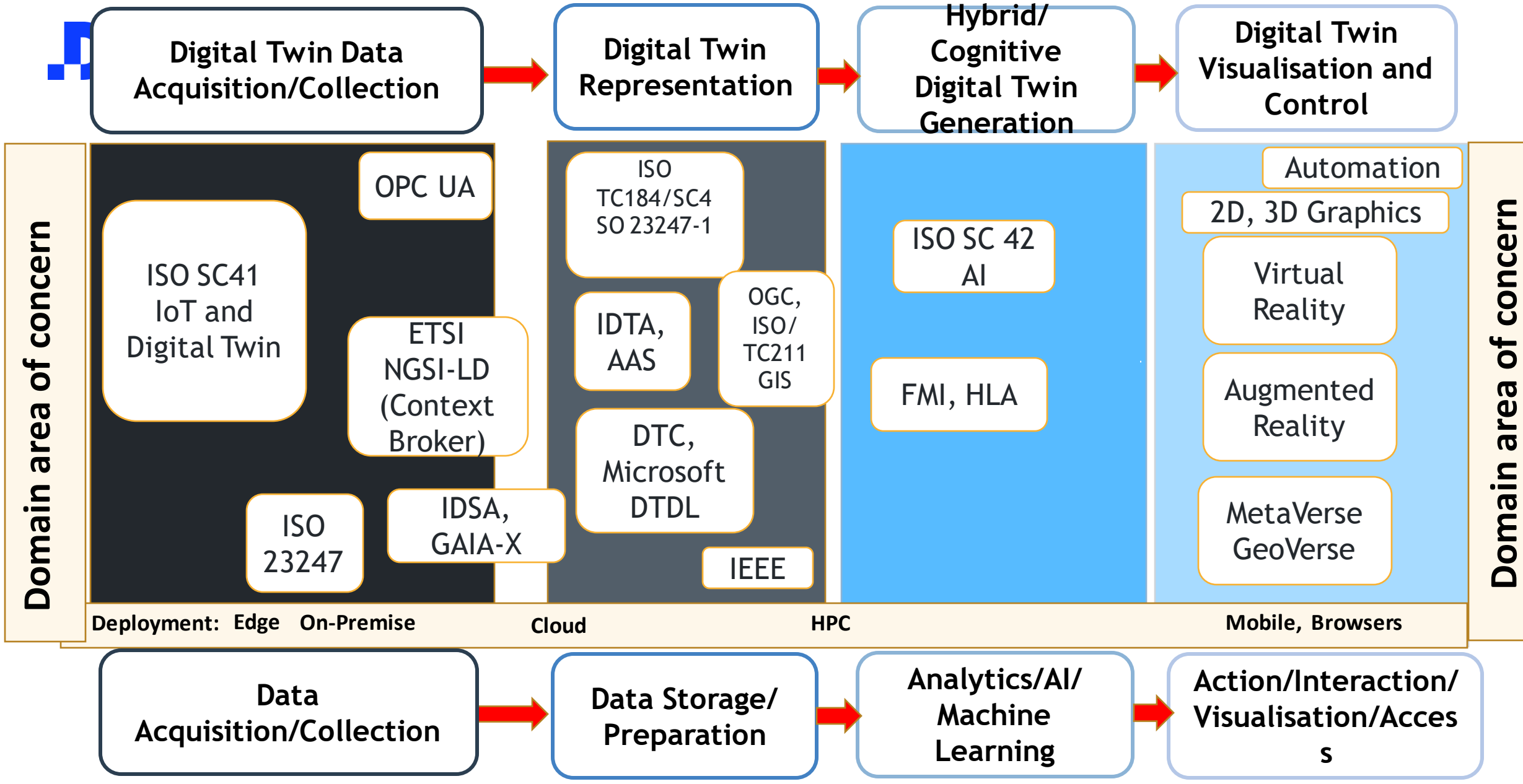
Arne J. Berre, Aphrodite Tsalgatidou, Chiara Francalanci, Todor Ivanov, Tomas Pariente-Lobo, Ricardo Ruiz-Saiz et al.
Pages 63-88 | Open Access

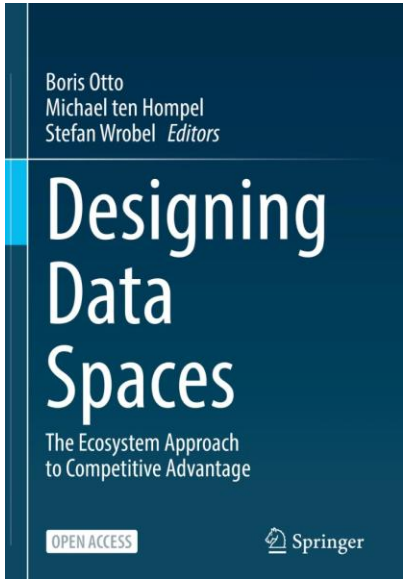
[Data-Driven Artificial Intelligence and Predictive Analytics for the Maintenance of Industrial Machinery with Hybrid and Cognitive Digital Twins]

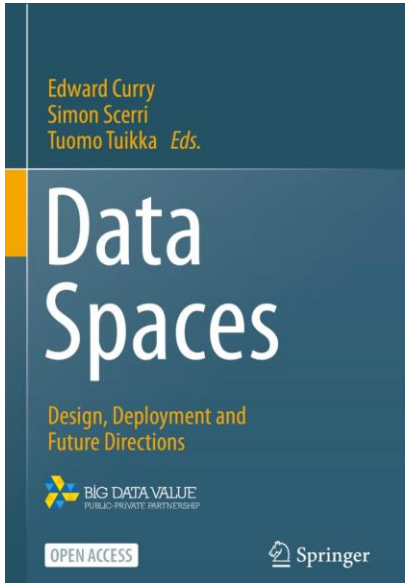
Perin Unal, Özlem Albayrak, Moez Jomâa, Arne J. Berre
Pages 299-319 | Open Access

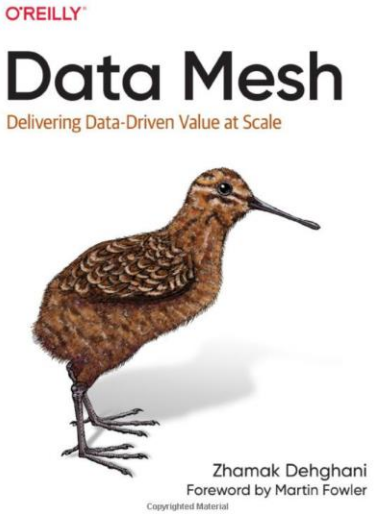
Smart / Cognitive Sensors (Selection method)




Digital Twin Data Acquisition/Collection
Digital Twin Representation
Hybrid/ Cognitive Digital Twin Generation
Digital Twin Visualisation and Control
Domain area of concern
OPC UA
ISO SC41 IoT and Digital Twin
ETSI NGSI-LD (Context Broker)
ISO 23247
IDSA, GAIA-X
ISO TC184/SC4 SO 23247-1
IDTA, AAS
OGC, ISO/ TC211 GIS
DTC, Microsoft DTDL
IEEE
ISO SC 42 AI
FMI, HLA
Automation
2D, 3D Graphics
Virtual Reality
Augmented Reality
MetaVerse GeoVerse
Domain area of concern
Deployment: Edge On-Premise
Cloud
HPC
Mobile, Browsers
Data Acquisition/Collection
Data Storage/ Preparation
Analytics/AI/ Machine Learning
Action/Interaction/ Visualisation/Acces s





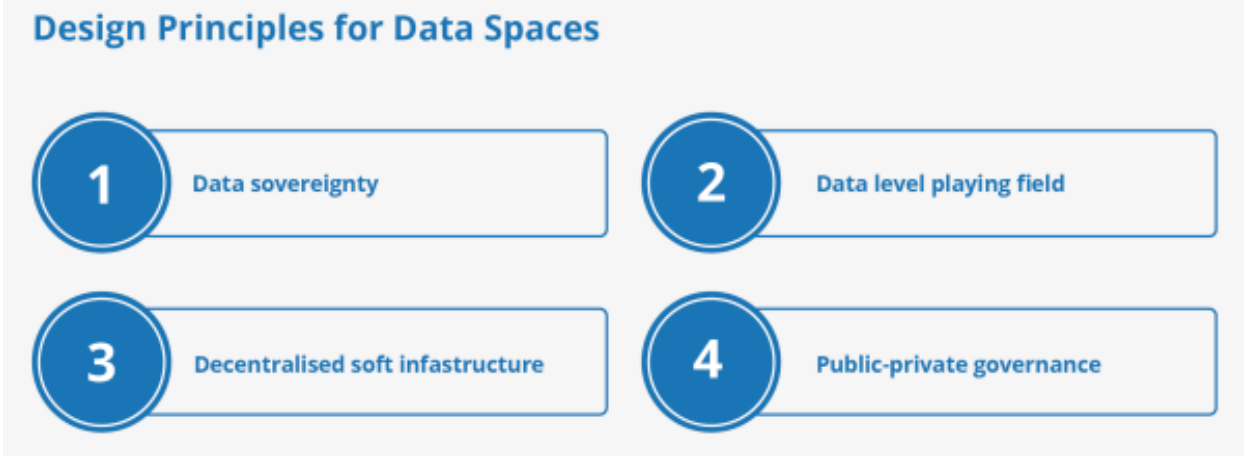


OPEN DEI design principles position paper on Resources

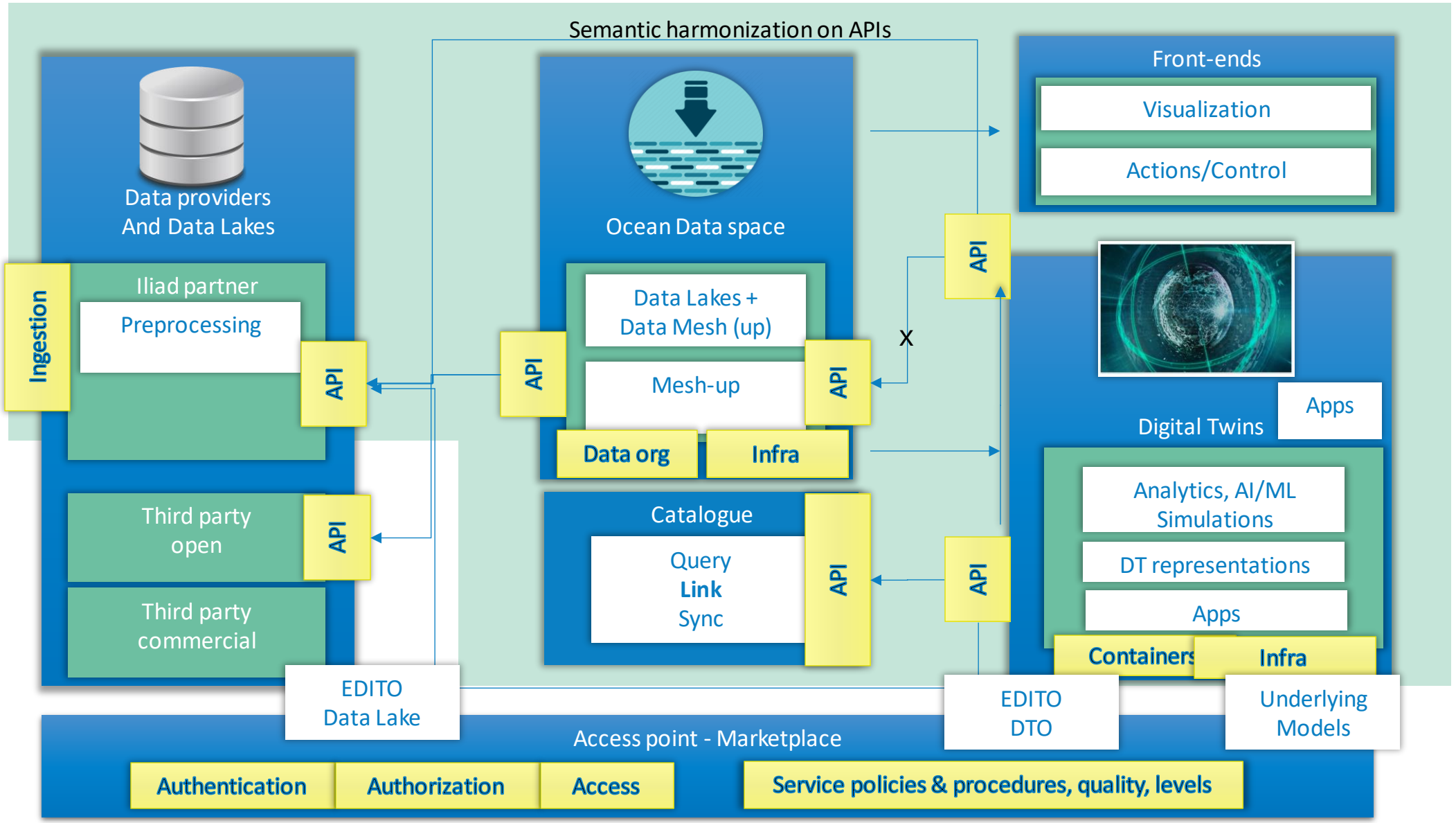
Public Reports

INTERNATIONAL DATA SPACES ASSOCIATION

gaia-x



Iliad – Digital Twins of the Ocean (EU Green Deal project)



Agenda

- 1-Digital Twins with Data lakes, Data Spaces and Standards, Dr. Arne J. Berre, SINTEF

- 2-IoT and Digital Twins with Data Spaces in ISO SC41, Antonio Kung, Trialog

- 3-Urban Digital Twins supported by IoT and ETSI NGSI LD, Stefan Gessler, NEC Laboratories Europe

- 4-Digtal Twins, Data Spaces, Semantic Interoperability and Geospatial standards – in DEMETER Agriculture and ILIAD Digitial Twins of the Ocean, Raul Palma, PSNC

- 5-Energy Digital Twins with Data Spaces and Standards – SYNERGIES project, Fenareti Lampathaki, Suite5

- 6-Circular TwAIn – Digital Twins and Data Space for Circular Manufacturing, Sergio Gusmeroli, PoliMi

- 7-Digital Twin AAS standard and Industrial Data Space – the IDS-I Community, Ljiljana Stojanovic, Fraunhofer IOSB

- 8-EU Projects supporting ICT Standardisation. Ray Walshe, DCU

- Plenary – Architectures for Digital Twins – with Data Lakes and Data Spaces Interoperability – input to standards, AI

1. **Circular TwAIn** – Digital Twins and Data Spaces for Circular Manufacturing – https://www.circular-twain-project.eu/
2. **DEMETER** – Digital Twins and Semantic Interoperability for Agriculture – https://h2020-demeter.eu/
3. **Iliad** – Digital Twins and Data Space of the Ocean – https://www.ocean-twin.eu/
4. **ODALA** – Collaborative, Secure, and Replicable Open Source Data Lakes for Smart Cities https://odalaproject.eu/
5. **ETSI NGSI LD** – https://www.etsi.org/committee/cim
6. **COGNITWIN** – Cognitive Digital Twins for the Process Industry – http://cognitwin.eu/
7. **SYNERGIES** – Energy Data Space with Digital Twins – https://energydataspaces.eu/
8. **IDSA Data Space and Industry 4.0/AAS Digital Twin Community** – https://internationaldataspaces.org/ids-i-community-kick-off/
9. **ISO SC41 IoT and Digital Twin** – https://www.iso.org/committee/6483279.html
10. **ISO SC42 AI and Big Data** – https://www.iso.org/committee/6794475.html
11. **STANDICT** – https://www.standict.eu/

Important next steps for Digital Twins, Data Spaces, Data Lakes and Standards ?

Join at

slido.com

#1970 621

EUROPEAN BIG DATA VALUE FORUM

PLENARY DISCUSSION – STATEMENTS BY EACH PRESENTER:

FUTURE IMPACT/USE OF STANDARDS FOR DIGITAL TWINS/DATASPACES ?

DATAWEEK

JOIN.LEARN.SHARE.GET VALUE

Thank you!

EUHUBS4DATA

BDV BIG DATA VALUE ASSOCIATION