



The Standards People

# IoT Conference 2023

## Latest Activities in AIOTI

SESSION 8: The Role of MEC (Multi-access Edge Computing) in IoT Digital Transformation

Presented by: Antonio Kung



AIOTI

July 5th, 2023





Alliance for IoT  
and Edge Computing  
Innovation

# Presentation of AIOTI

# Mission and Vision



Alliance for IoT  
and Edge Computing  
Innovation

## Mission

To drive on behalf of our members **business, policy, research and innovation development** in the **IoT & Edge Computing**, AI and other converging technologies across the Digital Value Chain to support digitization in Europe, and competitiveness of Europe.

## Vision

Together we aim to lead, promote, bridge and collaborate in IoT & Edge Computing, AI and other converging technologies research and innovation, standardisation and ecosystem building providing IoT deployment for European businesses creating benefits for European society. We co-operate with other global regions to ensure removal of barriers to development of the IoT & Edge Computing market, while preserving the European values, including privacy and consumer protection.

# Alliance for IoT and Edge Computing Innovation

## Main Themes

- o IoT/IIoT/edge/AI applications in verticals
- o IoT/IIoT as an engine for convergence in **Computing continuum**

## Thought Leadership

- o We support development of the EU policies, regulation, strategies and standardisation by providing examples, best practices, use cases and testbeds



## Collaboration

- o With our partners we develop R&I agenda for EU funded projects and partnerships
- o We help our community to build consortia for EU funded projects

# Community

186  
Members

807  
Contributors

9  
Groups

7  
Focus Groups

7  
Task Forces

42  
Corporates

63  
SMEs

59  
Research/Academia

21  
Associations

1  
Public Authorities

# How we work

## Horizontal WG

Research & Innovation

Innovation Ecosystems

SCoDIHNet

Standardisation

Semantic Interoperability

Landscape, Gaps, Comp Continuum, IoT and relation to 5G

High-Level Architectures

Security & Privacy

Testbeds

Policy

## Vertical WG

Agriculture

Energy

Buildings & Communities

Health

Manufacturing

Mobility

## Task Force

Digital for Climate

Early Innovation Champions

Web3 Accelerator

# Reports (I)

## Research & Innovation

Strategic Research and Innovation agenda

Strategic Foresight Through Digital Leadership: IoT and Edge Computing Convergence

HE Interim Evaluation

(Immersive technologies, digital twins and edge/AI)

White Paper Mission and Activities of IoT Digital Innovation Hubs Network

Vision on IoT Innovation Ecosystems

Replicability and Scalability Assessment Tool

(Diversity and circularity as enabler for innovation)

(DIH Service Platform)

## Policy

AI Act and AI Liability

Network and Information Security Directive 2

Chips Act

Data Act

Data Governance Act

Cybersecurity Resilience Act

EU Standardisation Strategy

## Standardisation

IoT & Edge Landscape Report

Gap Analysis Report

IoT Impact Beyond 5G Report

Computing Continuum Report

Ontology Landscape Report

Guidance on integration of IoT/Edge in Data Spaces

Landscape of EU funded projects

(High Level Architectures and Digital Twins)

(Report on continuum)

## Testbeds

IoT/Edge Testbeds Catalogue

IoT/Edge Testbed Methodology

Report on DLT-IoT-AI Technological Convergence (DLT PET testing)

(DLT Testbeds & Regulatory Sandbox)

## Digital for Climate

Sustainability Product Initiative

Renewable Energy Directive III

Strategic Foresight Report

Green Deal Vision

Carbon removal certification

Methodology for carbon footprint measurement and reduction (Collaboration with ETSI/ITU-T SG5)

EGDC contribution

# Reports (II)

## Agriculture

Role of IoT in addressing the agroecological focus of the Green Deal

Role of IoT in addressing biodiversity and environmental monitoring

## Buildings & Communities

Energy Efficiency Directive recast

Renewable Energy Directive recast

Revision of Energy Performance of Buildings Directive

(IoT value for building and infrastructure)

IoT and Crisis Preparedness

Online Catalogue of Solutions

IoT improving Healthy Urban Living

## Energy

Open Energy Marketplaces Evolution - Beyond Enabling Technologies

Digitalising Energy System Action Plan

Energy Flexibility Solutions

Electricity Market Design

(Edge driven Digital Twins in distributed energy systems)

EC Smart Grids Expert Group

## Health

AI for better health  
(Health Data and Data Spaces)

## Mobility

Electric vehicles (EV) and electric vehicle charging User Cases driven approach

(White Paper on future mobility)

## Manufacturing

Business Impact of IoT in Manufacturing Industries





Alliance for IoT  
and Edge Computing  
Innovation

# Selection of four Reports

# Report 1

## Standardisation

IoT & Edge Landscape Report

Gap Analysis Report

IoT Impact Beyond 5G Report

### Computing Continuum Report

Ontology Landscape Report

Guidance on integration of IoT/Edge  
in Data Spaces

Landscape of EU funded projects

(High Level Architectures and Digital  
Twins)

(Report on continuum)



Alliance for  
Internet of Things  
Innovation

## Computing Continuum Scenarios, Requirements and Optical Communication enablers

Release 1.0

AIOTI WG Standardisation

April 2022

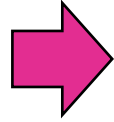
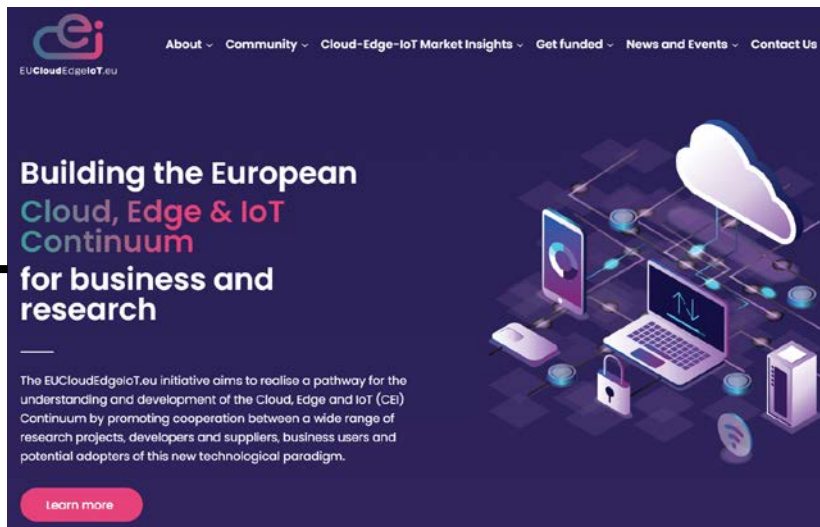
# Report 2 (Planned)

## Towards Computing continuum reference architecture

### Standardisation

- IoT & Edge Landscape Report
- Gap Analysis Report
- IoT Impact Beyond 5G Report
- Computing Continuum Report
- Ontology Landscape Report
- Guidance on integration of IoT/Edge in Data Spaces
- Landscape of EU funded projects (High Level Architectures and Digital Twins)
- (Report on continuum)**

<https://eucloudedgeiot.eu/>



### Architecture

Task Force 3

#### Topics

- Taxonomy definitions
- Sharing of components between RIAs
- Peer review and testing

#### Key Objectives

- Enable the architectural discussion among projects in the area of IoT/Edge and Cloud to create a continuum.
- Identification of the thematic areas and building blocks.
- Understanding the contribution of each project to the thematic areas

Lead



### MetaOS

	<b>aerOS</b> aerOS is a European the edge-to-cloud c aerOS is to design an <a href="#">Learn more</a>
	<b>FluidOS</b> FLUIDOS (Flexible, so scattered across her <a href="#">Learn more</a>
	<b>ICOS</b> VEDIoT – "Very Effic cases in key sectors devices utilising dist research experiment <a href="#">Learn more</a>
	<b>NebulOuS</b> NebulOuS will devel fog nodes, in conjun substantial research and optimal applica <a href="#">Learn more</a>
	<b>NEMO</b> Introducing an open methods, tools, testin <a href="#">Learn more</a>
	<b>NEPHELE</b> Enable efficient, relio compute Cloud-Edg edge computing orca technologies. <a href="#">Learn more</a>

# Report 3

## Guidance on integration of IoT/Edge in Data Spaces

### Standardisation

IoT & Edge Landscape Report

Gap Analysis Report

IoT Impact Beyond 5G Report

Computing Continuum Report

Ontology Landscape Report

**Guidance on integration of IoT/Edge in Data Spaces**

Landscape of EU funded projects

(High Level Architectures and Digital Twins)

(Report on continuum)



### Guidance for the Integration of IoT and Edge Computing in Data Spaces

Release 1.0

AIOTI WG Standardisation  
Task Force High Level Architecture

23 September 2022

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# Impact of Report 3

- Preliminary work item in ISO/IEC JTC 1/SC 41 IoT and Digital twins

## Guidance on the integration of IoT and digital twins in data spaces

ISO/IEC JTC 1/SC 41/AG 31 Draft  
April 2023

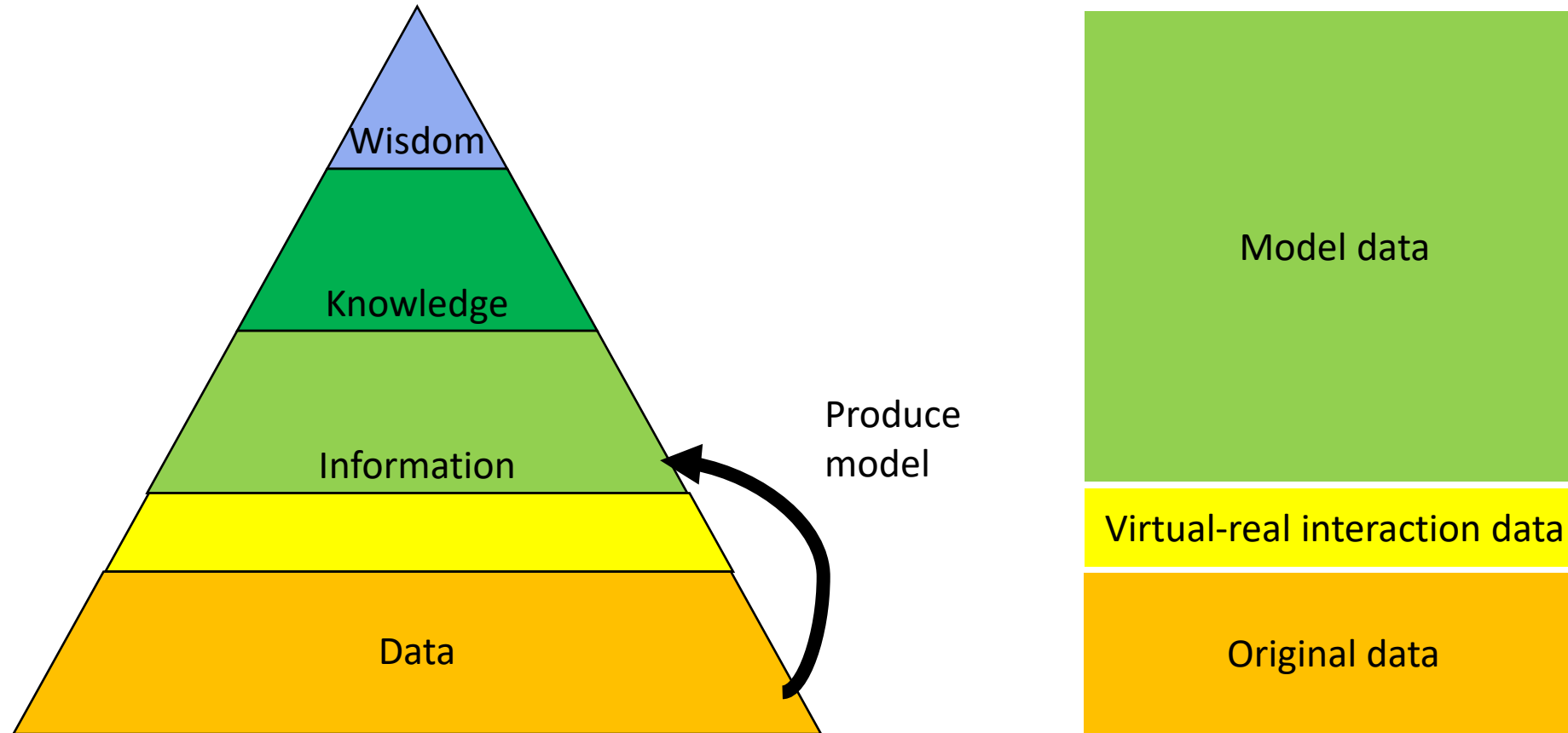
Source (Antonio Kung – FR, AIOTI, Jieshan – CN, Jan de Meer - DE)

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# Impact of Report 3

## Guidance on integration of IoT/Edge in Data Spaces



Mapping DIKW pyramid to digital twins

# Report 4

## Standardisation

IoT & Edge Landscape Report

Gap Analysis Report

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in Data Spaces

Landscape of EU funded projects

**(High Level Architectures and  
Digital Twins)**

(Report on continuum)

## High Level Architecture and digital twins

- Common initiative AIOTI, BDVA/Adrae, StandICT/HSBooster
  - Antonio Kung, Arne Berre, Ray Walshe
- Context
  - Horizon projects on digital twins
  - Strategic liaison with ISO and ITU-T

# Impact of Report 4

## High Level Architecture and digital twins

### Standardisation

IoT & Edge Landscape Report

Gap Analysis Report

IoT Impact Beyond 5G Report

Computing Continuum Report

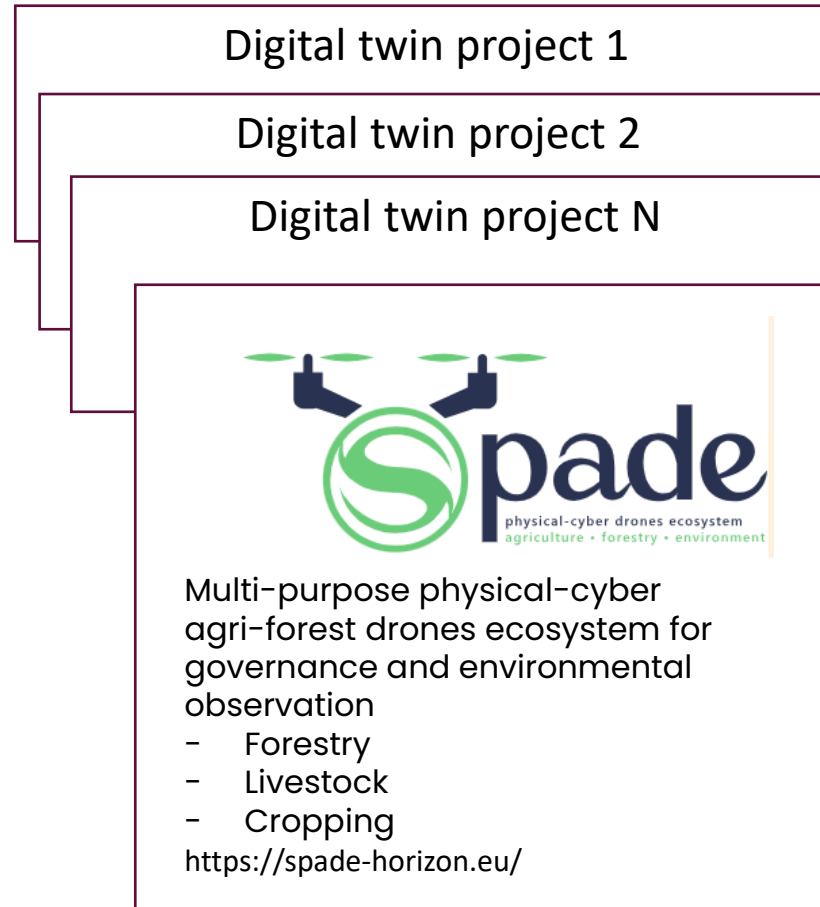
Ontology Landscape Report

Guidance on integration of IoT/Edge  
in Data Spaces

Landscape of EU funded projects

**(High Level Architectures and  
Digital Twins)**

(Report on continuum)



Digital Twin Reference  
Architecture

ISO/IEC 30188

Security and Privacy of  
Digital Twins

ISO/IEC 27568

Systems of systems UAS  
(Unmanned Aircraft Systems  
Reference Architecture

ISO/IEC 22080, ISO/IEC 27115



# Thank you for listening

Any questions?

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