European projects on IoT and digital twins

Svetoslav Mihaylov

Policy Officer Internet of Things
DG CNECT
European Commission

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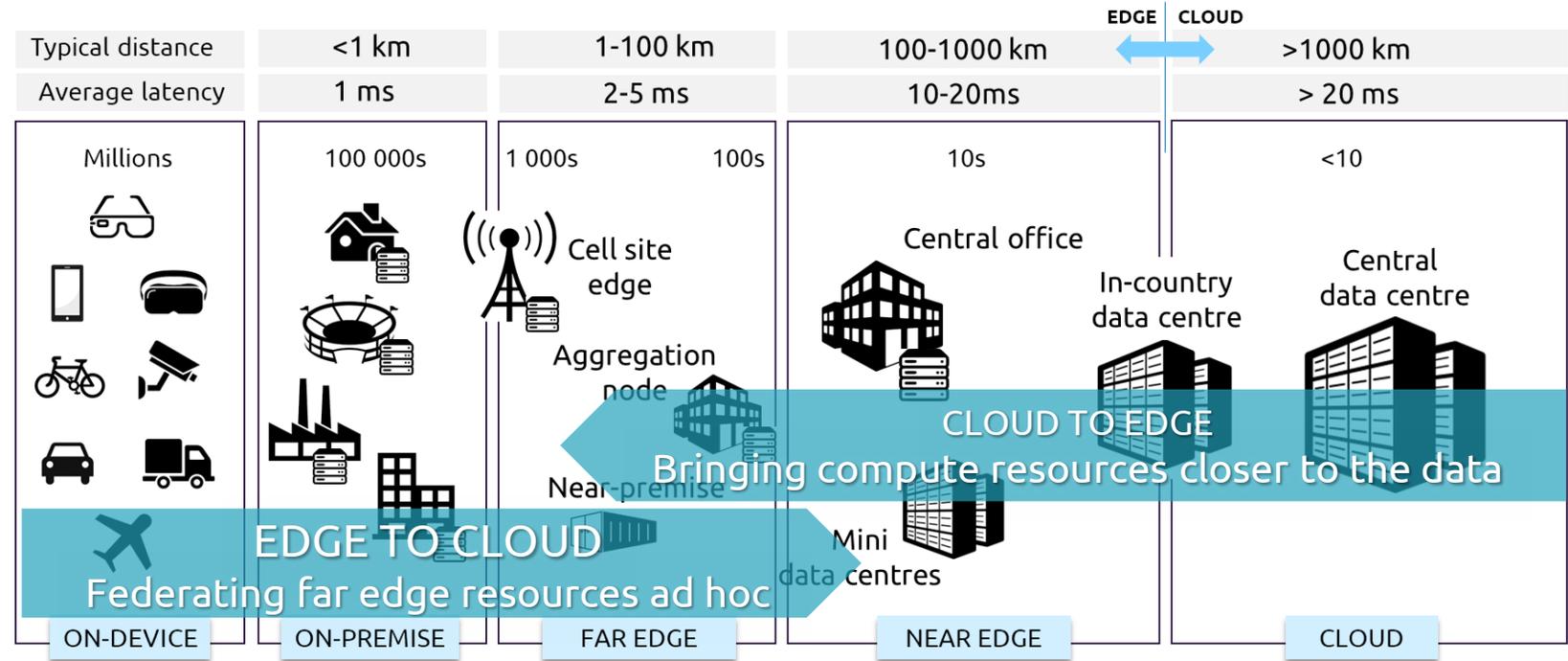
EU policies

- Digital Decade

  - EU digital ambitions in key areas -> cloud computing, AI, data and connectivity.

  - Targets e.g. more than 10.000 edge nodes by 2030; 75% of cloud, AI and big data uptake by EU enterprises in 2030

- Digital Strategy – Common European Data Spaces

- Digital legislation - Data Act, Data Governanace Act, Digital Services Act, Digital Market Act, Artificial Intelligence Act, Interoperable Europe Act, Cyber-Resilience Act, etc.

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Digital Decade objectives for the cloud & edge computing continuum by 2030

Digital Decade policy programme - EU digital ambitions in key areas -> cloud computing, AI, data and connectivity.

2030 DIGITAL COMPASS

THE EUROPEAN WAY FOR THE DIGITAL DECADE

- ✓ **>10.000 edge nodes by 2030**

- ✓ **75% of cloud, AI and big data uptake by EU enterprises in 2030**

				EDGE	CLOUD
Typical distance	<1 km	1-100 km	100-1000 km	↔	>1000 km
Average latency	1 ms	2-5 ms	10-20ms		> 20 ms

Millions	100 000s	1 000s 100s	10s	<10

Cell site edge

Central office

In-country data centre

Central data centre

Aggregation node

CLOUD TO EDGE
Bringing compute resources closer to the data

Near-premise

Mini data centres

EDGE TO CLOUD
Federating far edge resources ad hoc

ON-DEVICE   ON-PREMISE   FAR EDGE   NEAR EDGE   CLOUD

Energy   **Rail**   **Manufacturing**   **Aerospace-defence**   **...**

Mobility   **Farming**   **Health**   **Public administration**

Increased autonomy at the edge

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Edge computing projects and IoT pilots

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028

Edge

ICT-56-2020 Next Gen. Internet of Things (RIA) 48 M€

H-CL4-2021-DATA-01-05: Future European platforms for the Edge: Meta Operating Systems (RIA) 59 M€

https://eucloudedgeiot.eu/

H-CL4-2022-DATA-01-03: Programming tools for decentralised intelligence and swarms (RIA) 37 M€

IoT pilots

H2020-DT-TDS-01-2019 Smart and healthy living at home (IA) 38 M€

H2020-DT-2018-2 Interoperable and smart homes and grids (IA) 30 M€

H2020-DT-2018-2 Agricultural digital integration platforms (IA) 28 M€

H-CL4-2024-DATA-01-03 Piloting emerging Smart IoT Platforms and decentralized intelligence (IA) 45 M€

Commission

Timeline of the implementation of the HE edge computing projects and IoT pilots by cluster

Digitalisation of energy support in EU programmes

*Projects factsheets: BRIDGE, Cooperation between Horizon 2020 and Horizon Europe projects in the fields of smart grid, energy storage, islands, and digitalisation - Publications Office of the EU (europa.eu)
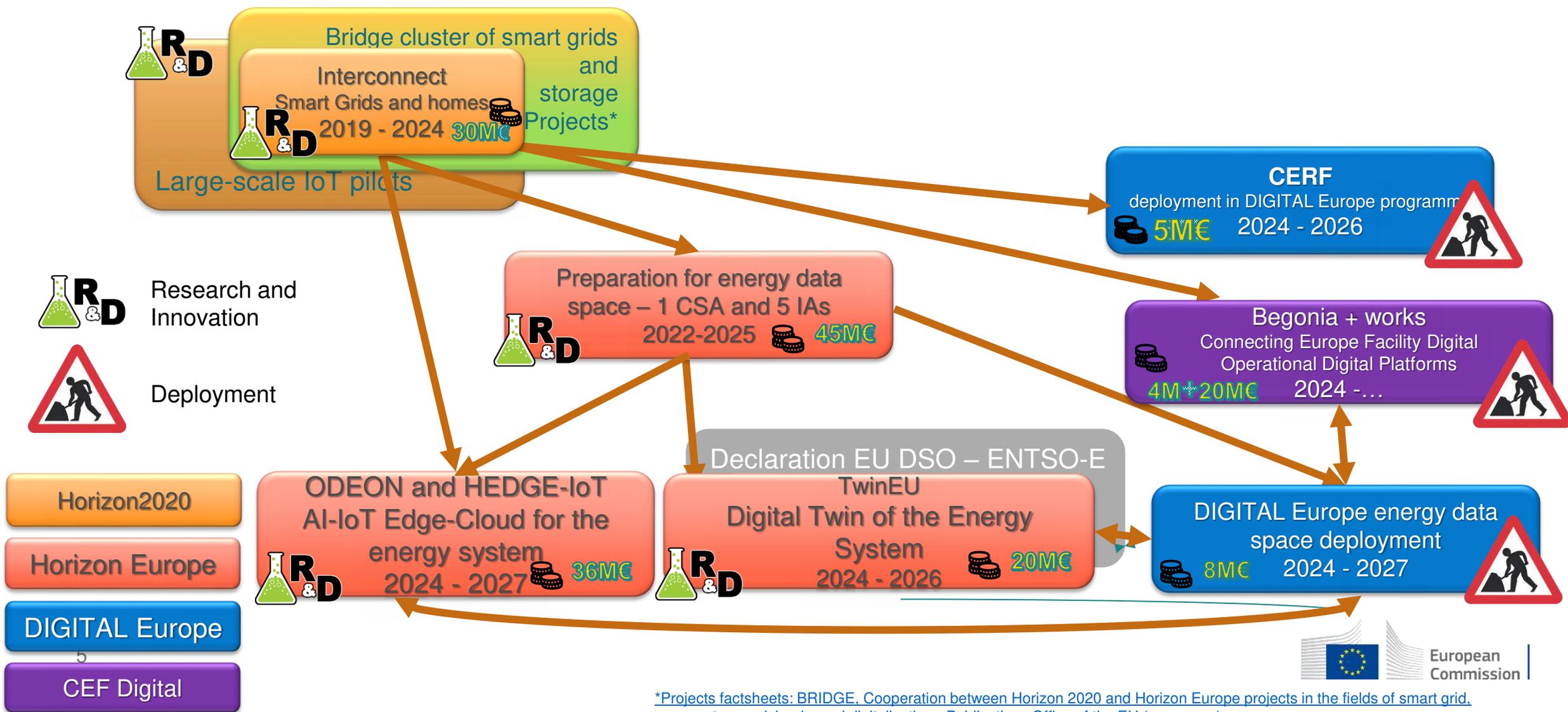
Towards a Common European Energy Data Space

**Cluster of Horizon Europe preparatory actions – developing solutions for a Common European Energy Data Space (CEEDS):**

int:net

EDDIE
EUROPEAN DISTRIBUTED
DATA INFRASTRUCTURE
FOR ENERGY

DATA CELLAR

SYNERGIES

Enershare

omega-x

Prepare the **blueprint** for the CEEDS

- **Reference architecture**, based on the innovation actions, which includes technical specifications for the realization

- **Technical, semantic and governance aspects of interoperability**, specifically tailored for energy data spaces
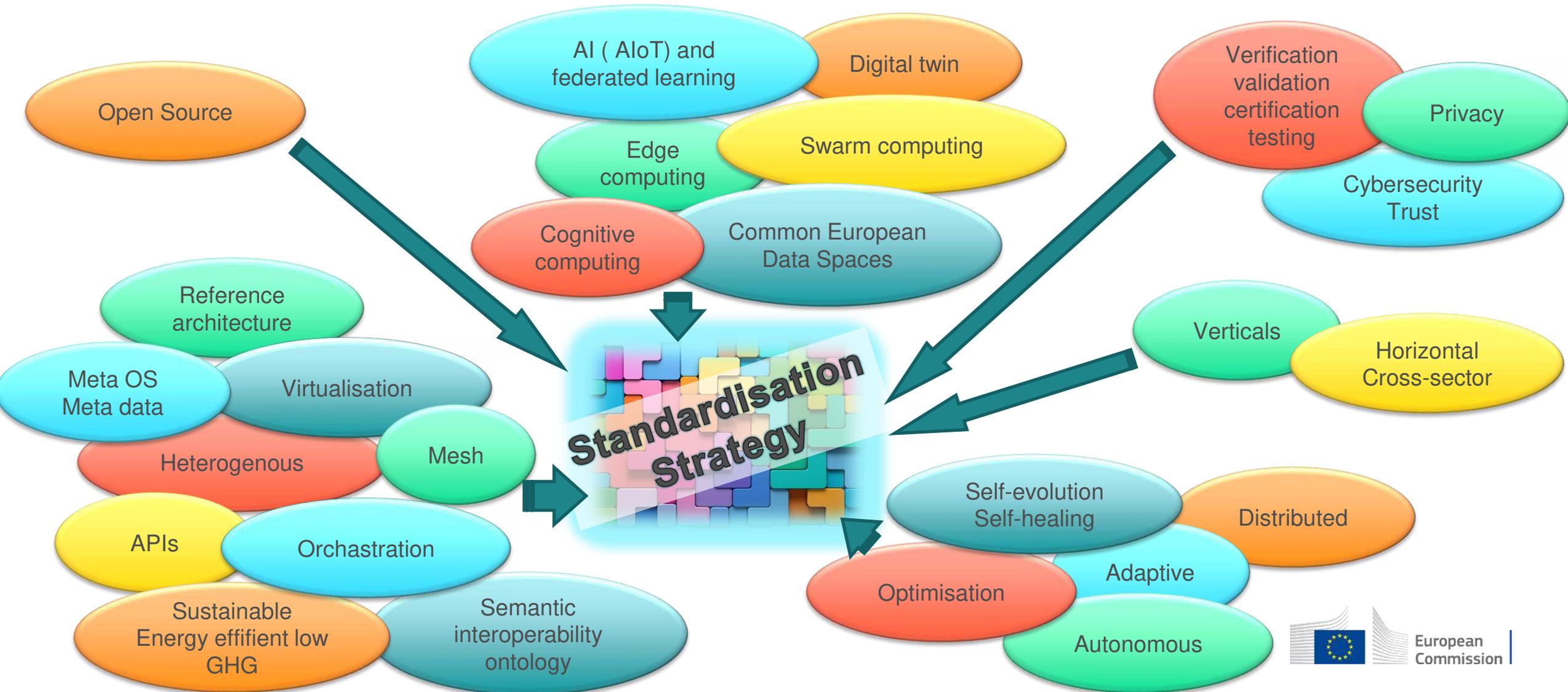
- **Define the key use cases**

IAs are already piloting use cases using the energy data space

DIGITAL Europe deployment action for the CEEDS
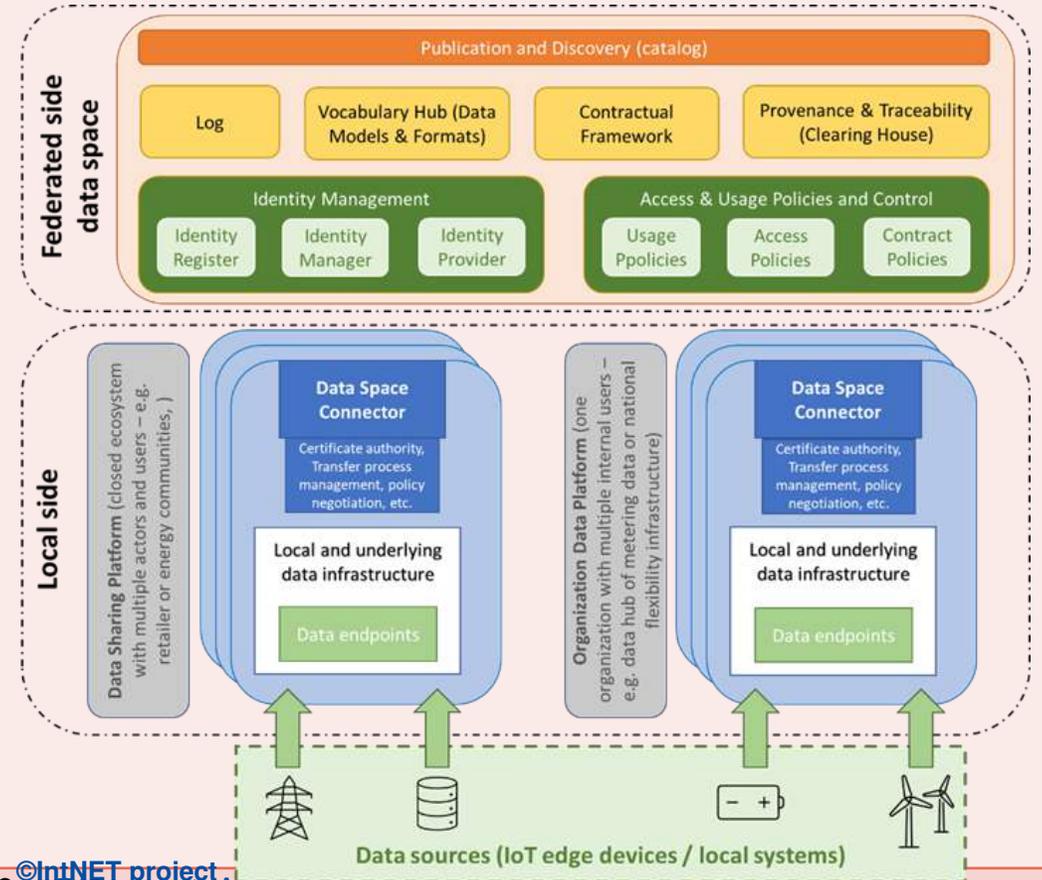
©IntNET project

- EU contribution 8 M€ (co-funding)
- To open in Q1 2024

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Areas driving IoT evolution and standardisation

- Open Source
- AI (AIoT) and federated learning
- Digital twin
- Edge computing
- Swarm computing
- Cognitive computing
- Common European Data Spaces
- Verification validation certification testing
- Privacy
- Cybersecurity Trust
- Reference architecture
- Meta OS Meta data
- Virtualisation
- Mesh
- Heterogenous
- APIs
- Orchastration
- Sustainable Energy effifient low GHG
- Semantic interoperability ontology
- Verticals
- Horizontal Cross-sector
- Self-evolution Self-healing
- Distributed
- Adaptive
- Optimisation
- Autonomous

Standardisation Strategy

Thank you

European Commission