



#HorizonEU

HORIZON EUROPE

HORIZON-CL4-2023/24-DATA-XX
Dest. 3: From Cloud to Edge to IoT
for European Data

2021 – 2027

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A European Data Strategy

EU Data Strategy

Cloud actions:

- Cloud Rulebook
- Co-Investments in cloud-to-edge services, cloud federation and marketplaces.

Data actions:

- New legislation (Data Governance Act & Data Act)
- Co-investments in EU data spaces

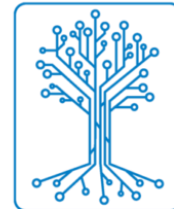
DEP

European
Common
Data spaces

European
Alliance for
Industrial
Data, Edge
and Cloud

Coordination

Federation &
interoperability
standards

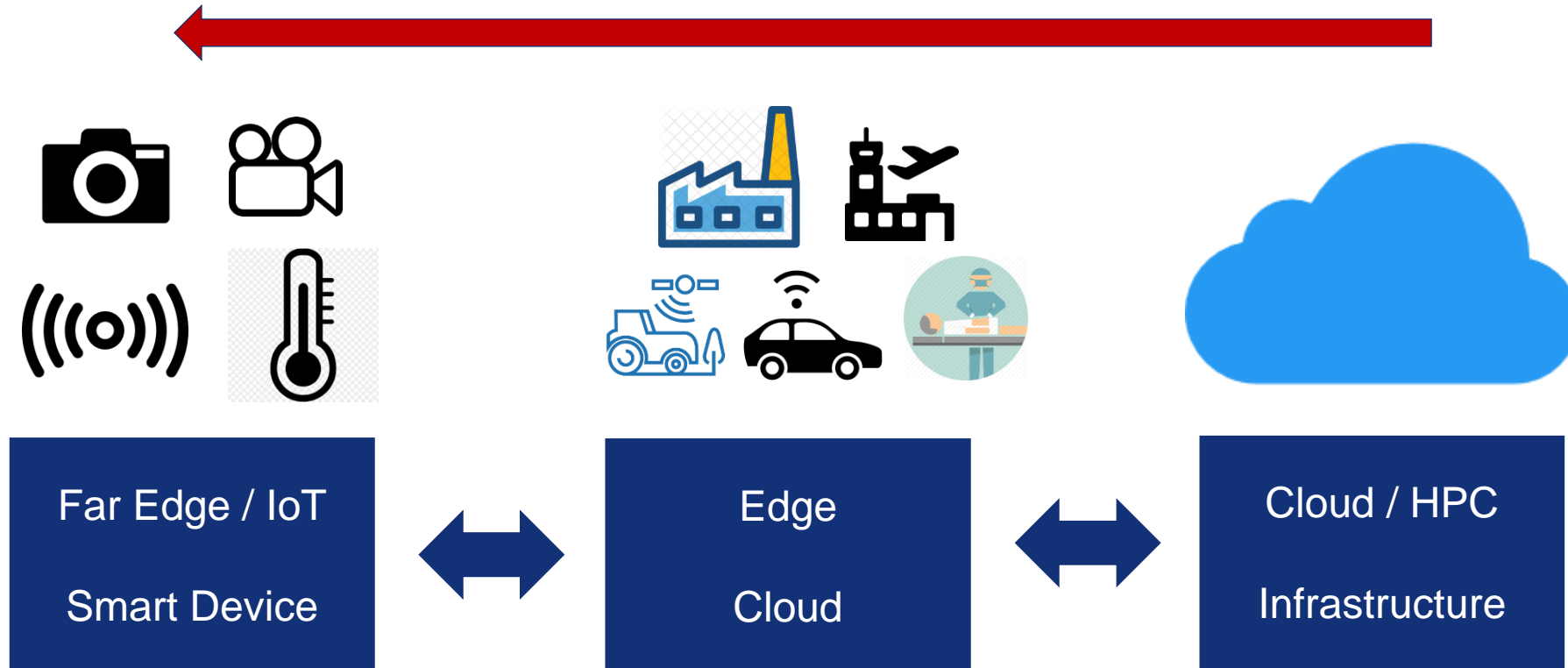


GAIA-X

Use cases;
technical
architecture

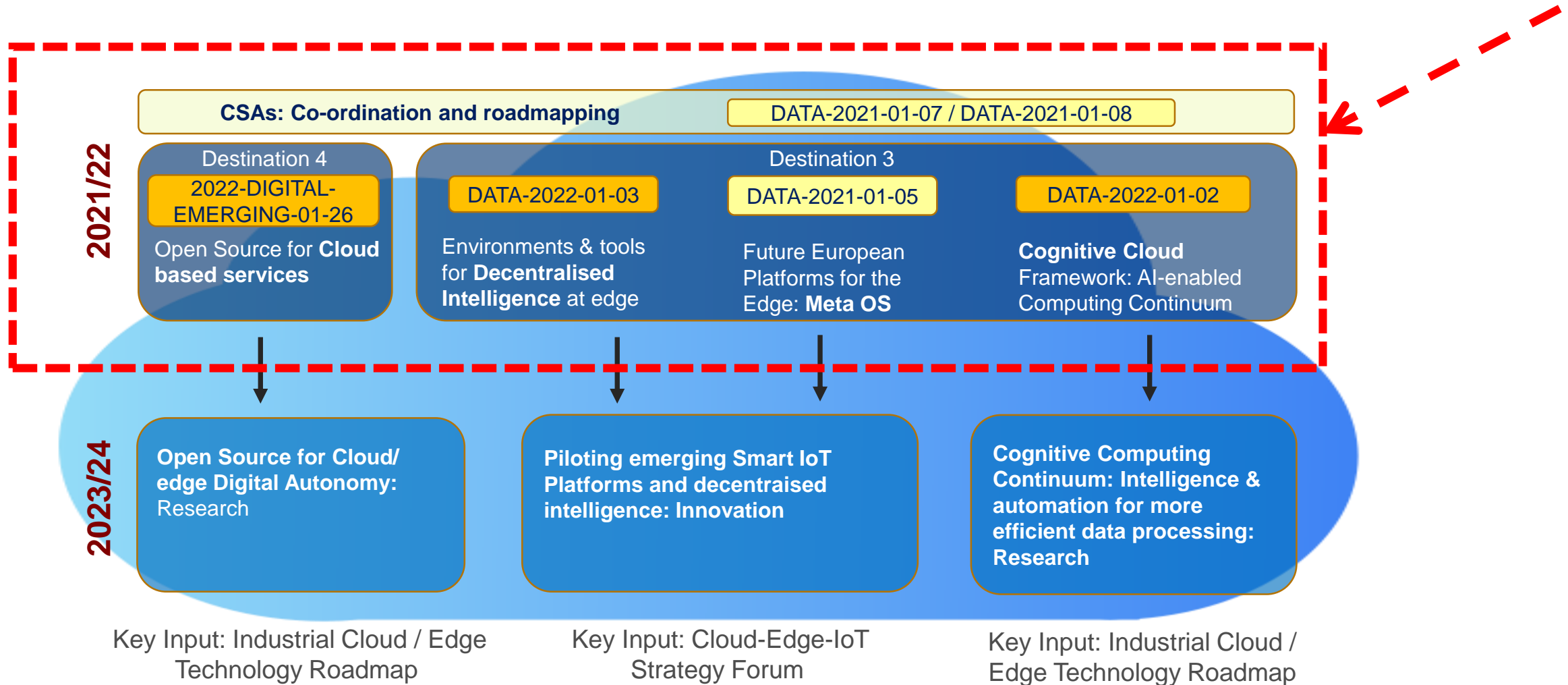
Cloud-Edge-IoT Orchestration

Trend/Paradigm Shift: from Cloud to Edge
Bringing compute resources closer to the data



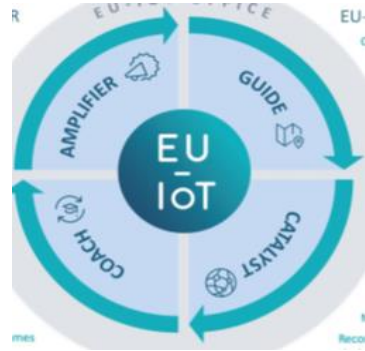
Federating far edge resources ad hoc via wireless (5G, mesh)
to provide cloud resources close to the edge

Cloud - Edge – IoT: A strategic initiative over 4 years +



Scaling up – Open Calls

Building the European Cloud, Edge & IoT Continuum for business and research



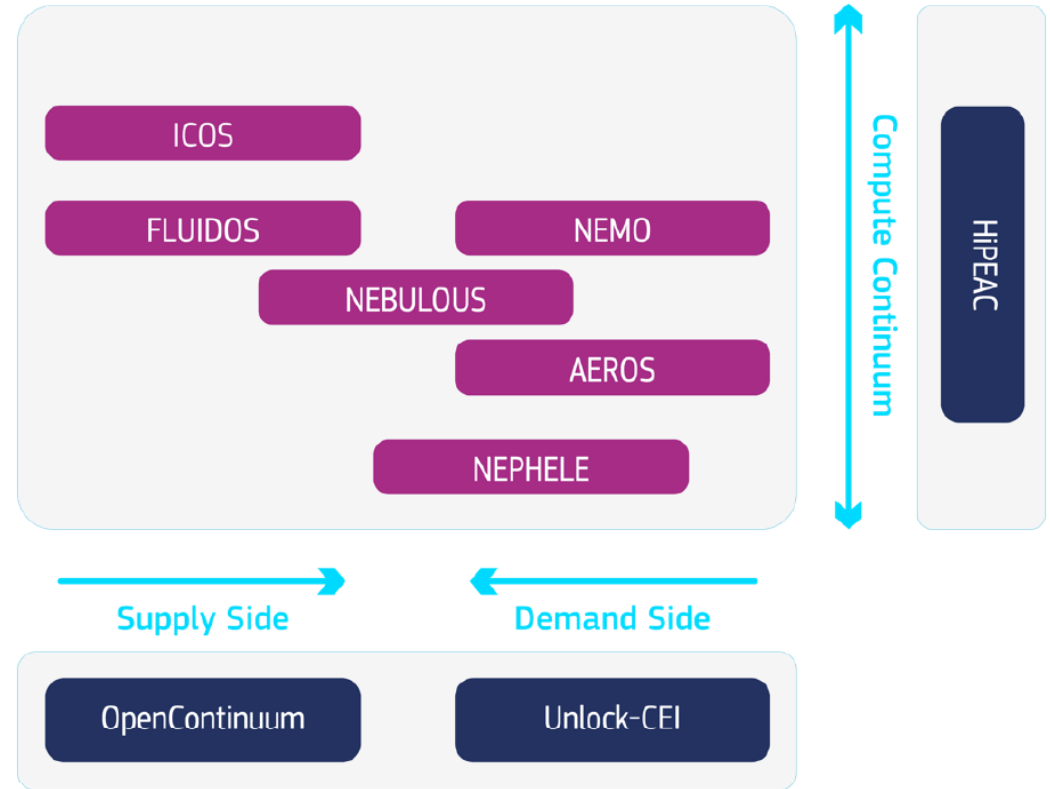
Next Generation IoT Cluster
assist-iot



IntelliIoT



HPC
Cloud Edge
5G Network Edge
Operational Edge
Device Edge

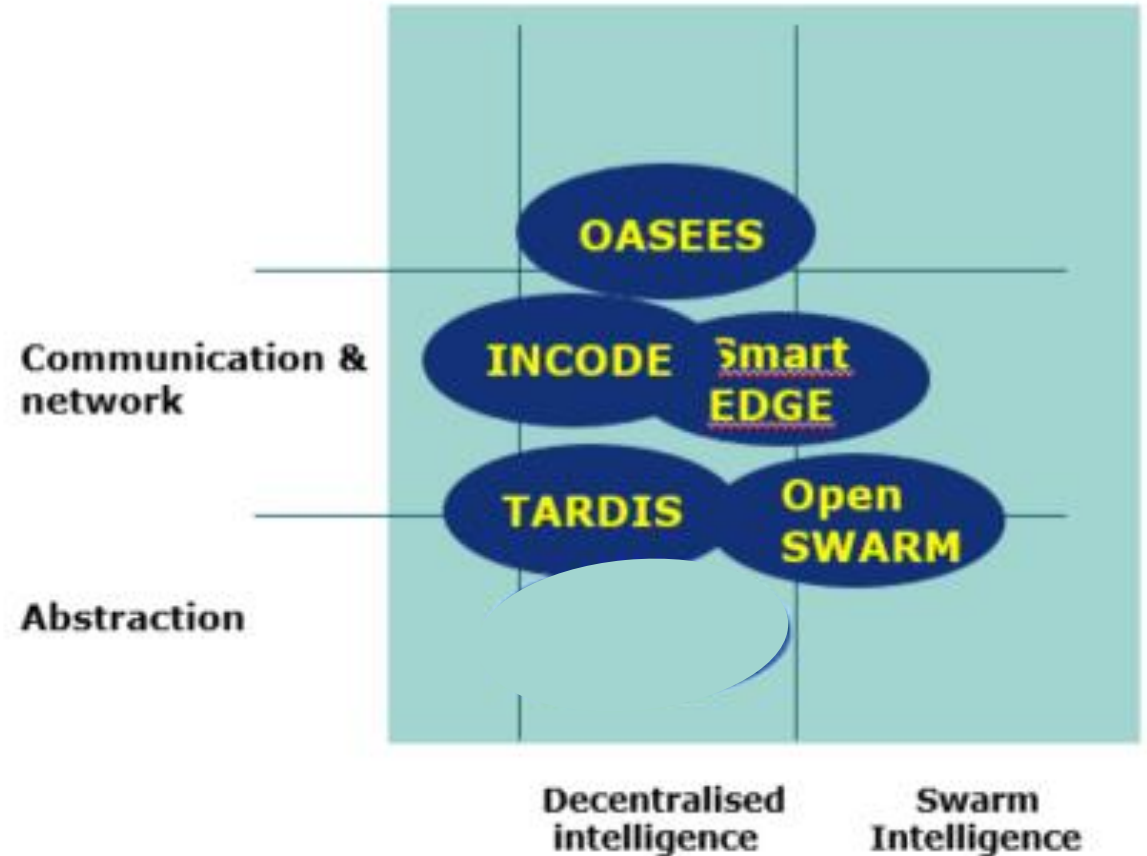


Driving Innovation => Edge OS Platform
Cross sector task forces => Edge Standards

Swarm Initiatives launched on 1 January 2023

Programming Tools and Methods

- Emerging concepts for smart edge-connected nodes with decentralized intelligence and
- Dynamic groups of nodes across the device-edge-cloud continuum aiming at Swarm Intelligence, methods for node and system abstraction for collaborative IoT.



Open source for cloud-based services portfolio

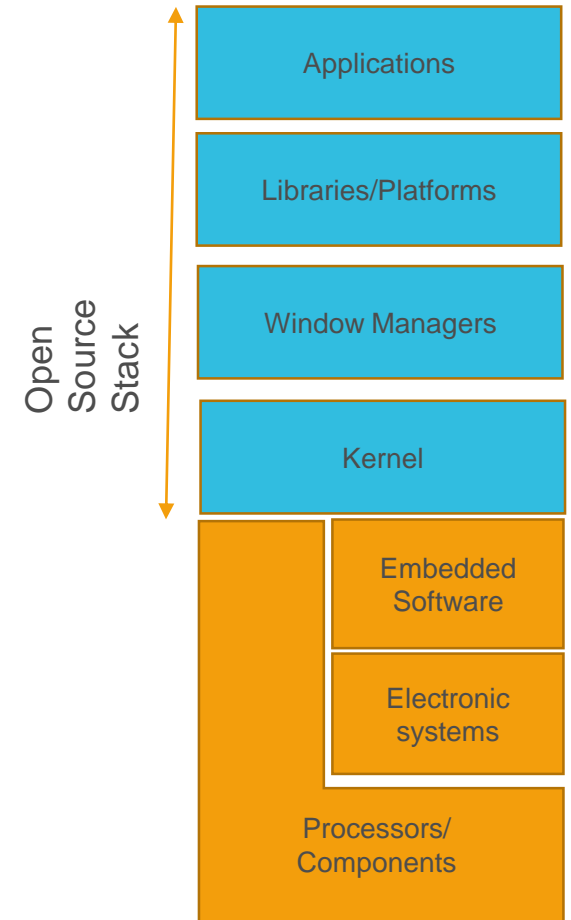
Europe cannot claim it enjoys **Digital autonomy** when it comes to the deployment of Cloud Infrastructures.



Leveraging the power of **Open Source Software and Hardware** components, projects are expected to fill in the gaps for being able to integrate the outcomes of flagship projects (**EPI**) in European Cloud infrastructures.



- ❑ [AERO](#)
- ❑ [OpenCUBE](#)
- ❑ [RISER](#)
- ❑ [Vitamin-V](#)



Cognitive Cloud project portfolio

HORIZON-CL4-2022-DATA-01-02 Cognitive Cloud Framework: AI-enabled Computing Continuum

The **Cognitive Cloud** responds and **adapts intelligently** to changes in application behaviour and data variability and offers **automatic deployment, mobility and adaptability of services from cloud to edge.**



Application developers will be empowered with **greater control over network, computing and data infrastructures and services**, and the end-user will benefit from seamless access to a continuous service environment

9 RIA projects kicked-off in January 2023
(in 'slide view' mode click on each project for more info)

- [CloudSkin](#)
- [COGNIFOG](#)
- [CODECO](#)
- [DECICE](#)
- [MLSysOps](#)
- [EDGELESS](#)
- [AC3](#)
- [ACES](#)
- [SovereignEdge.Cognit](#)

Technology Drivers

Reasoning '*on the go*'
(Edge and Core)



Enhanced Secure Edge

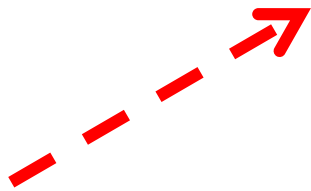


Real-time response

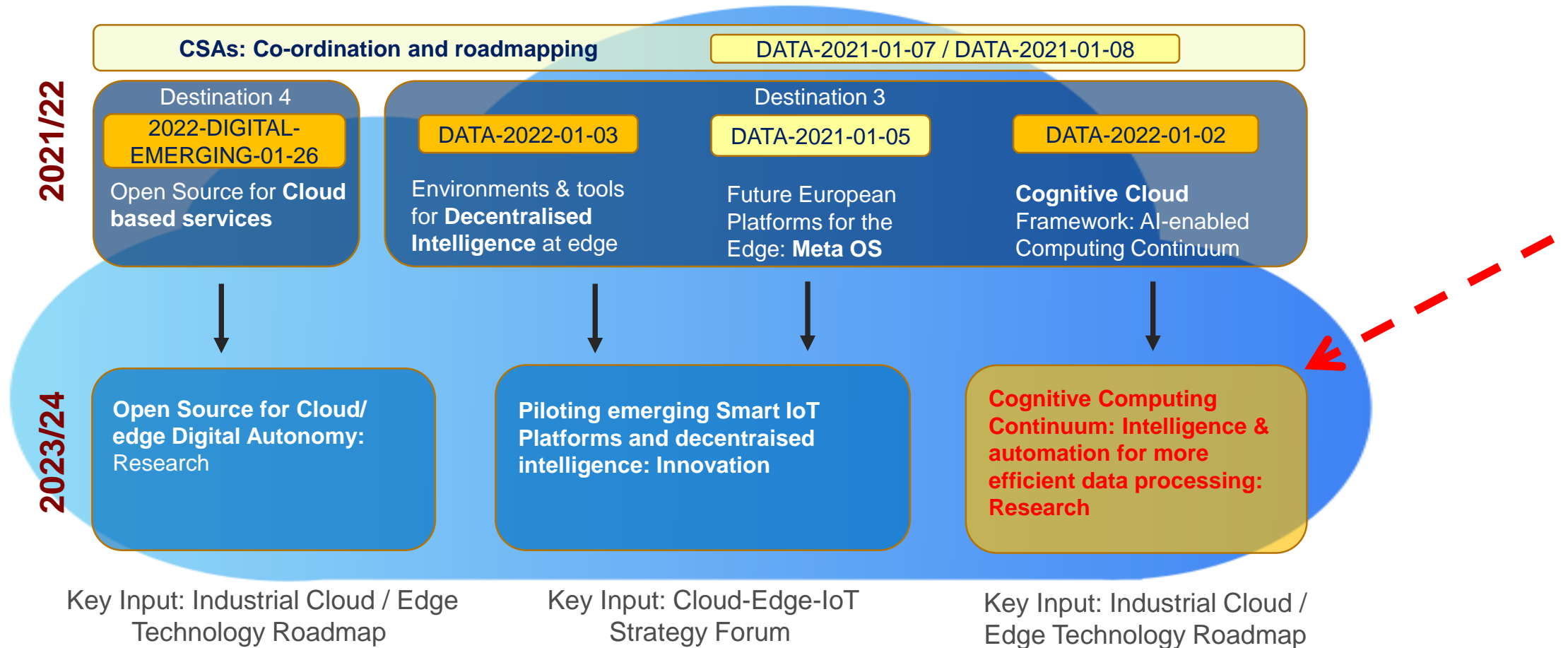
Green solutions

Seamless Service Architecture

Cloud-edge-IoT
Orchestration



Cloud - Edge – IoT: A strategic initiative over 4 years +



HE CL4 - Dest. 3, Section: From Cloud to Edge to IoT for European Data

Pilot Actions - IA: -- 45 Mill €

- Piloting emerging Smart IoT Platforms and decentralized intelligence

RIA – 28 Mill €:

- Cognitive Computing Continuum: Intelligence and automation for more efficient data processing

CSA (5 Mill €):

- **Horizontal Activities – 2 Mill €**
of the ‘the ‘Cloud-Edge-IoT’ platform building
→ standards, governance, security, SME/start-ups
- Coordination and Support
of **Cognitive Computing Continuum
research and policy – 2 Mill €**
- **Collaboration with NSF – 1 Mill €**
on fundamental research on new concepts for
distributed computing and swarm intelligence

2023 Calls Open

HORIZON-CL4-2021-DATA-01-05



Future Outlook:

- On Europa: [IoT and the Future of Edge Computing in Europe](#)
- White paper & roadmapping for Next Generation IoT – www.NGIoT.eu CSA
- Alliance AIOTI [Strategic Foresight on Edge Computing](#), [Guidance for the Integration of IoT and Edge Computing in Data Spaces](#)
- Portal for projects, **open calls** and events: www.EUCloudEdgeloT.eu
- [MetaOS Session @IoTWeek.org](#) – MetaOS projects [overview](#)

