

# Smart Data for Smart Energy Solutions

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# A multilayer software architecture

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System of systems coordination – Cloud federation

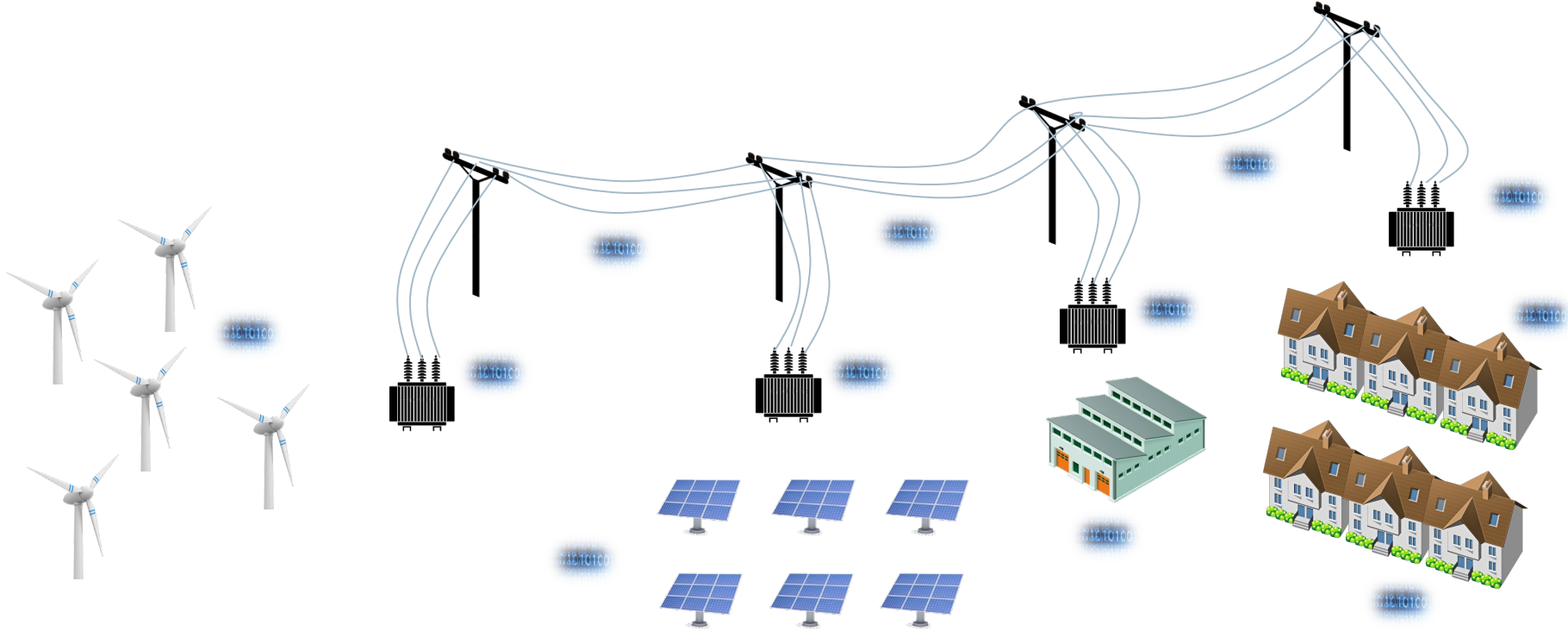
System level control – Cloud systems

Local Control – Edge Systems

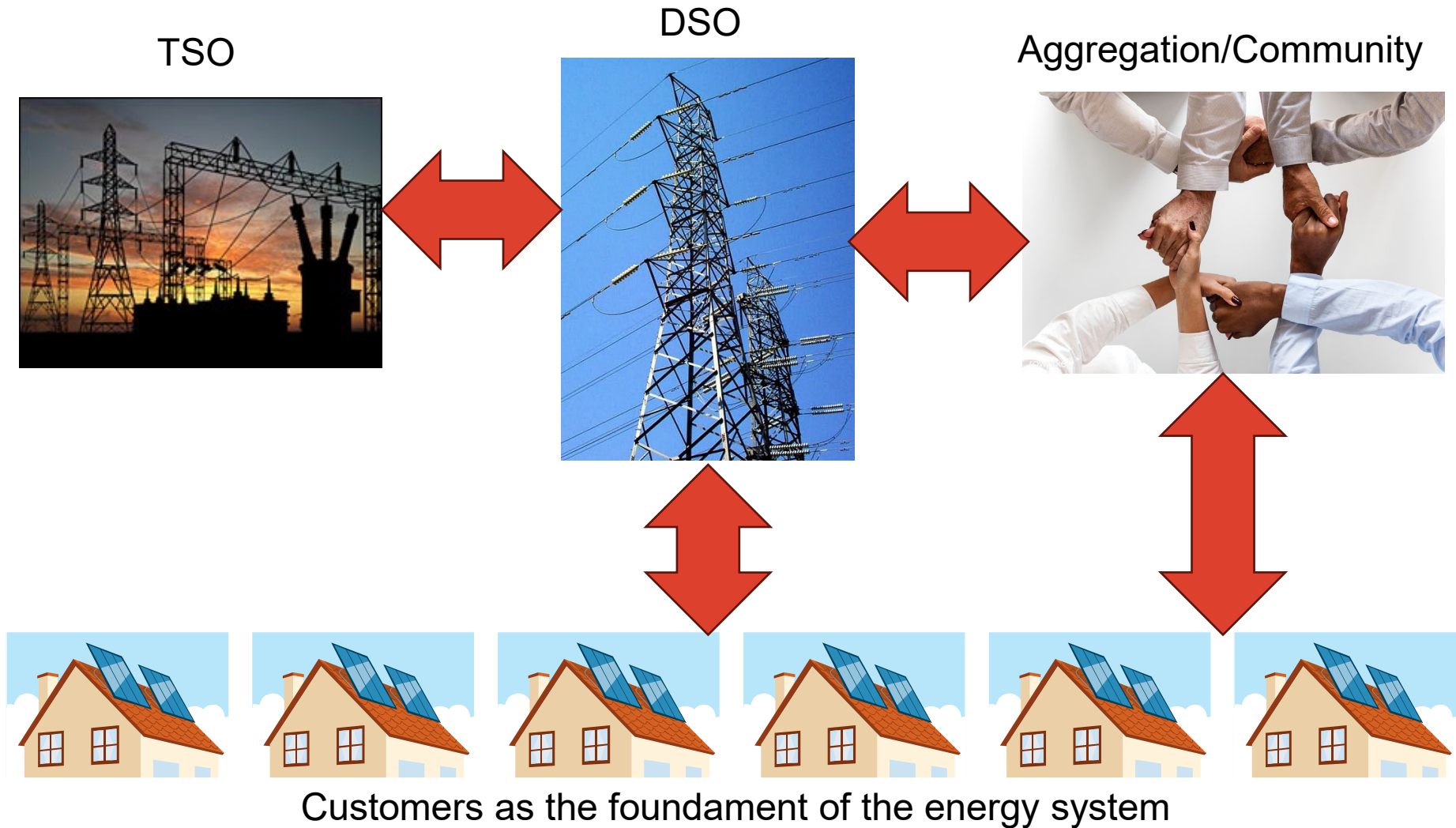
Device-level control – power electronics

# The new role of edge and distribution grids

More data from more points



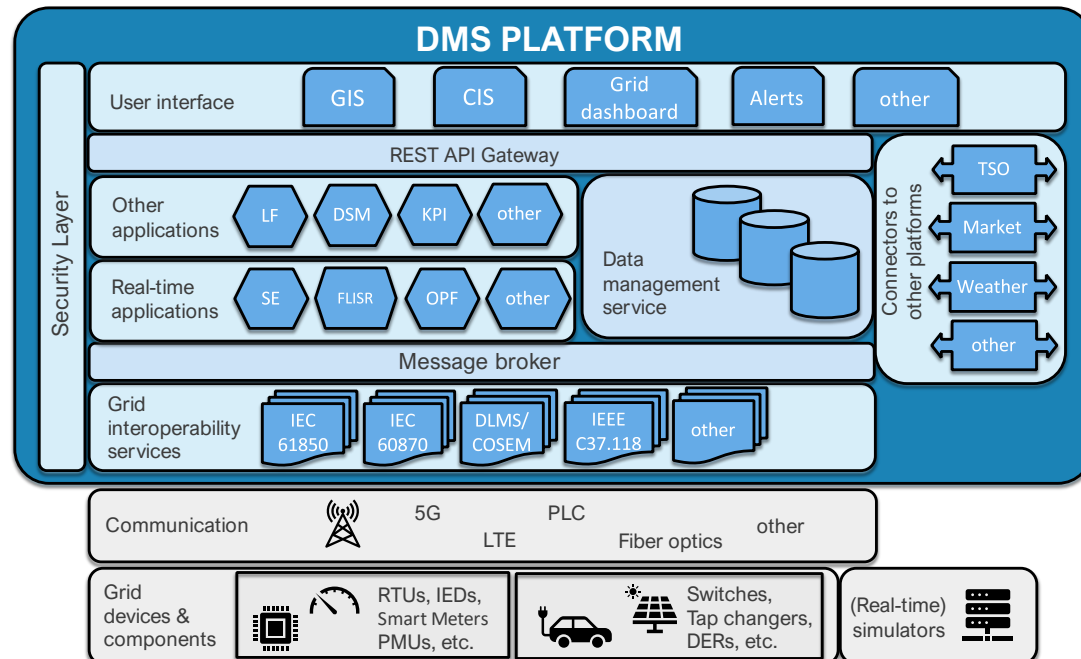
# A new vision for the customers and the Distribution grid



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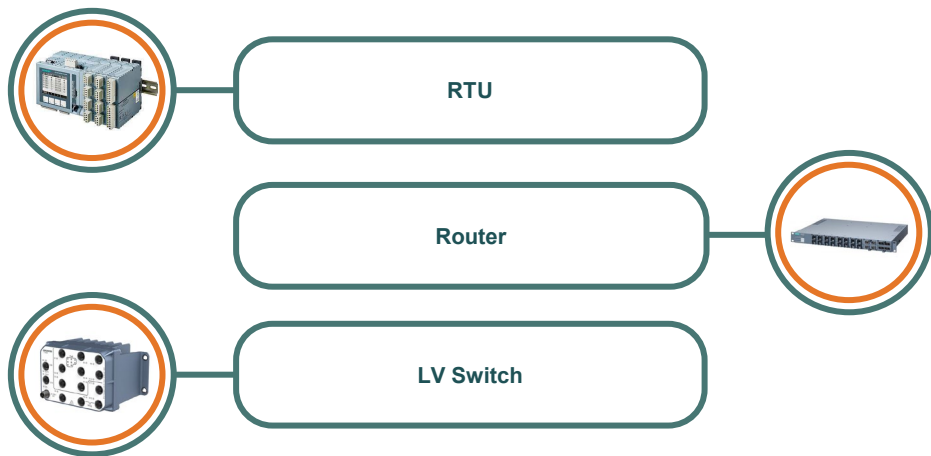
# SOGNO platform and Linux Foundation Energy

- A microservices oriented power system automation platform
  - ≡ A control center software for distribution system operators
    - A power engineering task supported by cloud services
  - ≡ Started as EU project
  - ≡ Now part of the Linux Foundation Energy
- Awarded with "Innovationspreis NRW 2022"



# Hardware on the Field

Several secondary substations already equipped with technological devices that enable the interaction with areti's central systems, started to communicate with Platone ecosystem and its platforms. Thanks to these kind of devices, grid issues detection will be improved.




## Rome



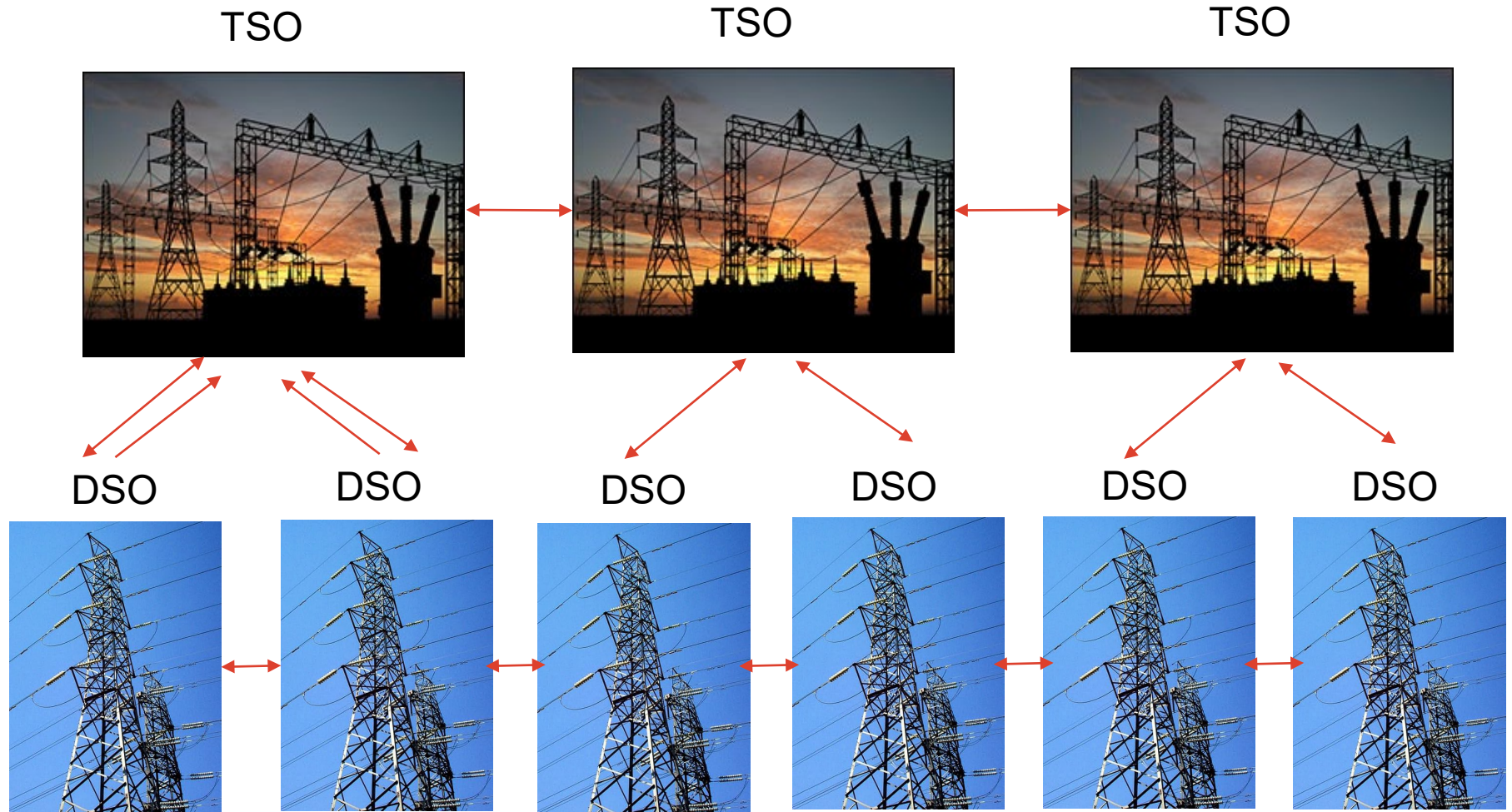
# RomeFlex Areti

Reshaping Operational Method to run grid Flexibility

## Progetto RomeFlex: Flexibility services in the city of Rome



# Bringing grid cooperation to another level ... one network

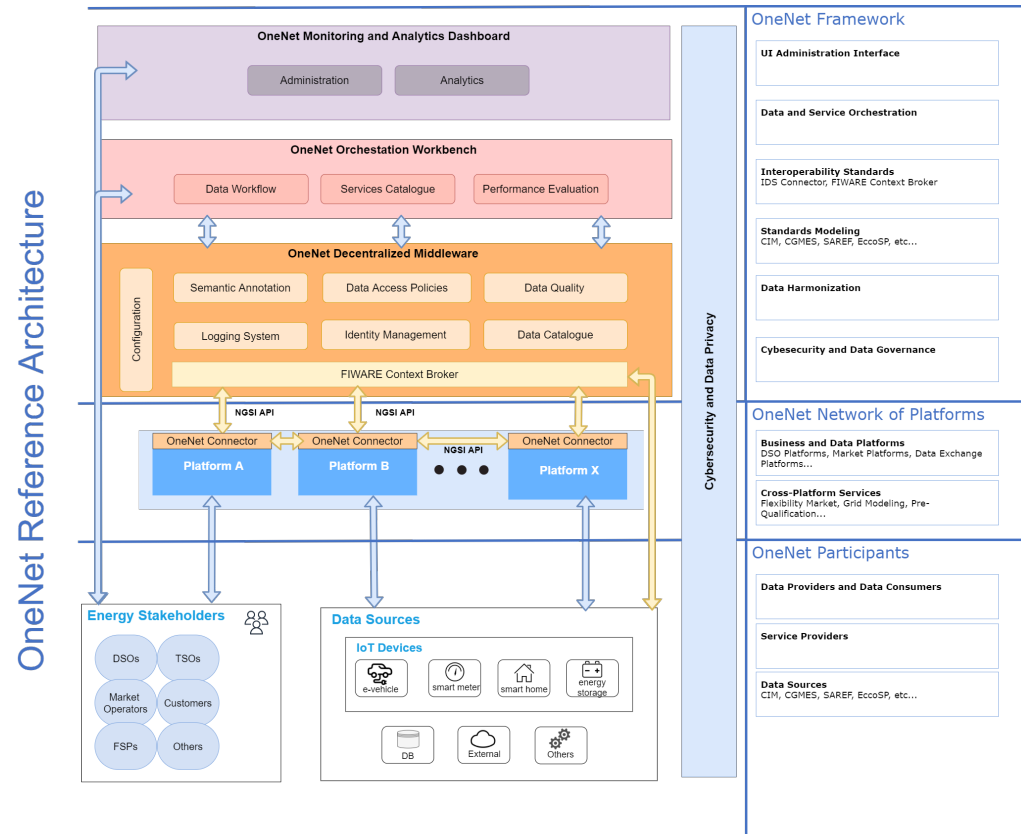


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# OneNet Vision

- To create a **fully replicable and scalable architecture** that enables
- the whole European electrical system to **operate as a single system** in which
- a **variety of markets** allows
- the **universal participation of stakeholders** regardless of their physical location – at every level from small consumer to large producers



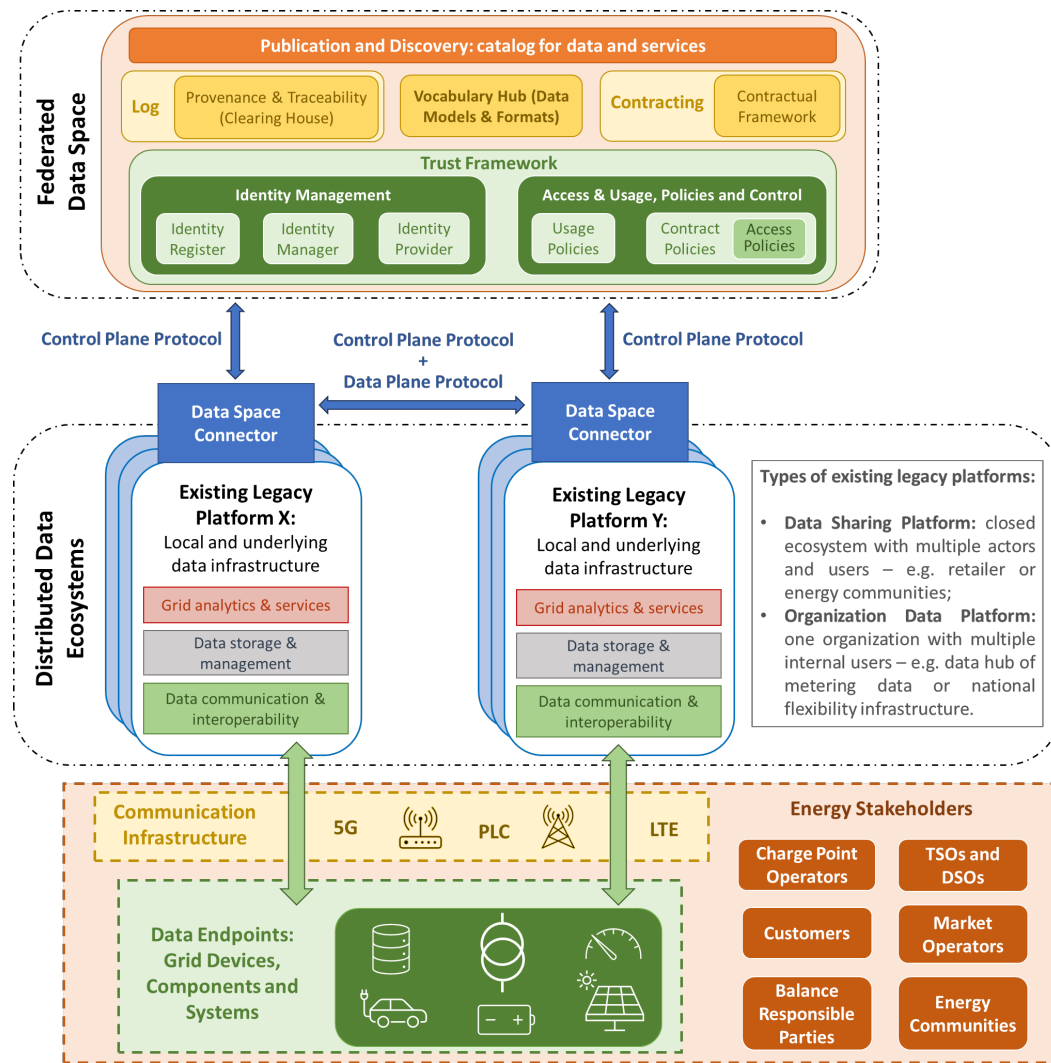
# Energy data spaces cluster

## Blueprint of CEEDS

**Goal:** from Innovation Actions to national initiatives and large-scale deployments of data spaces

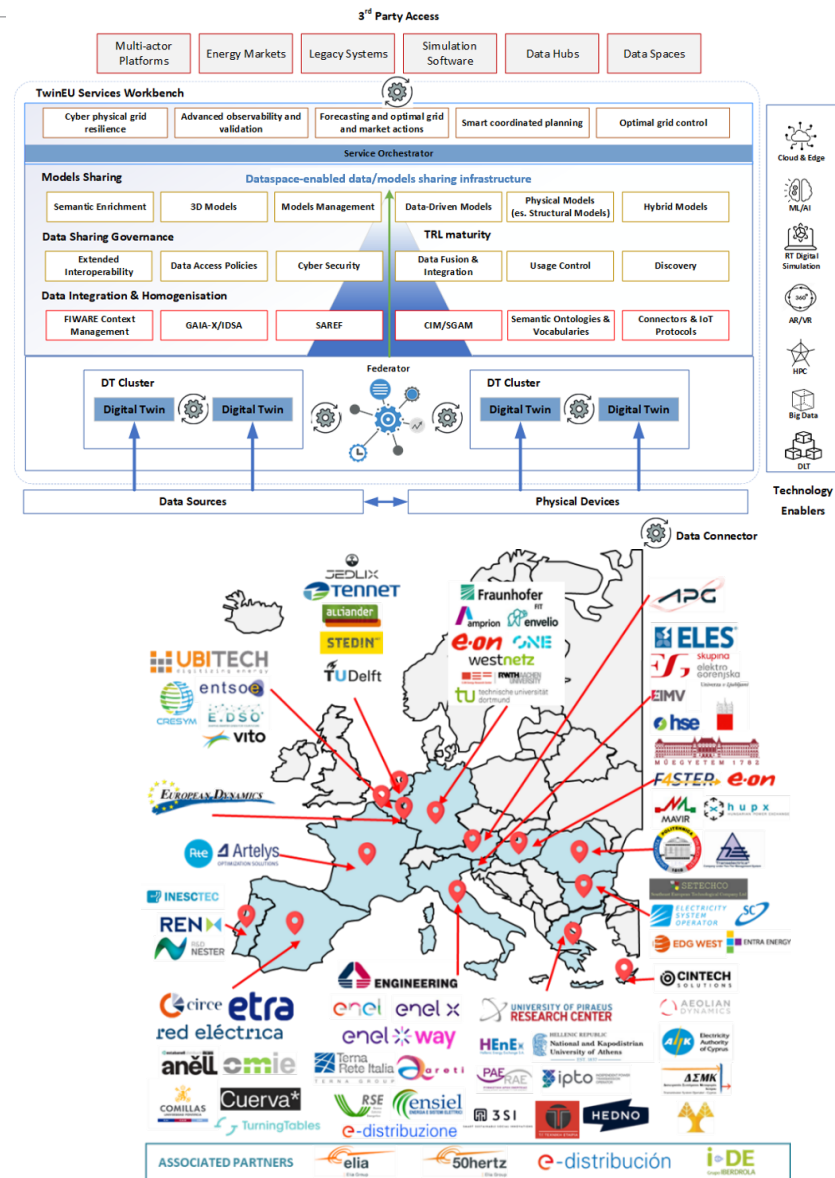
**Content:**

- **Business use-cases** of CEEDS:
  - Scenarios, Actors, Exchanged Data
- **Architecture:** not MVP version, but with complete set of components
- **Interoperability:**
  - Technical
  - Semantic
  - Governance



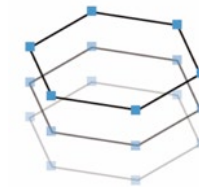
# Building a European Digital Twin: TwinEU

- Large project with more than 70 partners
- Large involvement of key european operators: 15 TSOs and 15 DSOs
- Main ambition to create a system of systems to interconnect digital twins developed at national level
- Strong link with the activity of Data Spaces and OneNet to facilitate data exchange among operators but also between operators and third parties
- Clear plan for long-term sustainability of the results thanks to CRESYM



# Conclusions

- We are moving towards a fully programmable energy systems
- Open solutions are critical to build solutions that are interoperable
- Data spaces are a key ingredient to build a system level view but also to support cross sector use cases.



Flexible  
Electrical  
Networks



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