Agenda

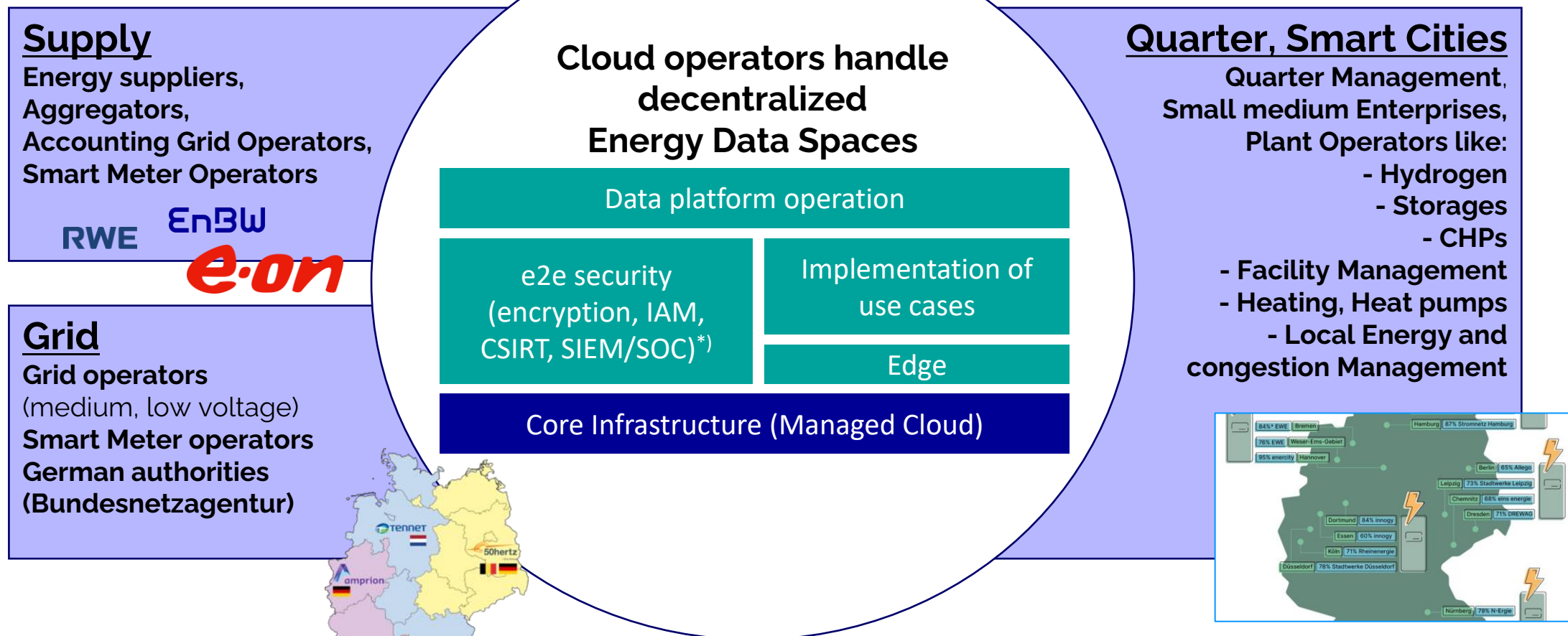# Energy Data Spaces are key for our German Energy Transformation
Phone calls and decentral workaround won't do the job in the new world

Integration of Renewables in congestion management

Integration of green Hydrogen

EV integration

Energy Data Space (EDS)

Local Energy Communities

Flexibilities for grid and supply interactions

Trusted exchange of critical data

gaia-x
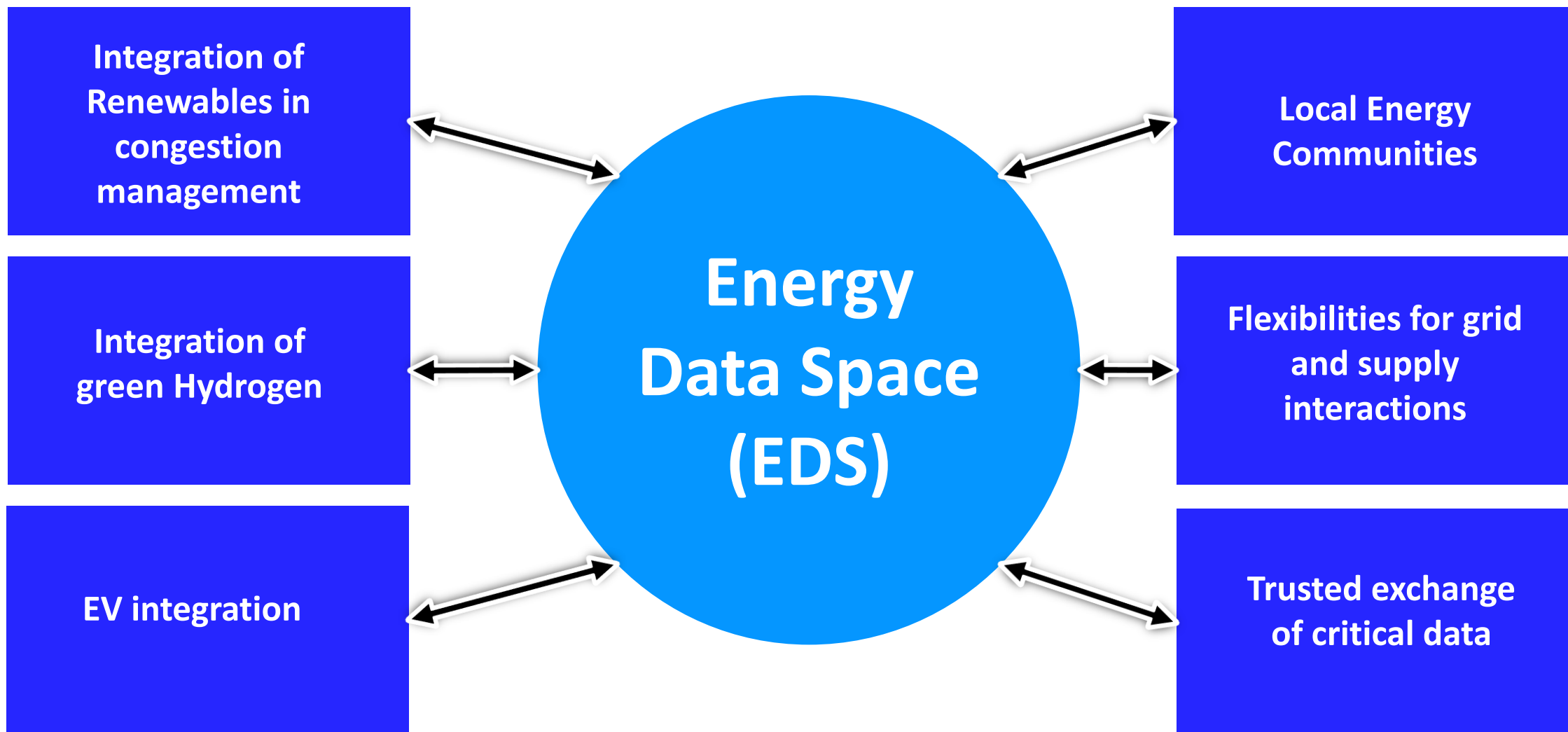
The energy data space covers all upcoming business demands

Cloud operators handle the data between different market roles

gaia-x

Supply
Energy suppliers, Aggregators, Accounting Grid Operators, Smart Meter Operators

RWE EnBW e·on

Grid
Grid operators (medium, low voltage) **Smart Meter operators German authorities (Bundesnetzagentur)**

Cloud operators handle decentralized Energy Data Spaces

Data platform operation

e2e security (encryption, IAM, CSIRT, SIEM/SOC)*)	Implementation of use cases
	Edge

Core Infrastructure (Managed Cloud)

Quarter, Smart Cities
Quarter Management, Small medium Enterprises, Plant Operators like:
- Hydrogen
- Storages
- CHPs
- Facility Management
- Heating, Heat pumps
- Local Energy and congestion Management

*) **IAM**: Identity and Access Management
CSIRT: Computer Security Incident Response Team
SIEM: Security Information & Event Management
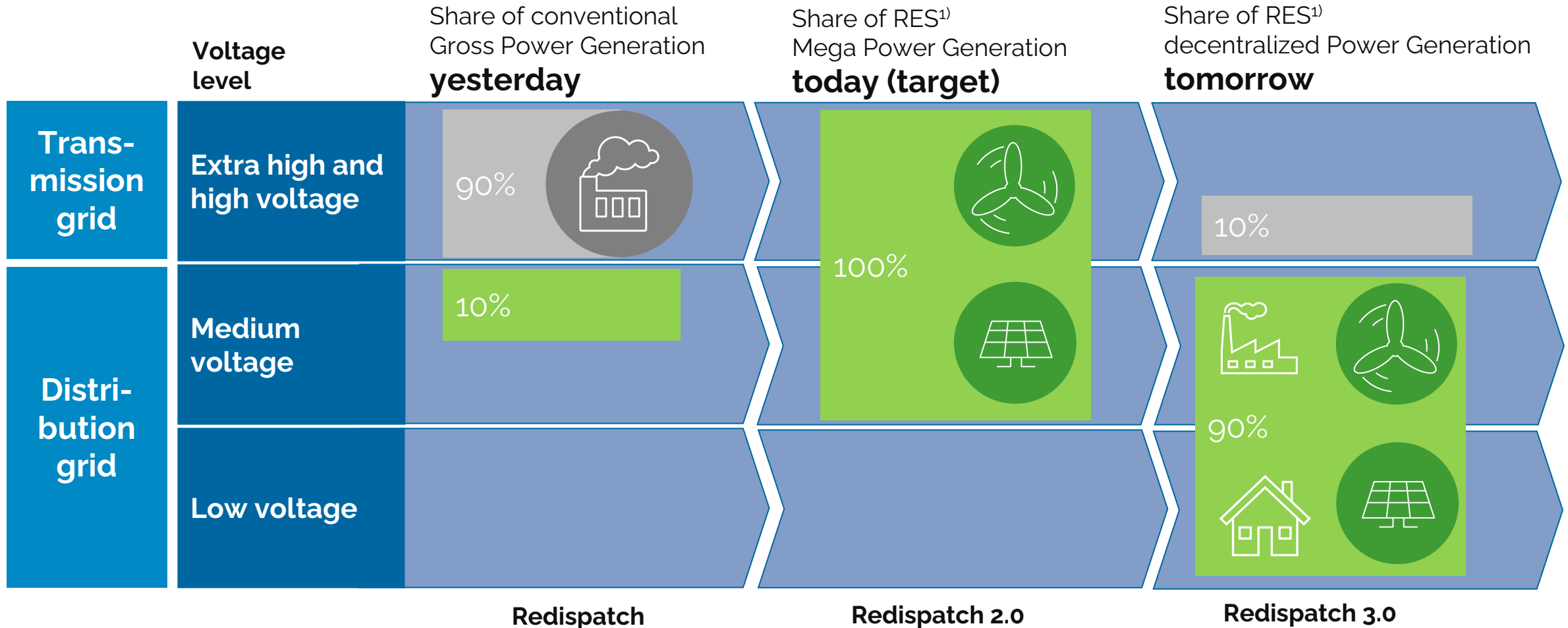**SOC**: Security Operations Center

4

The Energy Data Space and its different levels

Framework for effective and efficient data exchange is necessary for a trouble-free operation

gaia-x

District Operators / Quartiersbetreiber

Applications – App-Store

Forecasts	Scheduling	Congestion Management
Local Energy Trading	Predictive Maintenance	Data provisioning

Grid operators
DSOs

Third parties Cross Sector Industries

Automotive (Catena-X)
Industry 4.0
Smart Living
Smart City
Smart Region
Agriculture
Public (Smart City)
Insurance
Health

Connection + Data Collection

Core Infrastructure (Managed Cloud)
Dataspace + Network
e2e security
(encryption, IAM, CSIRT, SIEM/SOC)
Gaia X Compliant

Data platform deployment + operation

↔ **standard API**

5

Redispatch in Energy Management today and tomorrow, decentralization of energy demand and generation

Redispatch 3.0 as a big challenge of an Energy Data Space

|	Voltage level	Share of conventional Gross Power Generation **yesterday**	Share of RES[1] Mega Power Generation **today (target)**	Share of RES[1] decentralized Power Generation **tomorrow**
Trans-mission grid	**Extra high and high voltage**	90%		10%
Distri-bution grid	**Medium voltage**	10%	100%	90%
	Low voltage			
		Redispatch	**Redispatch 2.0**	**Redispatch 3.0**

1) RES: Renewable Energy Systems

The Gaia-X Data Space Community

Energy is part of a compelling event to actually implement a Data Space
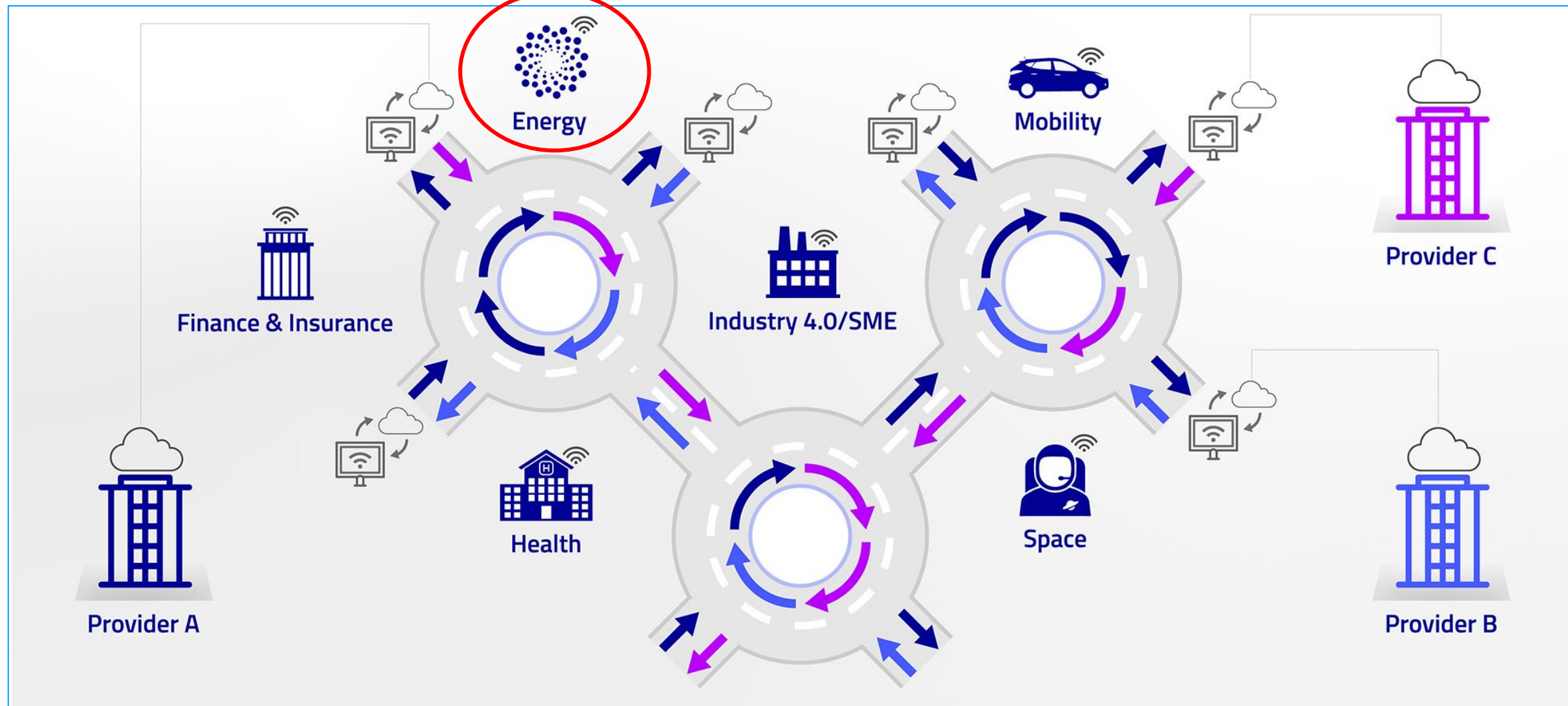
General view at Gaia-X - Data Spaces
Decentralized infrastructure for trustworthy data sharing and exchange in data ecosystems

Illustration after IDSA

8
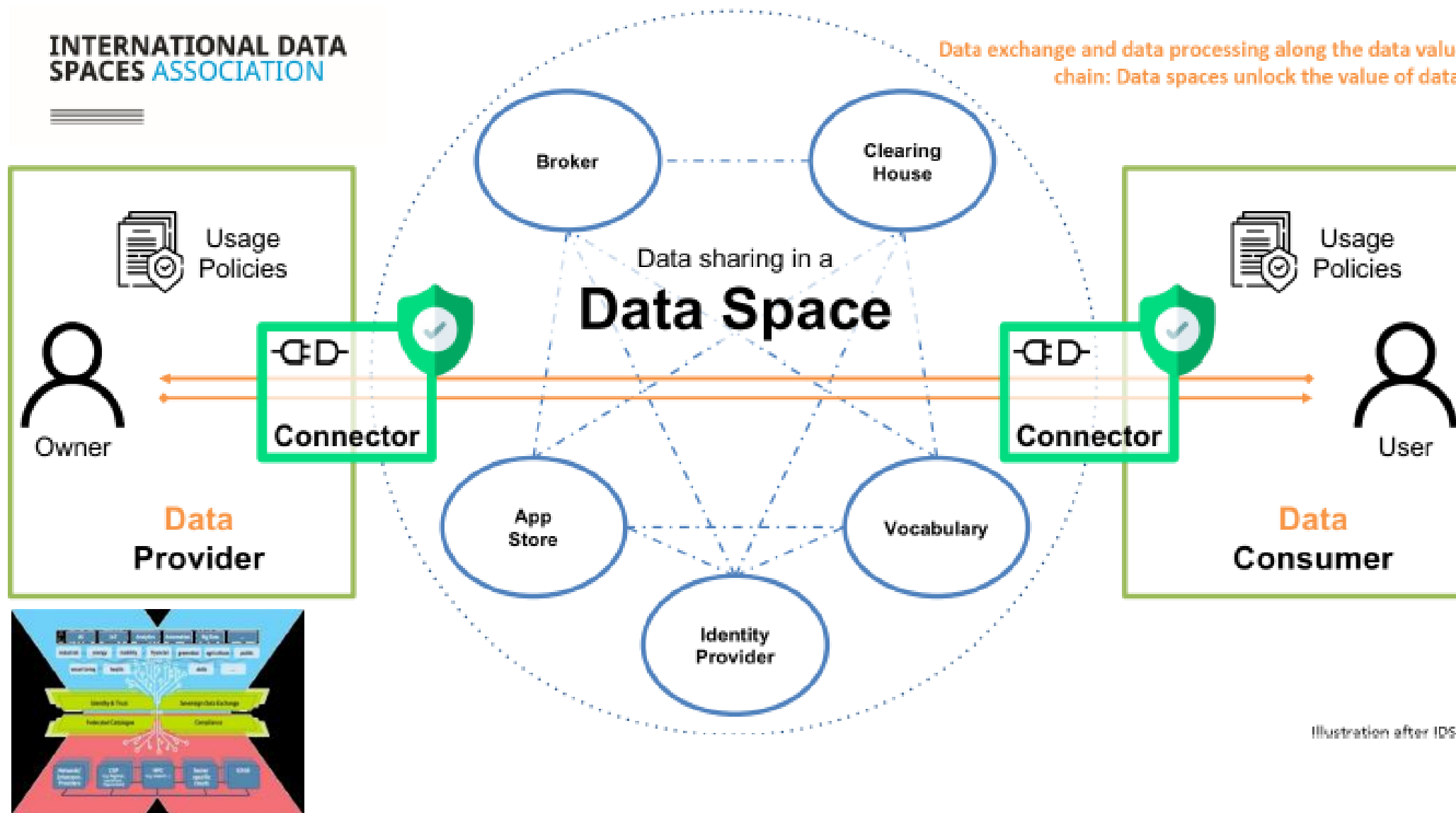
All domains share common requirements

New business will be created by sharing the data between different domains

Energy	Finance	Agriculture	Health	Industry 4.0/SME	Mobility	Public Sector	Smart Living

Common cross-domain requirements

Gaia-X as an enabler

Federated Identity Management

Algorithms for data monetisation

Trusted Relationship Management

Data Custodianship as a business principle

Open to adapt of all market participants - and systems

Authorisation and data usage control by the data owner

Uniform definition of protection classes for data and services for all participants

Selectable Geography and Legislation for data storage and service offering (locally/centrally)

Hybrid Cloud Scenario through distributed implementation (vertically and horizontally) across many vendors
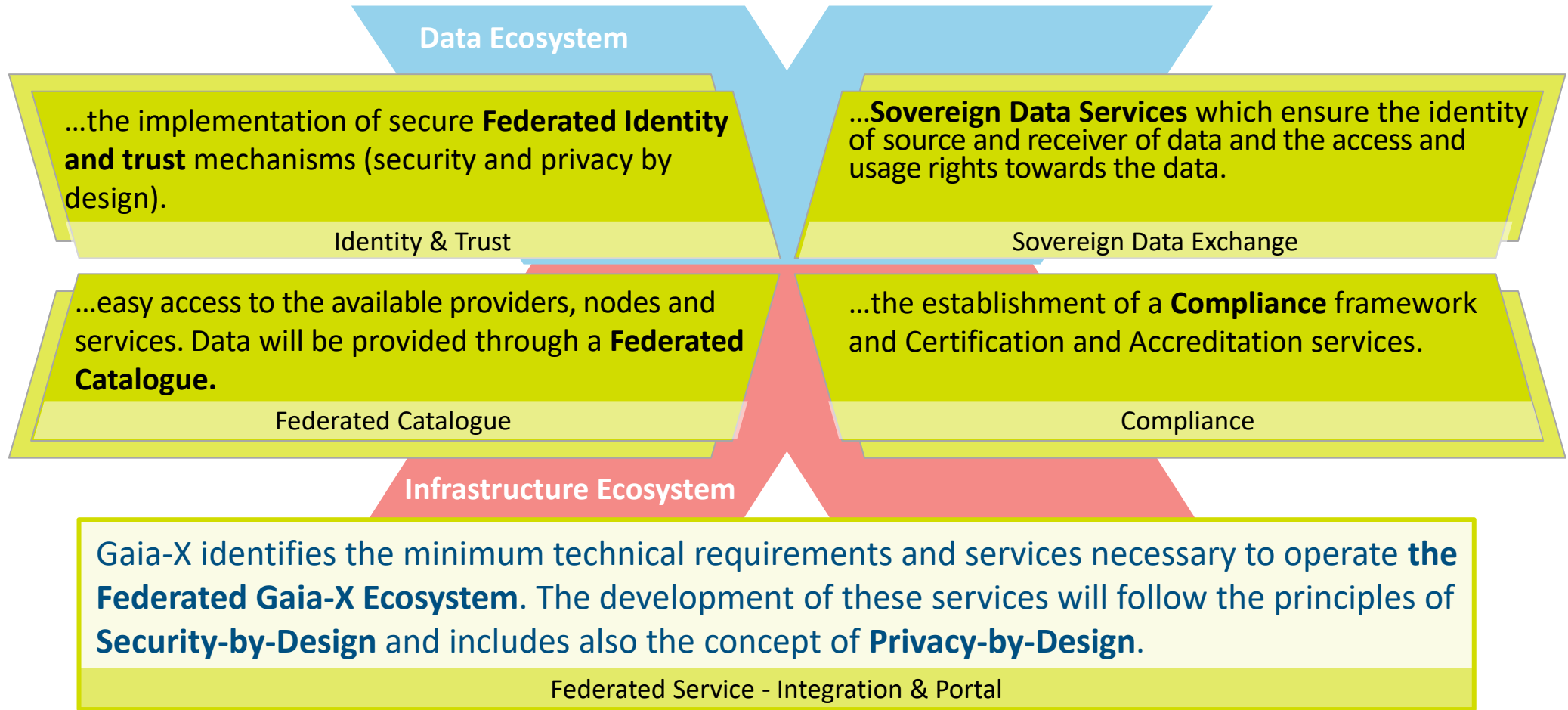
Additional domain specific requirements

9

Federation Services as core of the technical infrastructure

The Federation Services are the driver of corporate business models

The technical implementation of these Federation Services focuses on…

Data Ecosystem

…the implementation of secure **Federated Identity and trust** mechanisms (security and privacy by design).

Identity & Trust

…**Sovereign Data Services** which ensure the identity of source and receiver of data and the access and usage rights towards the data.

Sovereign Data Exchange

…easy access to the available providers, nodes and services. Data will be provided through a **Federated Catalogue.**

Federated Catalogue

…the establishment of a **Compliance** framework and Certification and Accreditation services.

Compliance

Infrastructure Ecosystem

Gaia-X identifies the minimum technical requirements and services necessary to operate **the Federated Gaia-X Ecosystem**. The development of these services will follow the principles of **Security-by-Design** and includes also the concept of **Privacy-by-Design**.

Federated Service - Integration & Portal

10

gaia-x

Be part of Gaia-X and create
a future that is both -
open and fair!