Sectoral experience on data sharing
Energy: ESTFEED data exchange platform

BITS seminar:
Data sharing and re-use
Sectoral perspectives and common takeaways

Kalle Kukk

Brussels, 3 October 2018

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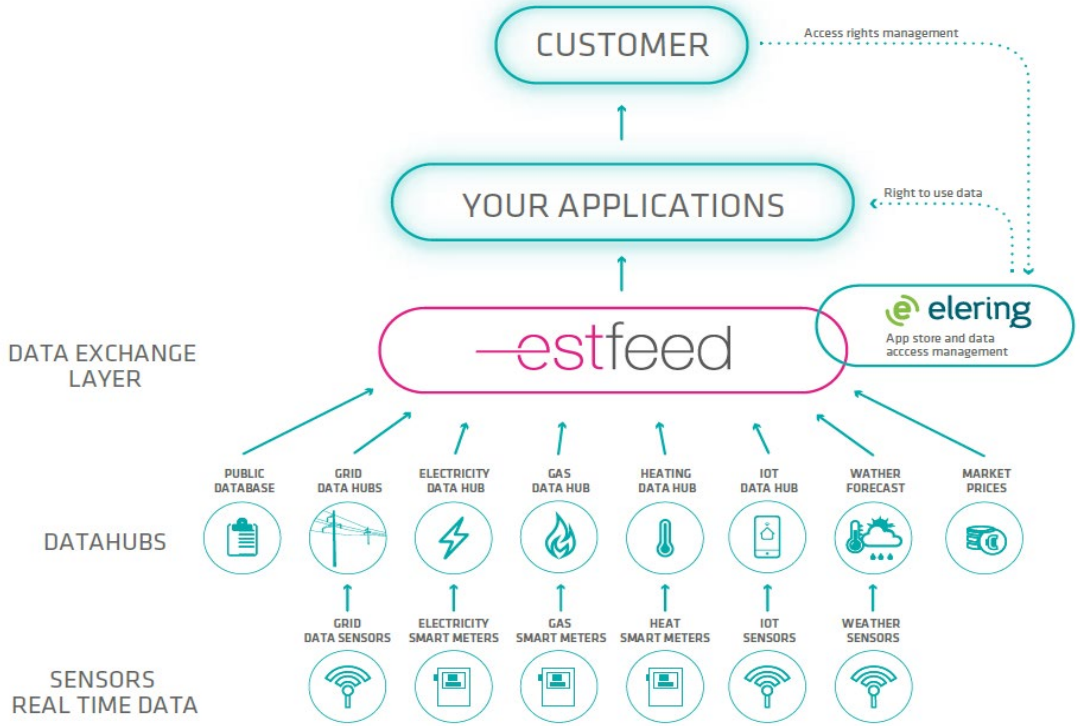
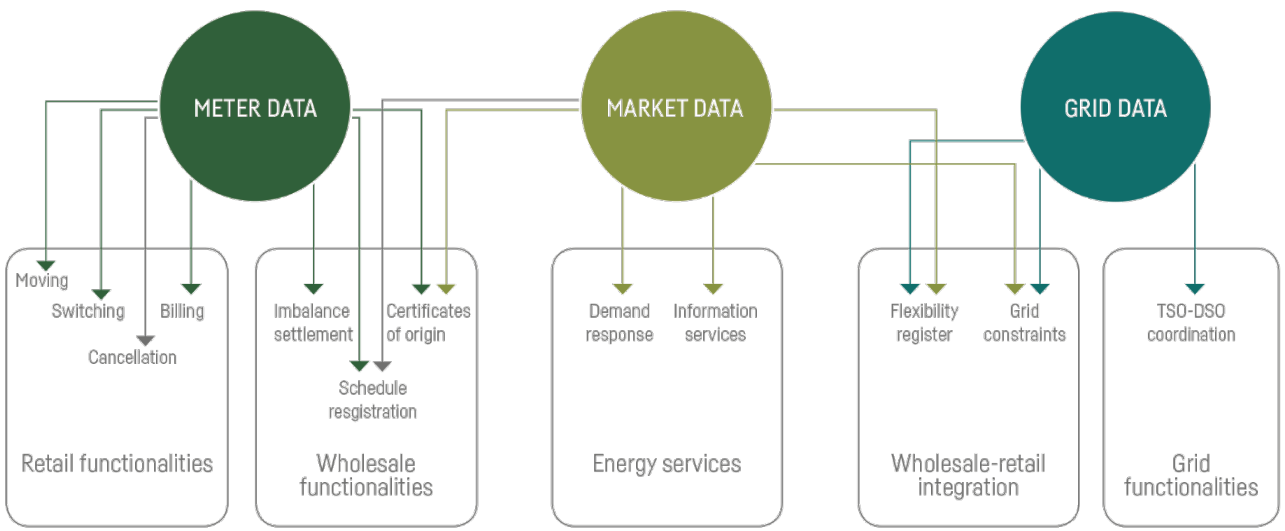
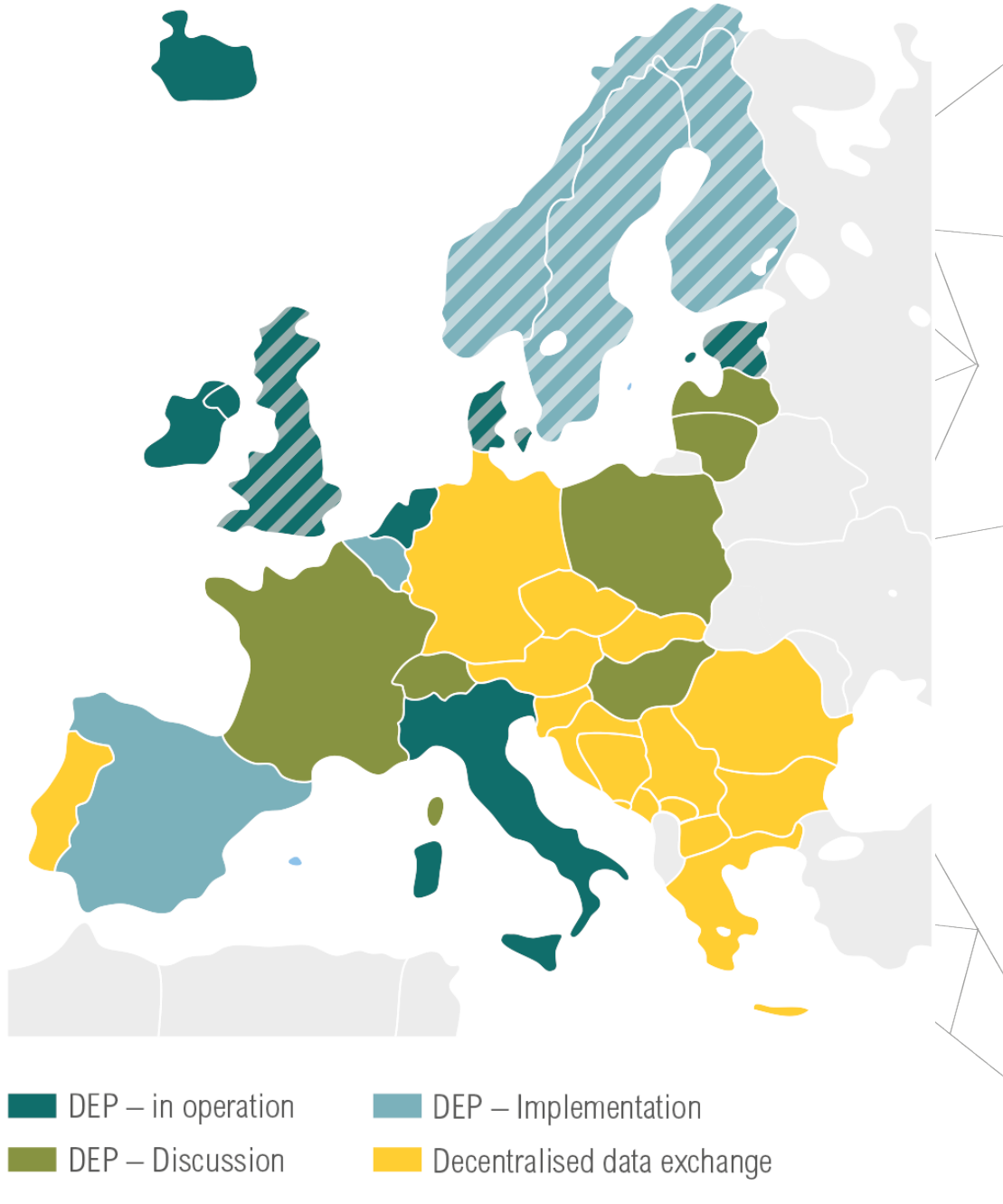
GENERATING OPPORTUNITIES

DATA FLOWS AND ACCESS MANAGEMENT







Customer Empowerment through digitalisation: the story so far in Estonia

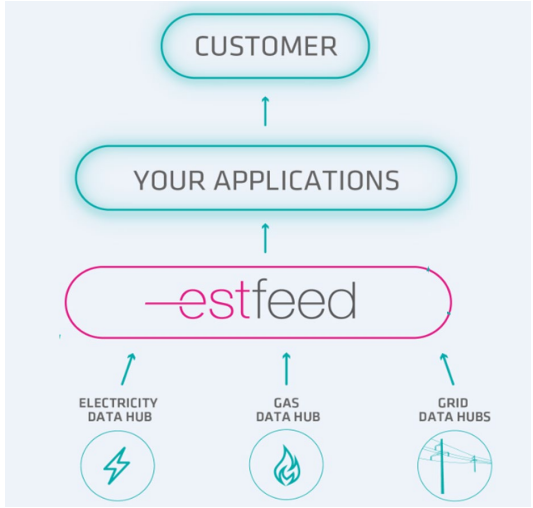
100% smart meters
(2013 – 2017)

Landys-Gyr IDIS E450 PLC

Datahubs for electricity and gas
(2013, 2016)

Image from Wikimedia

Estfeed data access platform
(2017)



Flexibility, efficiency, optimisation providers can access smart meter data via Estfeed!

2013

2016

38% households on hourly varying spot prices – low prices for consumers

2017

Consumers in control of their energy data

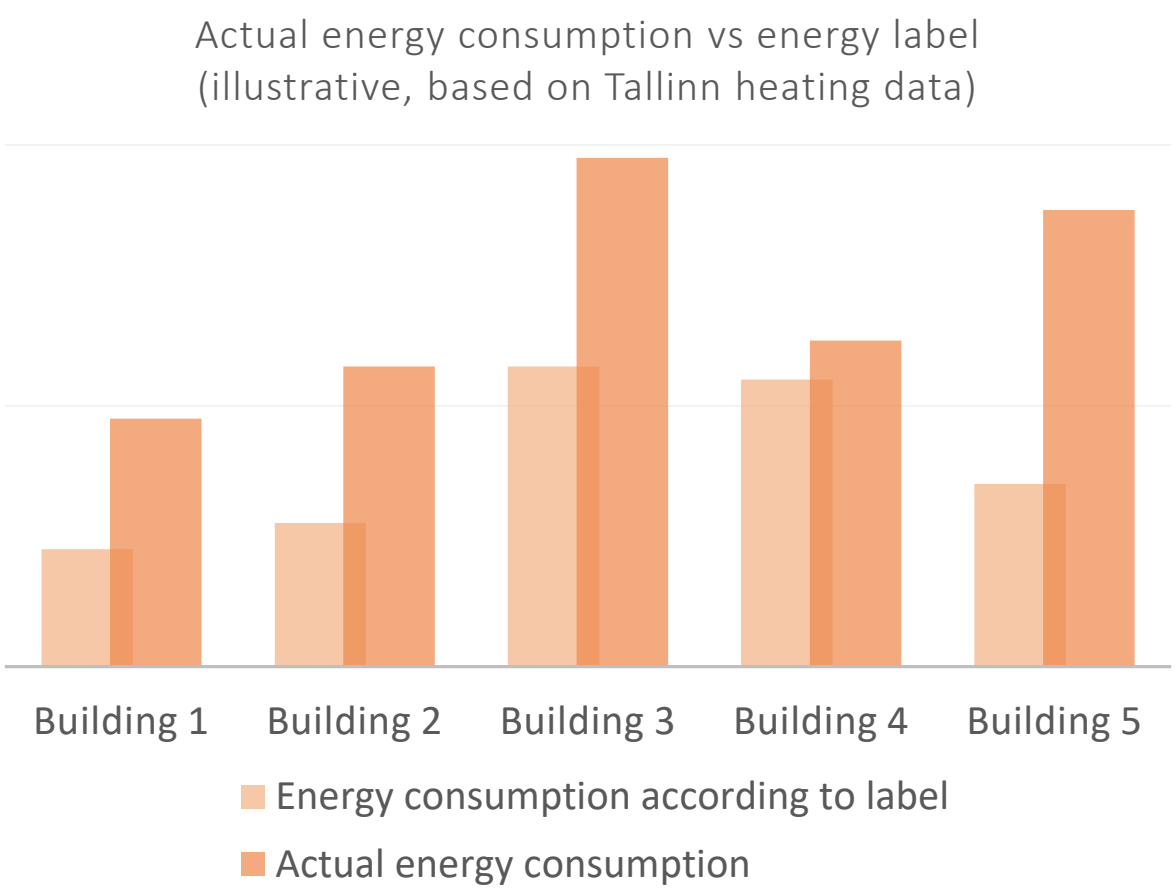
GDPR
25 MAY 2018

Example why data matters – energy labelling

In 95% of buildings the actual energy consumption is 2x what the energy label allows.

Consumers need accurate information to make informed choices.

Buildings consume 40% of final energy. Fixing labels will help energy and climate goals.



Legal and regulatory background for customer empowerment and data access

- Clean Energy Package: consumers own their data
  - Article 23 (Directive on common rules for the internal market in electricity):
    - 1. Explicit consent by consumers to share data
    - 2. Efficiently organised data access and exchange
  - Appendix II:
    - Data accessible in near real time

- GDPR: data privacy must be ensured
  - Clarity about the purposes the data is being used for
  - Measures to ensure security, confidentiality, integrity, availability and resilience of processing systems

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Estfeed is the solution to all of these requirements

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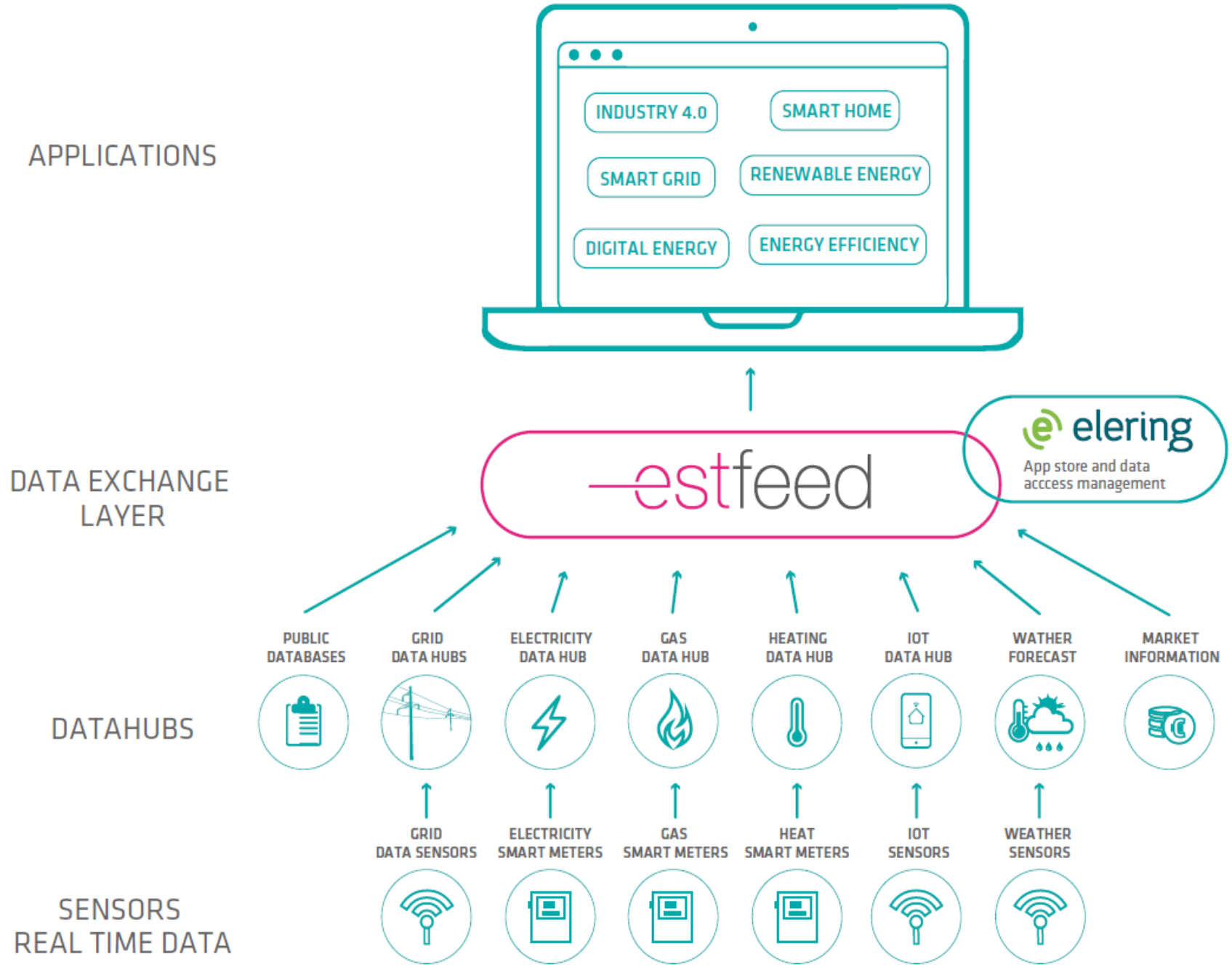
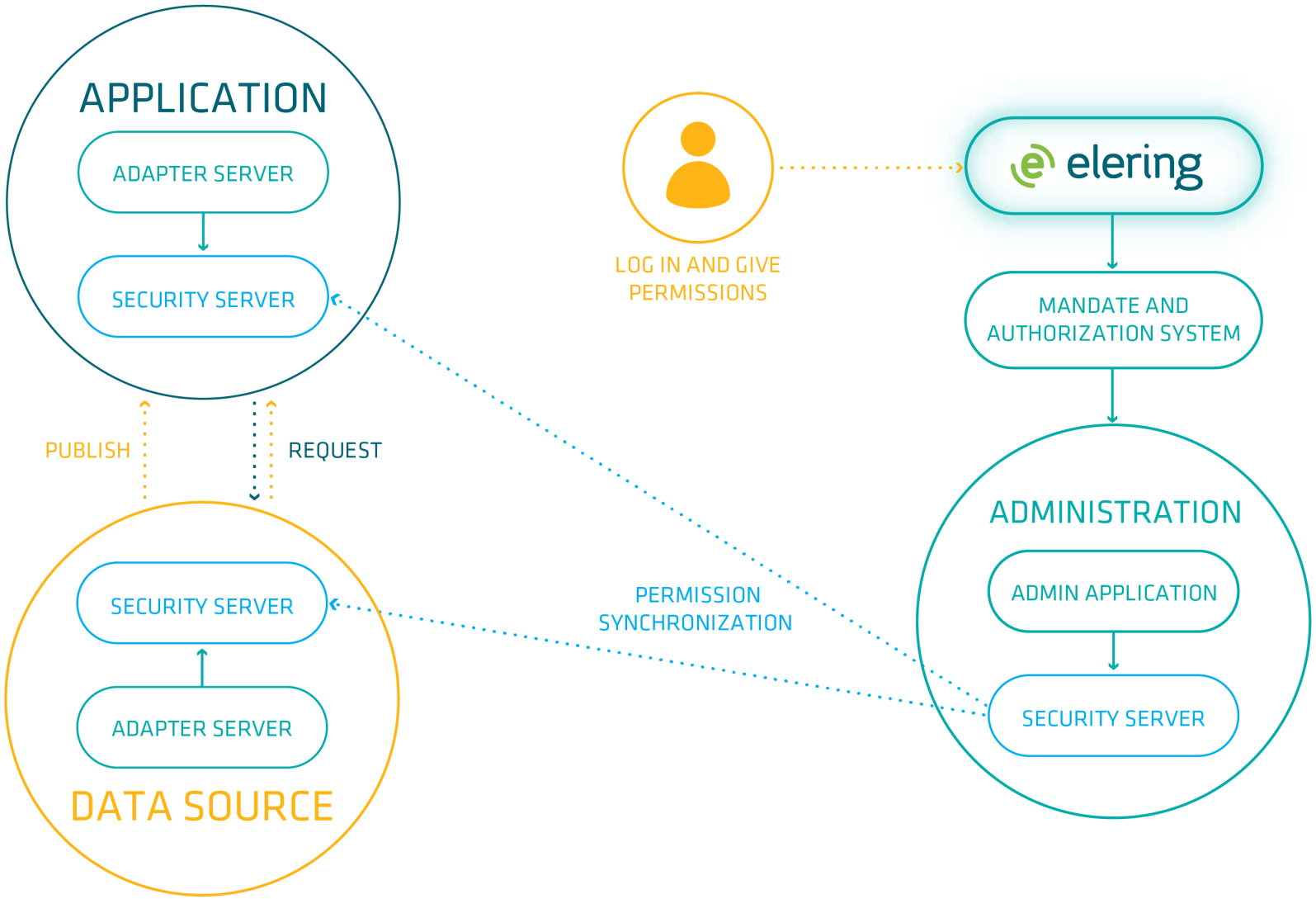

APPLICATIONS
INDUSTRY 4.0
SMART HOME
SMART GRID
RENEWABLE ENERGY
DIGITAL ENERGY
ENERGY EFFICIENCY
DATA EXCHANGE LAYER
estfeed
elering
App store and data acccess management
DATAHUBS
PUBLIC DATABASES
GRID DATA HUBS
ELECTRICITY DATA HUB
GAS DATA HUB
HEATING DATA HUB
IOT DATA HUB
WATHER FORECAST
MARKET INFORMATION
SENSORS REAL TIME DATA
GRID DATA SENSORS
ELECTRICITY SMART METERS
GAS SMART METERS
HEAT SMART METERS
IOT SENSORS
WEATHER SENSORS

PEER TO PEER DATA TRANSMISSION ARCHITECTURE



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ÜHENDAME ENERGIAD

EN ET

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Log In

- Energy Consumption Data
- Data Usage History
- Data Sharing
- Representation Rights
- Contract Information

What is e-elering?

E-elering is a customer portal that holds all Elering e-services, as well as applications from other energy service providers and grants access to data related to your energy consumption.

You must be logged in to see your energy consumption data.

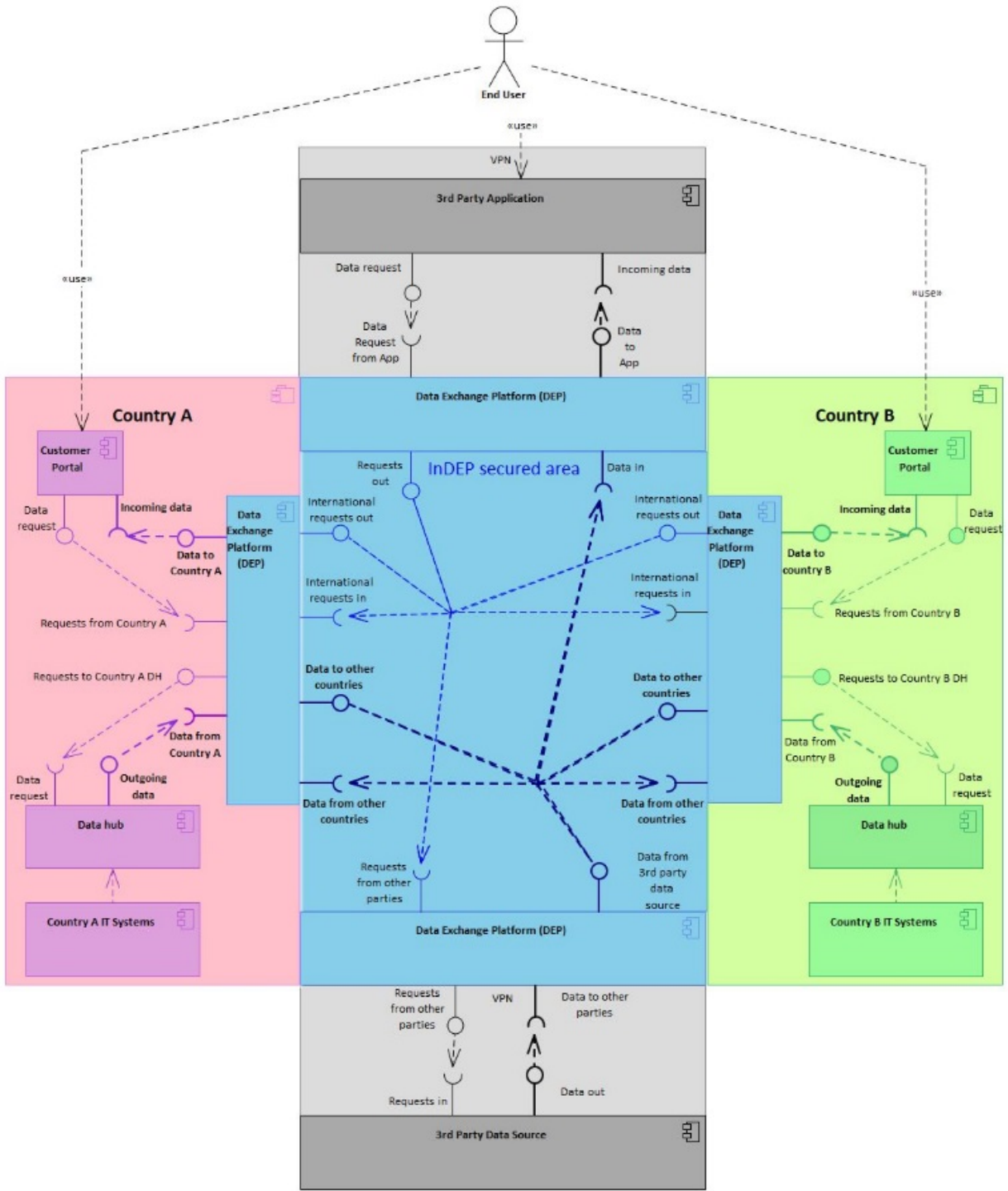
Energy Consumption Data

Data Usage History

Data Sharing

Representation Rights

Contract Information

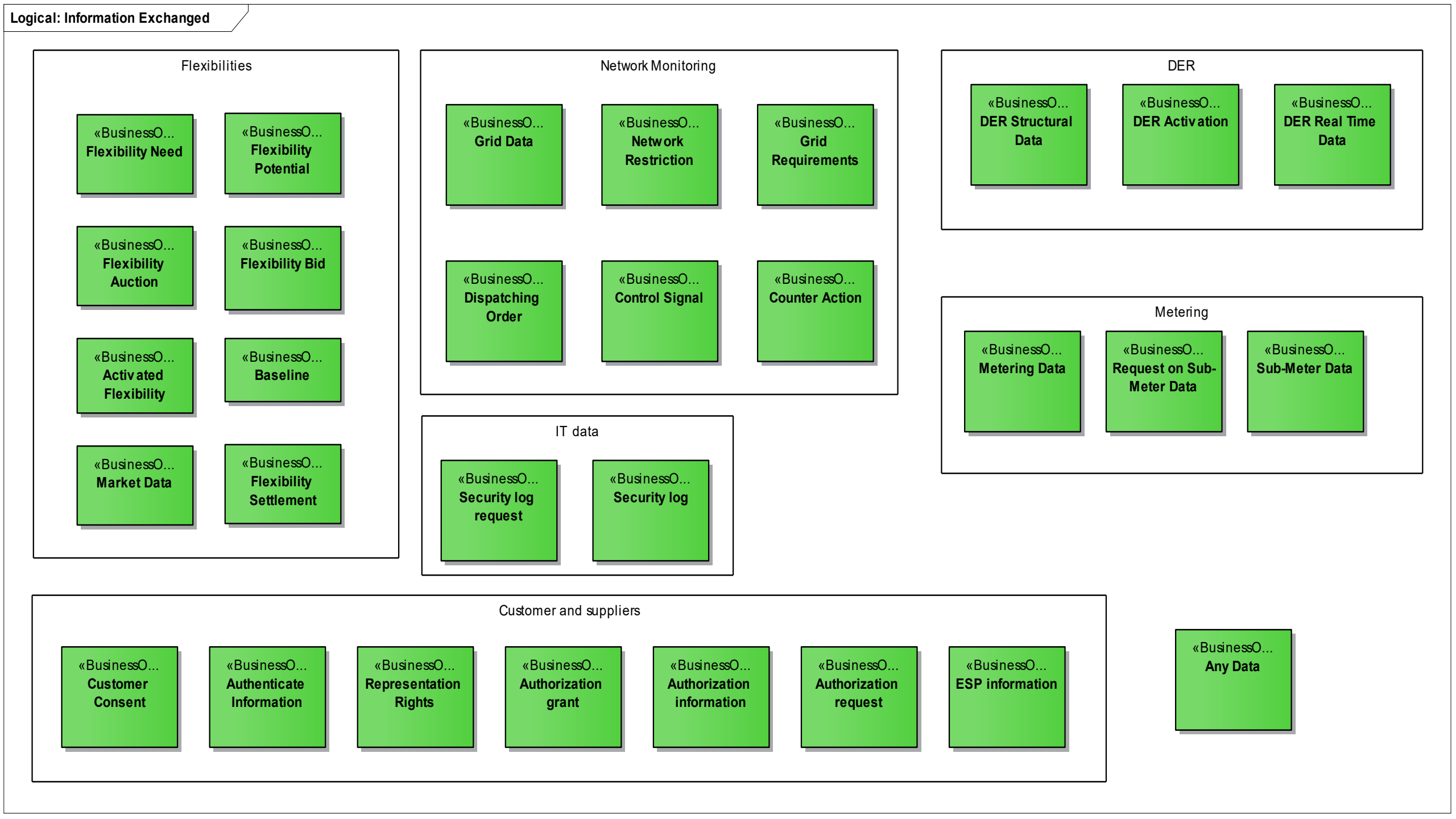


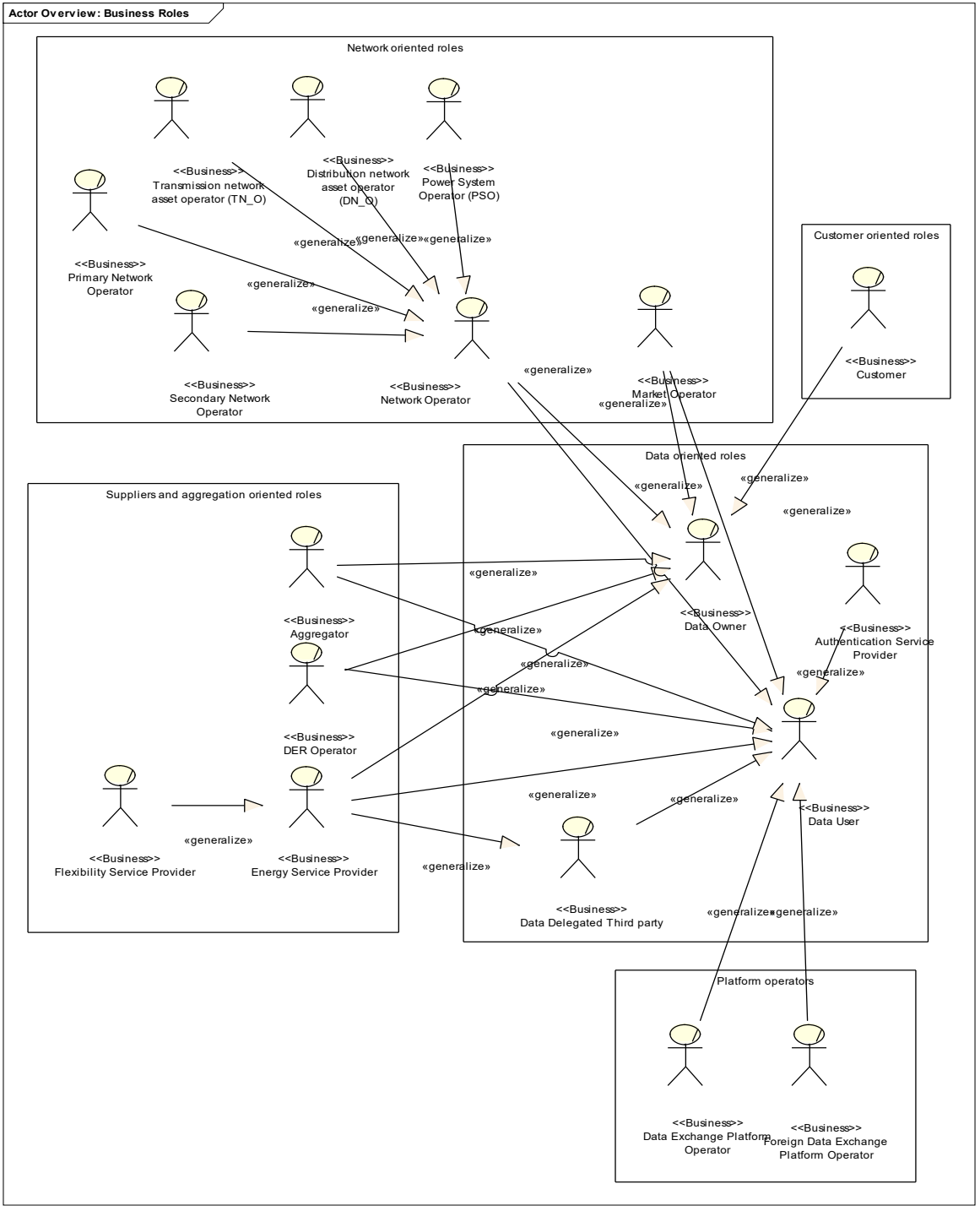
EU-SysFlex

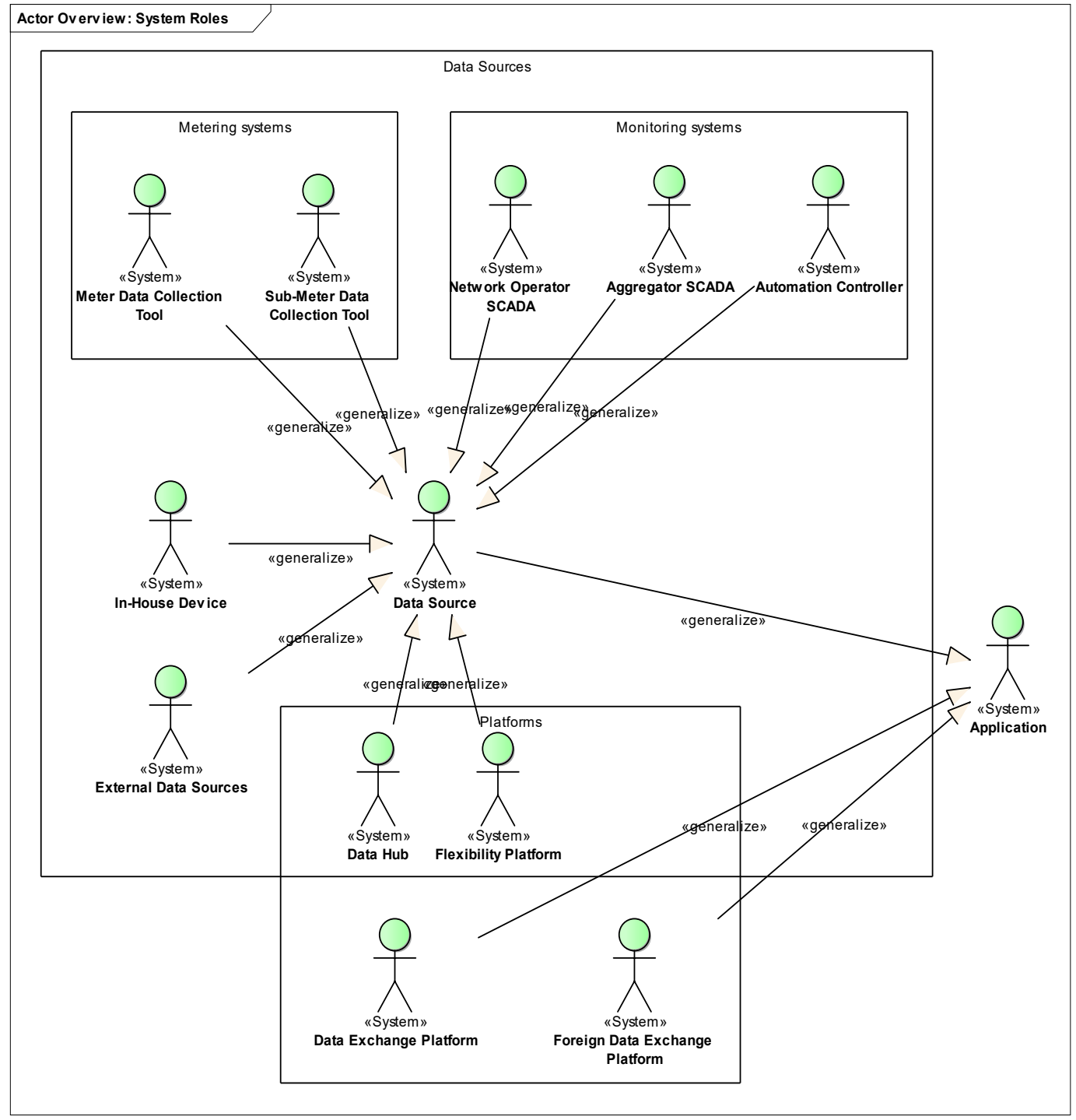
EU-SysFlex stands for pan-European system with an **efficient coordinated use of flexibilities** for the integration of a large share of **renewable energy sources**.

eu-sysflex.com

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 773505.


Logical: Information Exchanged
Flexibilities
«BusinessO... Flexibility Need
«BusinessO... Flexibility Potential
«BusinessO... Flexibility Auction
«BusinessO... Flexibility Bid
«BusinessO... Activated Flexibility
«BusinessO... Baseline
«BusinessO... Market Data
«BusinessO... Flexibility Settlement
Network Monitoring
«BusinessO... Grid Data
«BusinessO... Network Restriction
«BusinessO... Grid Requirements
«BusinessO... Dispatching Order
«BusinessO... Control Signal
«BusinessO... Counter Action
DER
«BusinessO... DER Structural Data
«BusinessO... DER Activation
«BusinessO... DER Real Time Data
Metering
«BusinessO... Metering Data
«BusinessO... Request on Sub-Meter Data
«BusinessO... Sub-Meter Data
IT data
«BusinessO... Security log request
«BusinessO... Security log
Customer and suppliers
«BusinessO... Customer Consent
«BusinessO... Authenticate Information
«BusinessO... Representation Rights
«BusinessO... Authorization grant
«BusinessO... Authorization information
«BusinessO... Authorization request
«BusinessO... ESP information
«BusinessO... Any Data


Actor Overview: Business Roles
Network oriented roles
<<Business>>
Transmission network asset operator (TN_O)
<<Business>>
Distribution network asset operator (DN_O)
<<Business>>
Power System Operator (PSO)
<<Business>>
Primary Network Operator
<<Business>>
Secondary Network Operator
<<Business>>
Network Operator
<<Business>>
Market Operator
Customer oriented roles
<<Business>>
Customer
Data oriented roles
<<Business>>
Data Owner
<<Business>>
Authentication Service Provider
<<Business>>
Data User
<<Business>>
Data Delegated Third party
Suppliers and aggregation oriented roles
<<Business>>
Aggregator
<<Business>>
DER Operator
<<Business>>
Flexibility Service Provider
<<Business>>
Energy Service Provider
Platform operators
<<Business>>
Data Exchange Platform Operator
<<Business>>
Foreign Data Exchange Platform Operator
«generalize»


Actor Overview: System Roles
Data Sources
Metering systems
«System»
Meter Data Collection Tool
«System»
Sub-Meter Data Collection Tool
Monitoring systems
«System»
Network Operator SCADA
«System»
Aggregator SCADA
«System»
Automation Controller
«System»
In-House Device
«System»
Data Source
«System»
External Data Sources
Platforms
«System»
Data Hub
«System»
Flexibility Platform
«System»
Application
«System»
Data Exchange Platform
«System»
Foreign Data Exchange Platform
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Thank you!

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