interconnect

interoperable solutions
connecting smart homes,
buildings and grids

InterConnect Project

2nd Workshop on Flexibility Market and TSO/DSO Cooperation

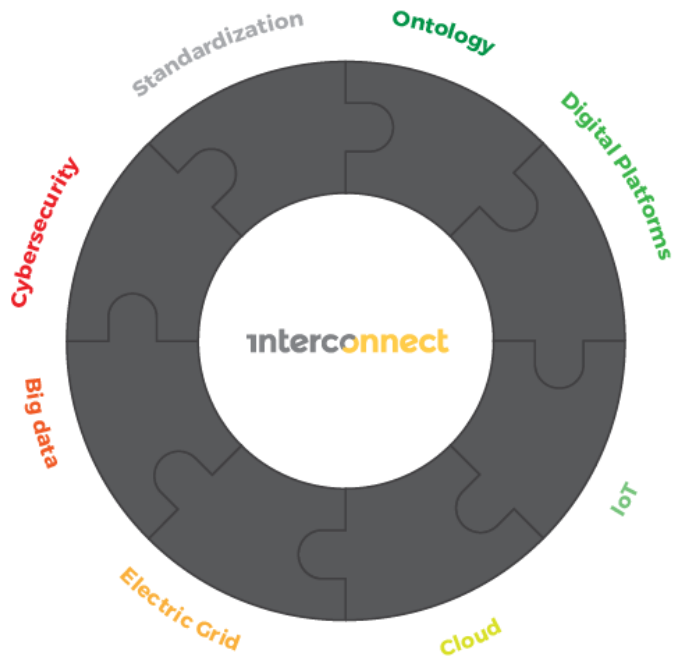**José Manuel Terras**

European Projects and Policies - EDP Distribuição

Brussels, Belgium

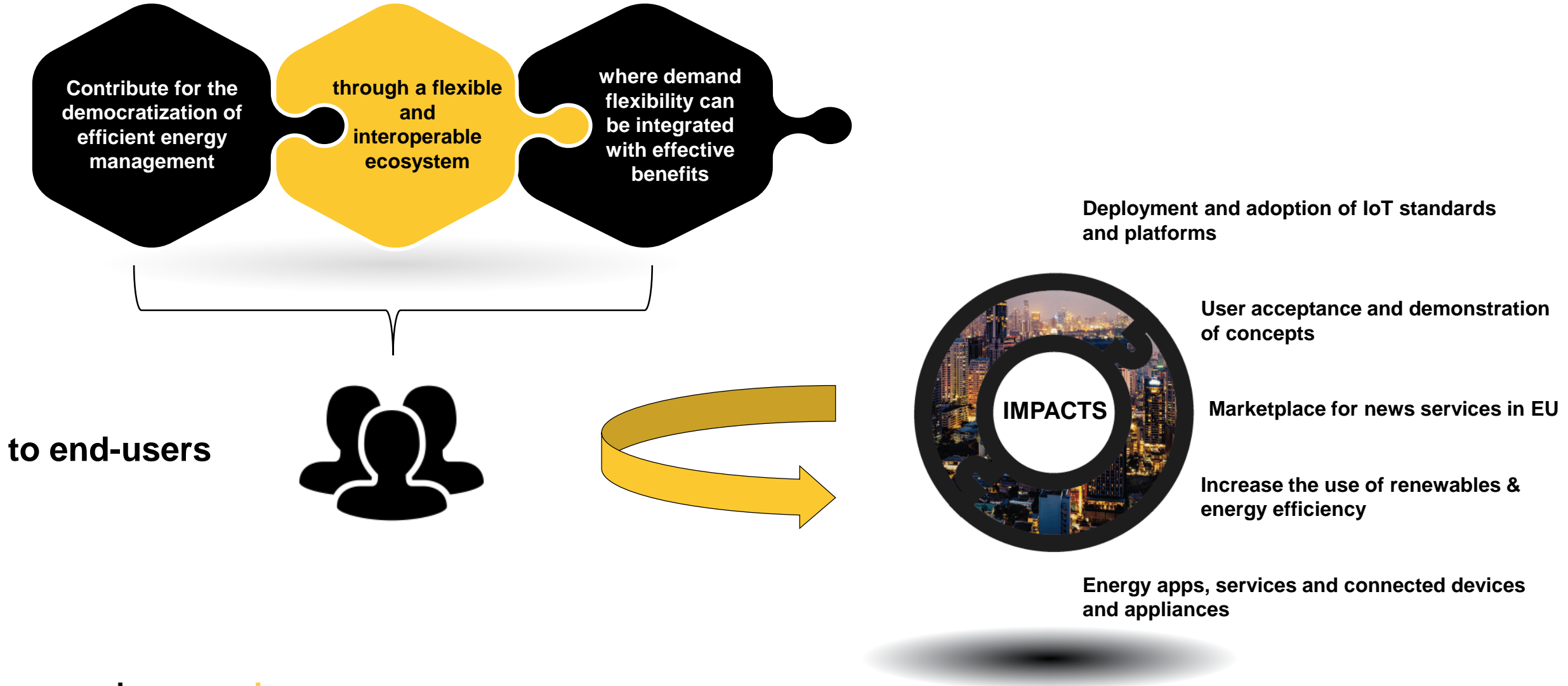**13th February 2020**

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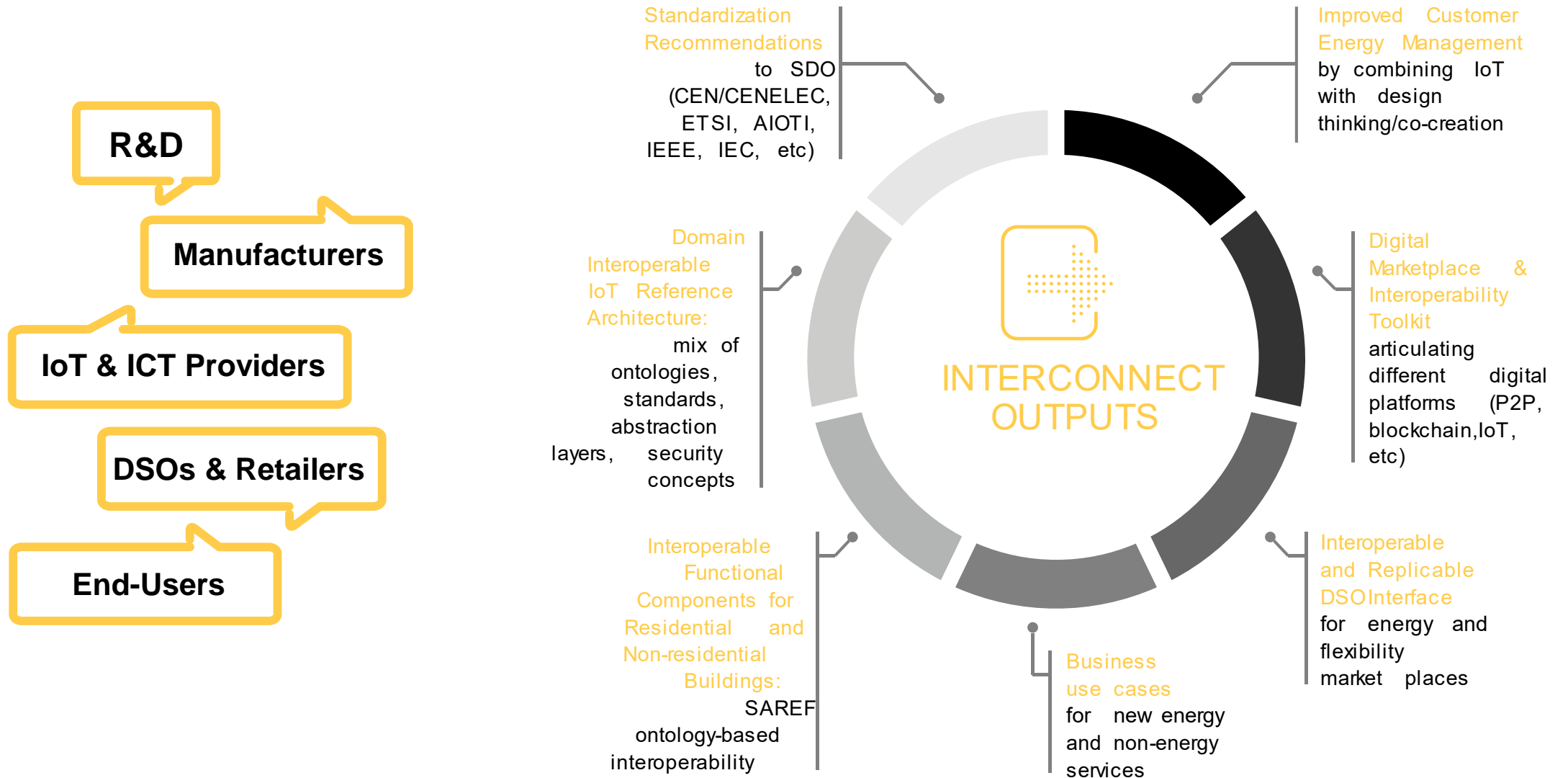
InterConnect Project – DT-ICT-10-2018-19

- The consortium is composed by **50 members** covering **full IoT & energy value chain**

- **Seven large scale pilots** leading to market driven deployments will be installed

Standardization
Ontology
Digital Platforms
Cybersecurity
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IoT
Big data
Electric Grid
Cloud

R&D

Manufacturers

IoT & ICT Providers

DSOs & Retailers

End-Users

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InterConnect Goals & Expected Impacts

Contribute for the democratization of efficient energy management

through a flexible and interoperable ecosystem

where demand flexibility can be integrated with effective benefits

to end-users

Deployment and adoption of IoT standards and platforms

User acceptance and demonstration of concepts

IMPACTS

Marketplace for news services in EU

Increase the use of renewables & energy efficiency

Energy apps, services and connected devices and appliances

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Project Outputs

R&D

Manufacturers

IoT & ICT Providers

DSOs & Retailers

End-Users

Standardization Recommendations to SDO (CEN/CENELEC, ETSI, AIOTI, IEEE, IEC, etc)

Improved Customer Energy Management by combining IoT with design thinking/co-creation

Domain Interoperable IoT Reference Architecture: mix of ontologies, standards, abstraction layers, security concepts

Digital Marketplace & Interoperability Toolkit articulating different digital platforms (P2P, blockchain,IoT, etc)

Interoperable Functional Components for Residential and Non-residential Buildings: SAREF ontology-based interoperability

Business use cases for new energy and non-energy services

Interoperable and Replicable DSOInterface for energy and flexibility market places

INTERCONNECT OUTPUTS

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InterConnect Project – Question 1

What additional data do you need?

From whom? What time frame?

How do you bring it all together?

DSO Interface for Data Collection

In the InterConnect concept, the DSO will implement an interface to collected data from:

- **Flexible consumers** connected to LV, MV and HV grids (distribution grid).

- **Digital platforms** from service providers (e.g. peer-to-peer trading and aggregation).
  - The aim is to receive information about consumption/generation trading (including flexibility services), conduct technical constraints evaluation and define remedial actions if necessary.

- Connection with **TSO will be considered** through the TSO/DSO observability process, although TSOs are not engaged in Interconnect project. The main focus will be on local P2P flexibility markets.

- Network topology and other parameters **are not exchanged** with the stakeholders.

Regarding data requirements, it will depend on the specification of flexibility services in the context of the project, particularly in what concerns activation requirements and the type of services (mandatory with direct control and tariff based).

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InterConnect Project – Question 2
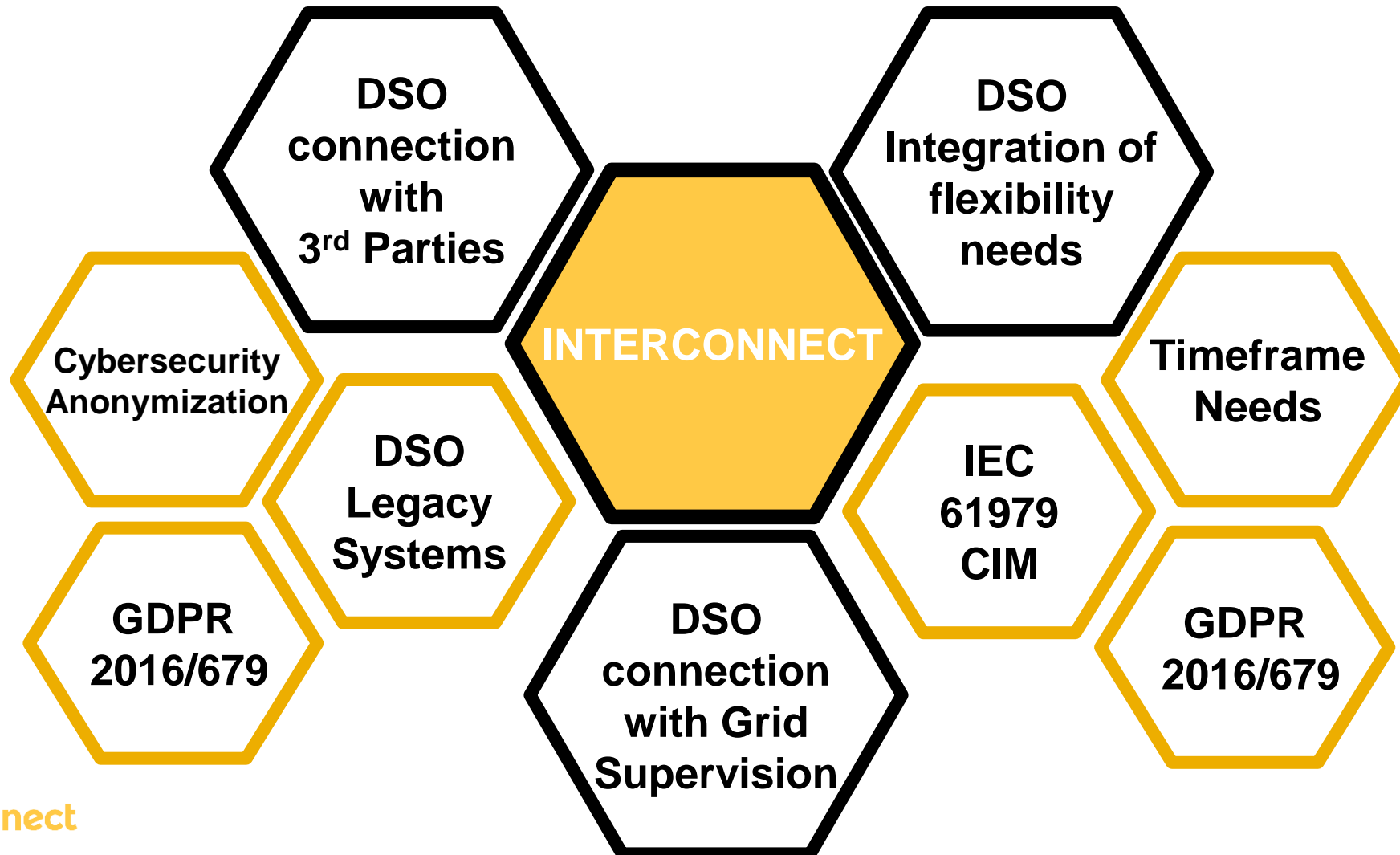
What kind of data sharing arrangements?

Which data do you need? With whom? What type of data?

IT Requirement from the market participants?

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DSO as platform for active participation in emerging markets

In the InterConnect, data sharing mechanisms will be implemented with different market players:

InterConnect Project – Question 3

How to facilitate easy access to proprietary data?

Direct or indirect data access from consumers?

Platforms based?

Indirect access from third party platforms

In the InterConnect, data from consumers is obtained indirectly:

- Data from consumers is obtained **indirectly from 3rd party platforms**

- The advanced metering infrastructure **is only used for metering**, but smart meters make an home area network port available for service suppliers.

- **Compliance with the data and smart metering** national regulatory frameworks, e.g. the "Portuguese Regulation for Services of Smart Grids of Electric Energy Distribution"
  - https://dre.pt/home/-/dre/123675698/details/maximized

- Indirectly, in order to provide flexibility services, the consumers need to have capacity of managing its own consumption and **interact with a market player** (aggregator) **or directly with P2P platform**. This is also probably the main focus of Interconnect project, allowing for the **development of an interoperable framework for enabling** residential/buildings energy management and active participation in emerging energy and flexibility markets - This framework is based on ontologies like SAREF.

InterConnect Project – Question 4

Open APIs?

For what interfaces?

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Open API replicable at European level

In the InterConnect project, a standard DSO interface will be implemented and tested :

- The main objective is that the standard **DSO interface could be replicable in European** countries with **small adaptations** to their specific **regulatory conditions** and not limited by DSO legacy systems.

- The standard DSO interface will act as a "**downstream base link**" with **interoperable platforms, flexible consumers and smart homes & buildings.**

- The DSO interface will act as **neutral data provider and integrated** connection point for **TSO/DSO** cooperation and coordination.

- For the grid side, it will be produced **new recommendations** to frameworks like USEF (Universal Smart Energy Framework) and potential alignment with SAREF4ENER and IEC 61970 CIM standards.

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interoperable solutions connecting smart homes, buildings and grids

Thank you

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01.10.2019 / 30.09.2023