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Approaching 5G-based Edge-Cloud Computing

Opportunities for Innovators and Developers



The 5G Infrastructure Public Private Partnership

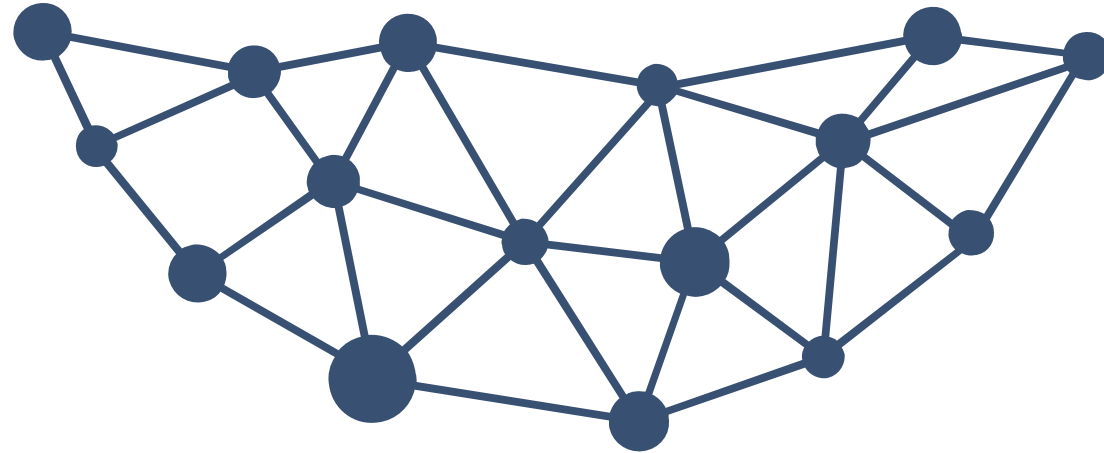


Demonstration of 5G solutions for
SMART energy GRIDs of the future

This project has received funding from
the European Union's *Horizon 2020*
research and innovation programme
under grant agreement n° 101016912



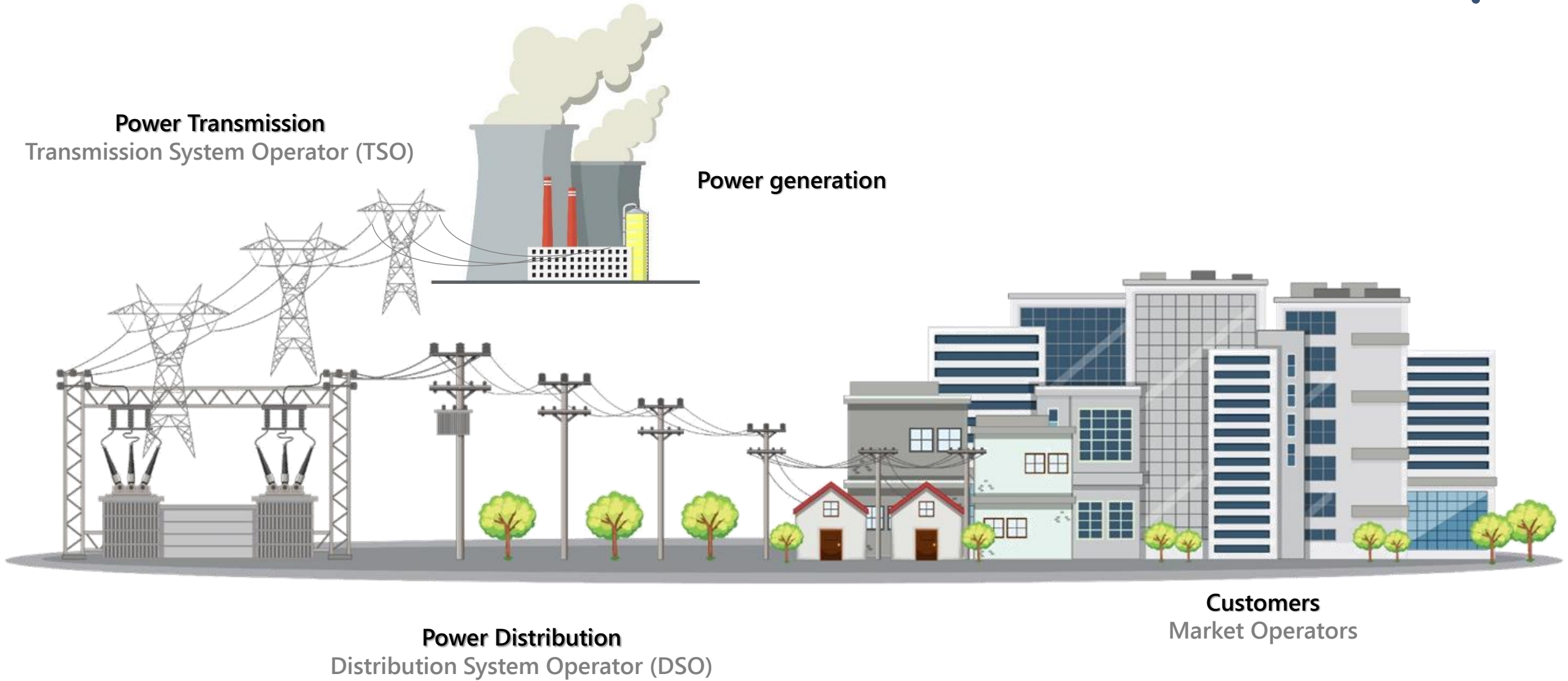
Smart5Grid



Demonstration of **5G** solutions for
SMART energy **GRIDS** of the future

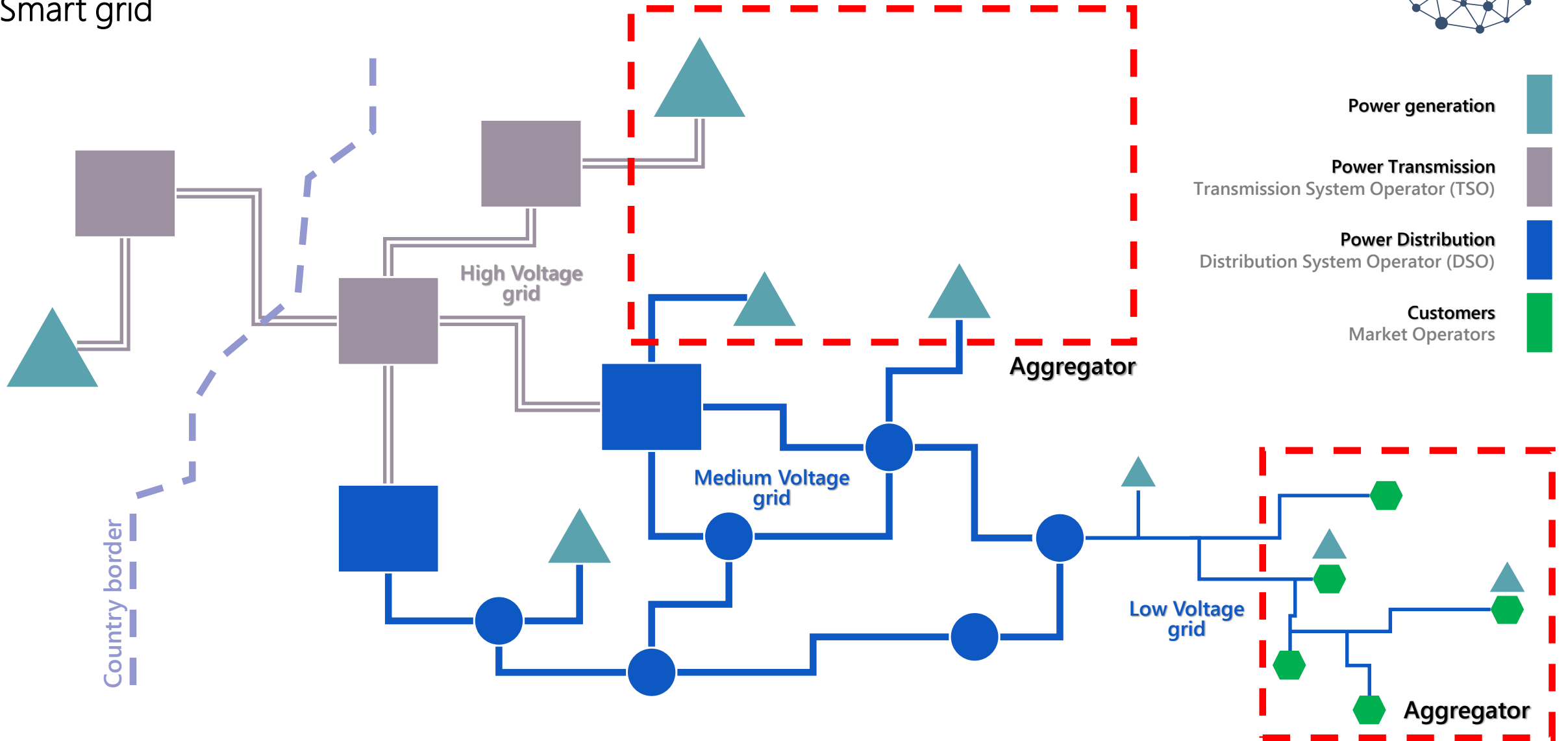
Energy Vertical

Traditional grid

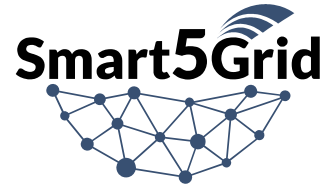


Energy Vertical

Smart grid



Energy transition



Smart Grids

Islanding

Flexibility

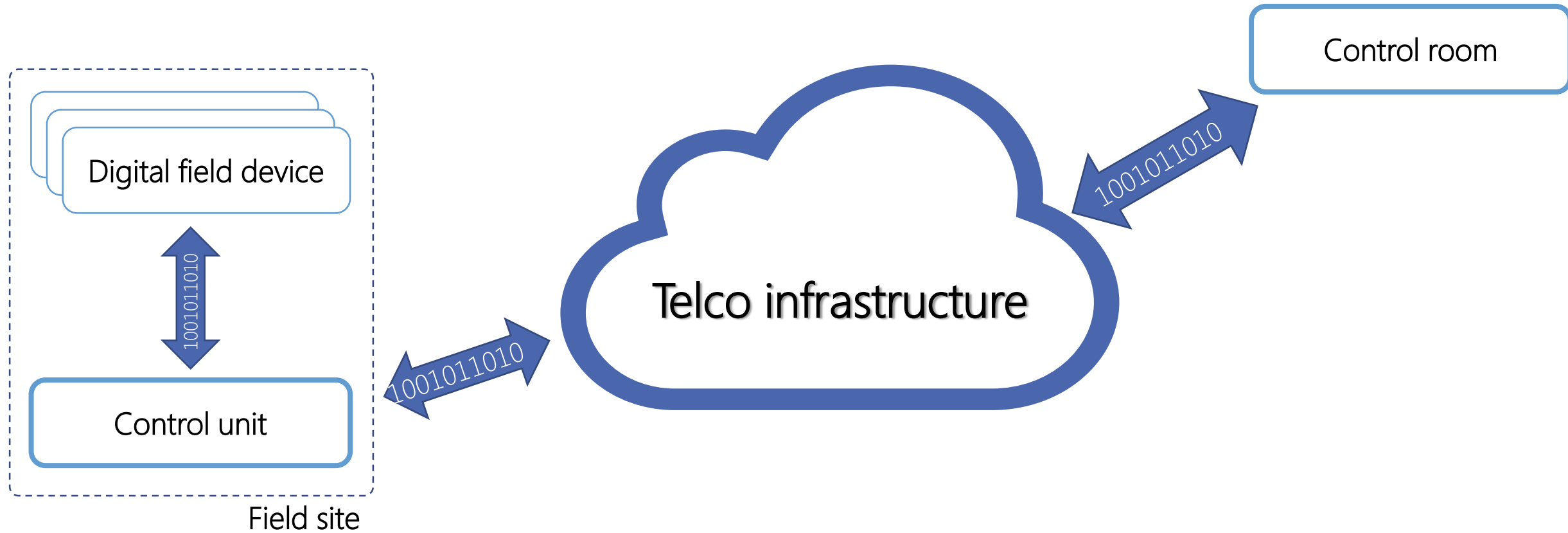
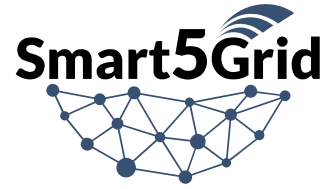
Digitalisation

Distributed generation

Energy Storage

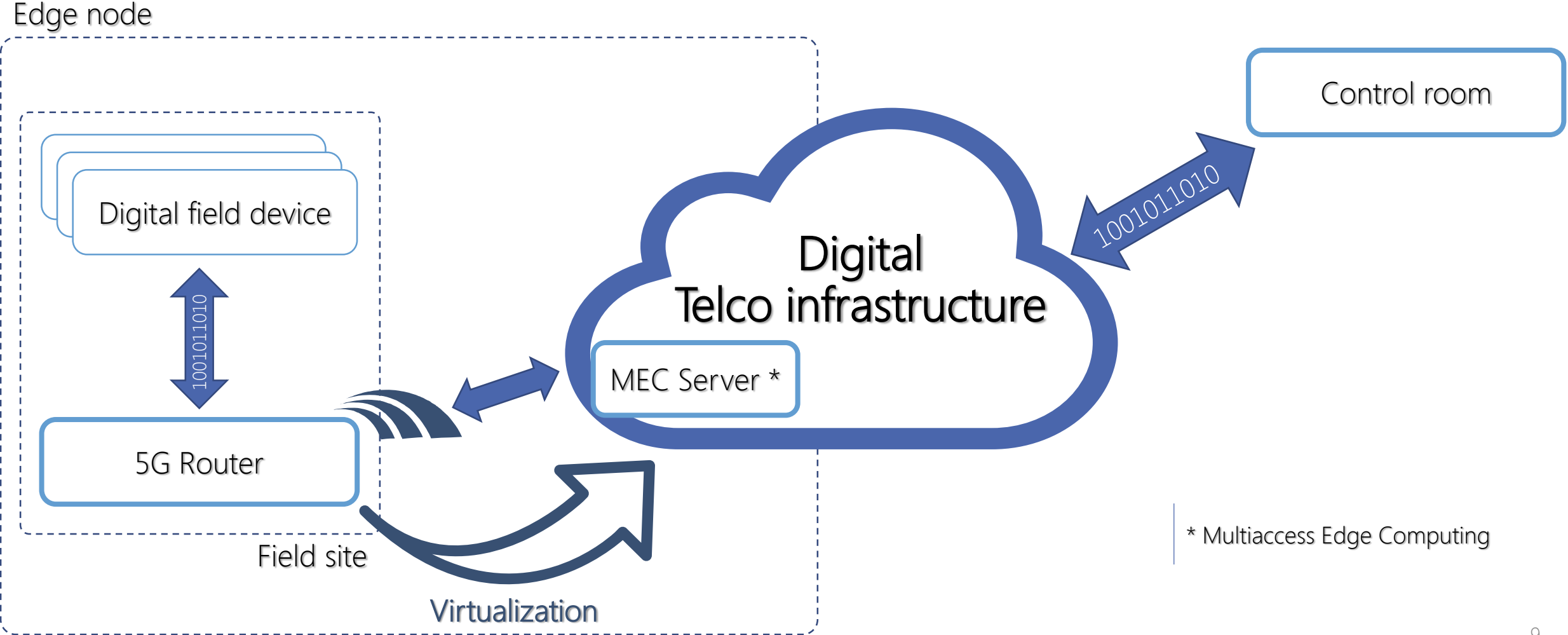
Digitalisation: what kind?

Actual telecommunication model



5G-based cloud edge computing

Digital telco paradigm shift



* Multiaccess Edge Computing

Smart5Grid overall concept



Smart5Grid

Open Experimental 5G Platform

Platform layer

Virtualization/Telco layer

Network App

Energy layer



Network App definition,
modeling and implementation

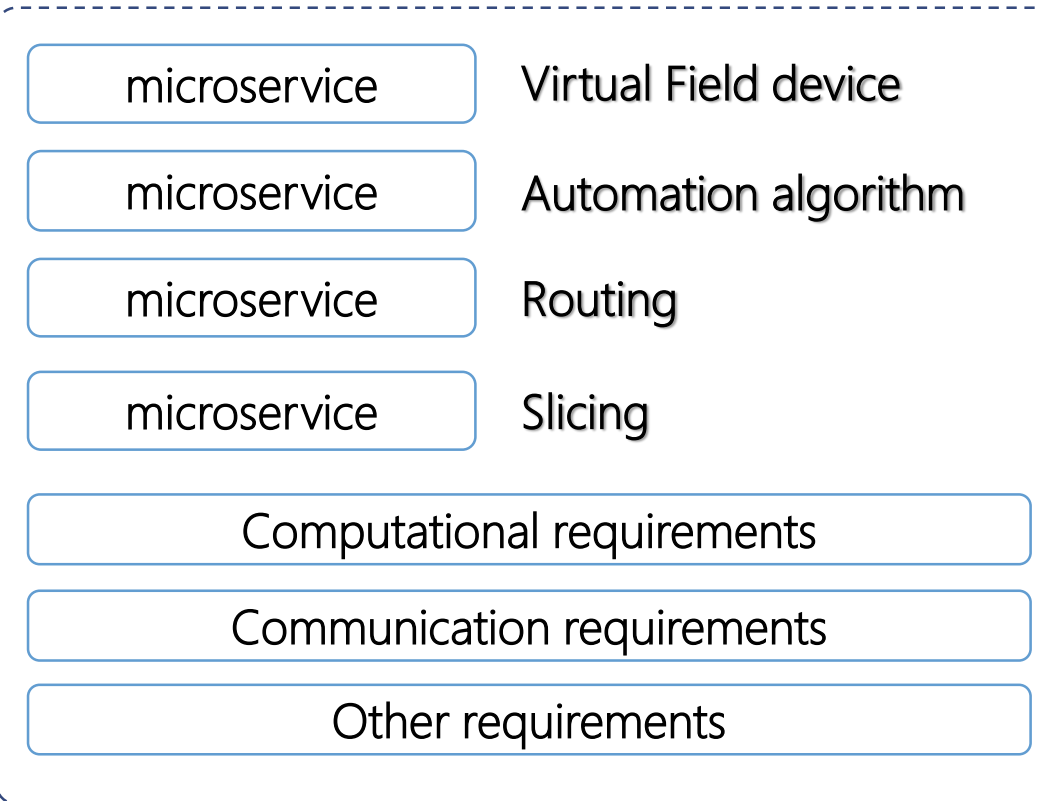
Network Applications'
Open Service Repository

V&V Framework
(Validation and Verification)

Network Applications: a way to simplify the 5G complexity

A simple Network Application

Network App Descriptor



Key features of Network Apps

Fostering the integration of the Core Network features

- Simplifying 5G complexity
- Focus on the core developments
- Combining multiple microservices to realize complex applications

Orchestration and operation

- Centralized management
- Scalability and replicability
- Leveraging on a flexible infrastructure

Accelerating the implementation

- Open Service Repository as a single access point for developers
- Integrated Verification and Validation feature

Smart5 Grid



IP monitoring for Smart Grids

Italian Demo | Olbia



Power plant operators' safety monitoring

Spanish Demo | Barcelona



Distributed generation management

Bulgarian Demo | (Southern region)



Cross border frequency control

Greek-Bulgarian Demo | (Cross-border)



**Our testing
platform is
open for you!**



**build and test
your own
Network App**

all the tools you need are here!



OSR

Open Service Repository



V&V

Verification and Validation



Contact Desk

Remote support for developers



**Join us!
Follow us!
Like us!**



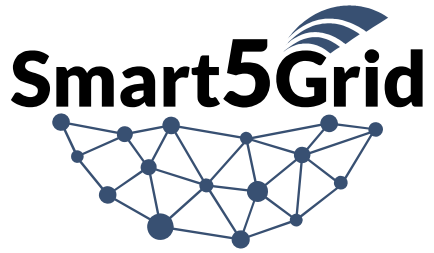
[smart5grid.eu]



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Demonstration of 5G solutions for SMART energy GRIDs of the future

The **Smart5Grid** project aims to investigate the potential of 5G-based Edge-Cloud Computation in the Energy industry, by introducing the concept of **Network App** for simplifying the 5G Complexity. **The project testbeds are now available** for third-parties' experimenters, fostering the creation of a new market-segment for Network Apps.

GENERAL INFORMATION

THE CONSORTIUM

24 EUROPEAN
PARTNERS
(50% SMEs)
COVERING
7 EU STATES

DURATION

3 YEARS
(+4 MONTHS)
TERMINATING ON
APRIL'24

TOTAL BUDGET

8M€



the Smart5Grid Consortium

Coordinator



TELCOs



VIVACOM

GROUP OF COMPANIES

SMEs



EIGHTBELLS
Independent Research & Consultancy



NEARBY
COMPUTING

Tech Companies



Atos



Universities/Research institutions

i2cat



KOLOS
Research and Innovation Center of Excellence



a Hewlett Packard Enterprise acquisition



DSOs

* e-distribuzione

* e-distribución

TSOs



*Linked third-parties of Enel Grids



enel

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Thank you!



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