



MATRYCS

MATRYCS Project Overview

Modular Big Data Applications for
Holistic Energy Services in Buildings

Pasquale Andriani

Engineering Ingegneria Informatica S.p.A.

Title: Modular Big Data Applications for Holistic Energy Services in Buildings

Funding: European Union's Horizon 2020 Research and Innovation Program (H2020)

Budget: 4.577.835,00€

Lifetime: October 2020 – September 2023 (36 months)

Coordination:

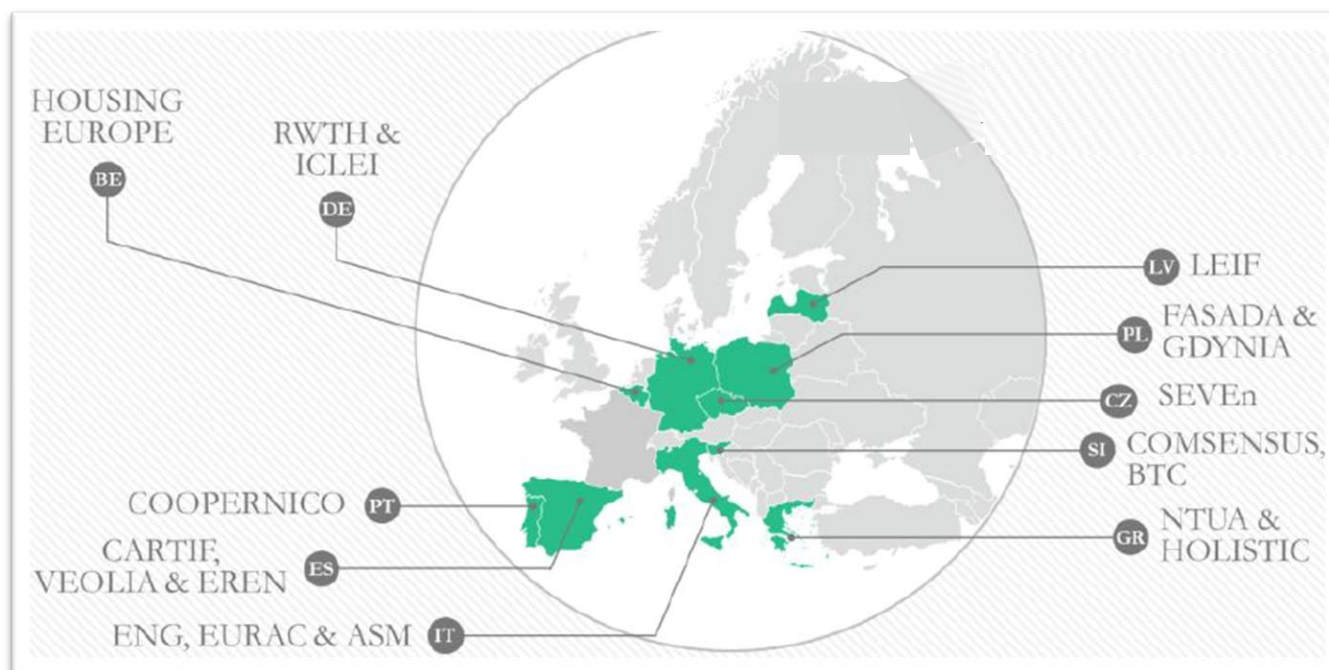


Participants:





Research Centers/ Universities	Public Bodies/ Agencies	Non-Profit/NGO	Large Enterprises/ Public Companies	Small Medium Enterprises
•NTUA •CARTIF •RWTH •EURAC	•GDYNIA •COOPERNICO •EREN •LEIF	•ICLEI •SEVEN •HOUSING EUROPE	•ENG •ASM •VEOLIA	•HOLISTIC •COMSENSUS •BTC •FASADA



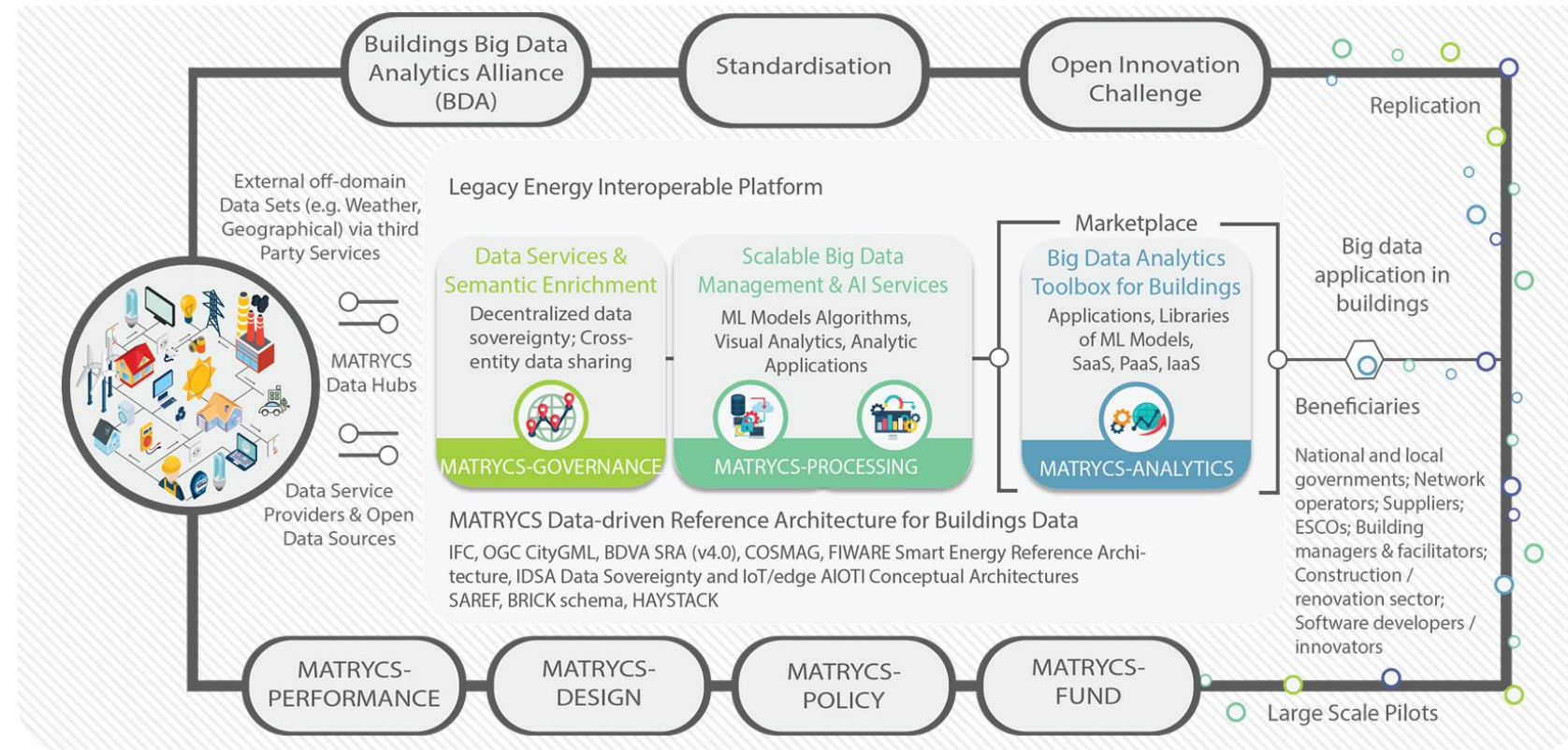
■ Reference Architecture for Building Data

- **GOVERNANCE** - data collection, semantic annotation and distributed storage
- **PROCESSING** - ML and DL models
- **ANALYTICS** - analytics toolbox as a service

■ 11 Large Scale Pilots (LSPs)

- **PERFORMANCE**
- **DESIGN**
- **POLICY**
- **FUND**

- Building Big Data Alliance (BDA), Standardisation, Hackathon, Replication Workshops



MATRYCS's vision can be summarized in 7 clear, measurable, realistic and achievable objectives



Scientific

Development of a **data-driven Reference Architecture for AI-based scalable big data** management & analytics in smart energy-efficient buildings.

Development of a **semantic and business interoperability framework** for cross domain analytics applications and cross-context learning.



Technical

Delivering a **data governance** technology enabler to facilitate **cross-stakeholder data sharing, exchange and handling**.

Evolution and deployment of a technology enabler for **a set of trained, high-quality Machine Learning and Deep Learning models**

Deployment of the MATRYCS **open, cloud-based data analytics toolbox** along different deployment modes



Business

Demonstration of the applicability, effectiveness and value of the MATRYCS Modular Toolbox through Digital Building Twins **and real-life applications**.

Provide **evidence for the business**, social and environmental impact of the Toolbox, boost **EU-scale data economy and valorization and impact on standardization**.

MATRYCS-GOVERNANCE

middleware to act as a mediator between data users (Applications and Tools) and data providers

MATRYCS-PROCESSING

encapsulate the intelligence components of the MATRYCS solution providing a library of reusable AI-based ML / DL models

MATRYCS-ANALYTICS

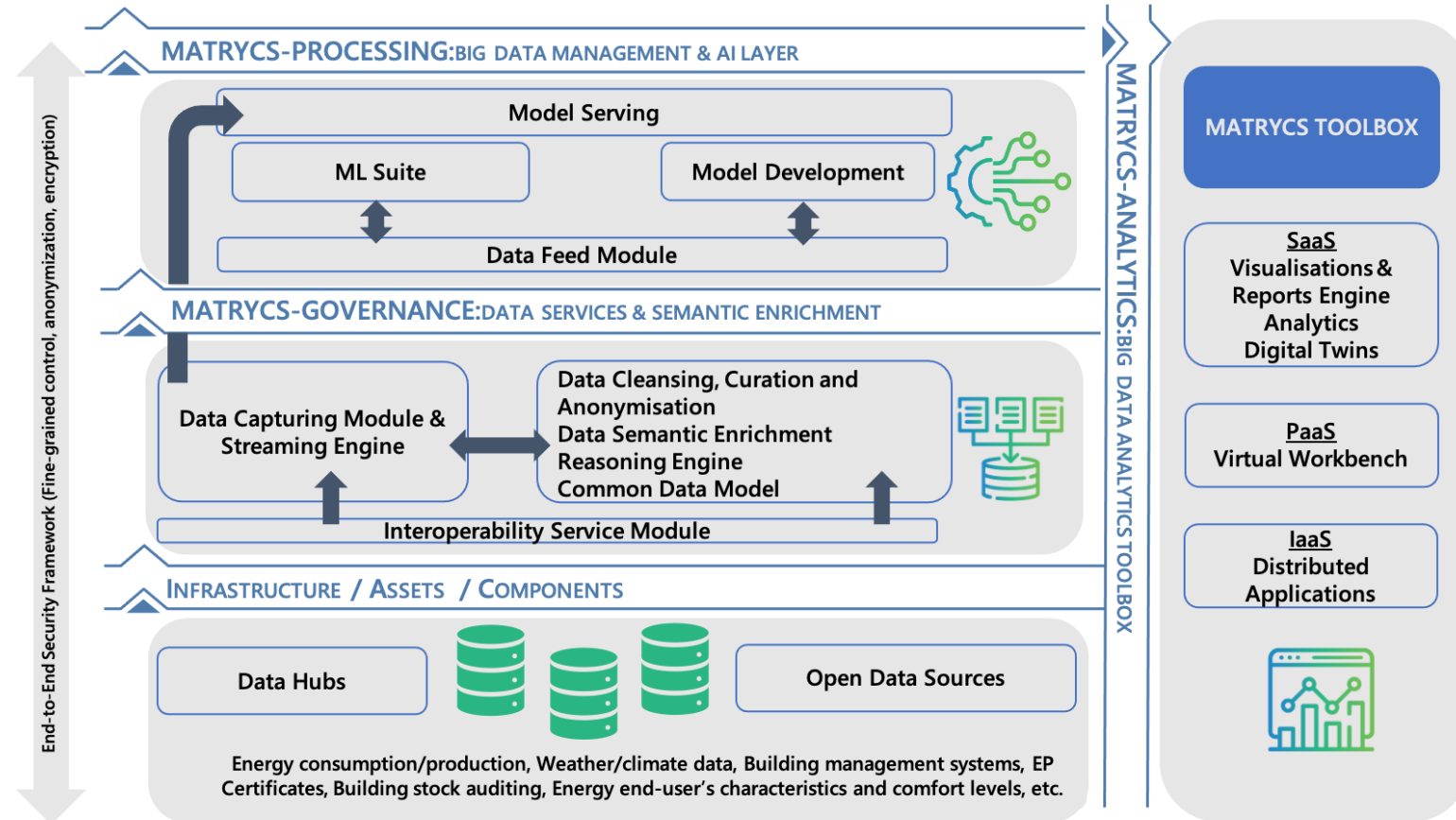
Visualisations and Reports Engine for the visual representation of the stored data and the results produced from the analytical components

Analytics Building Services exploited through LSPs

Digital Building Twins as a digital representations of physical systems

Virtual Workbench to let developers and potential innovators, design and develop new services for the buildings sector

As an open source sandbox, in container-based workflows that could be flexibly deployed over cloud infrastructures



Service and business models for:



MATRYCS-PERFORMANCE – operational stage of buildings aimed at monitoring and improving energy performance



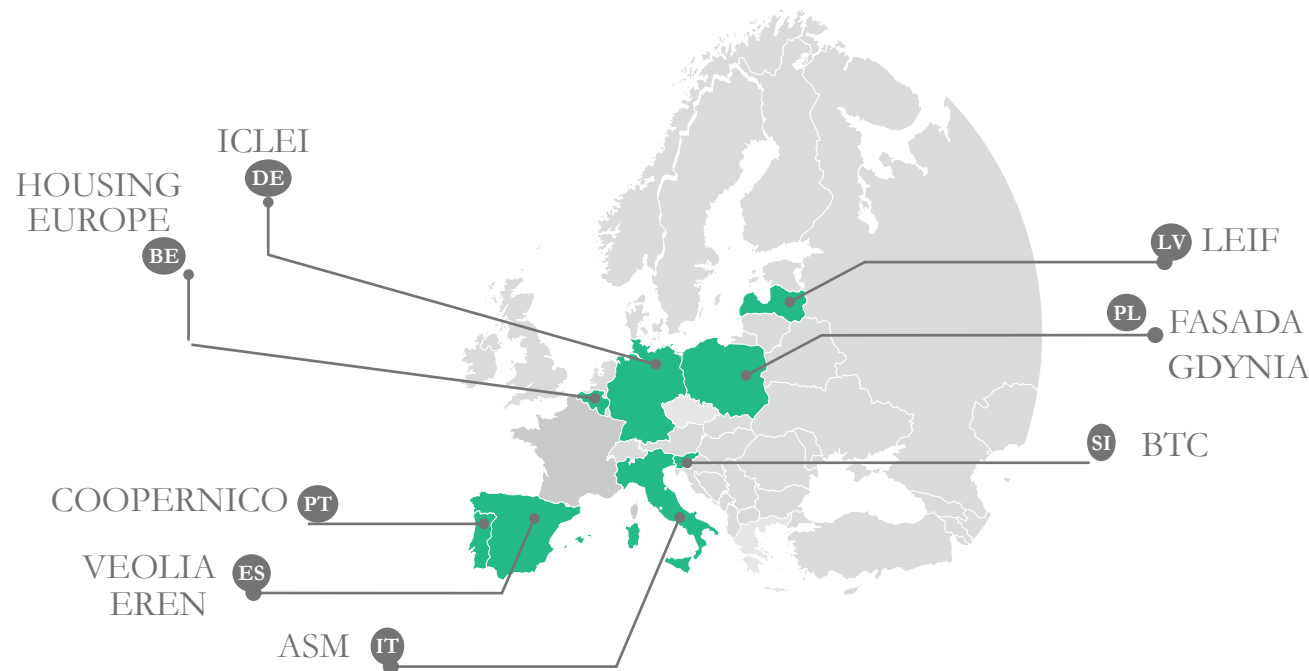
MATRYCS-DESIGN – to facilitate the design, refurbishment and development of building infrastructure



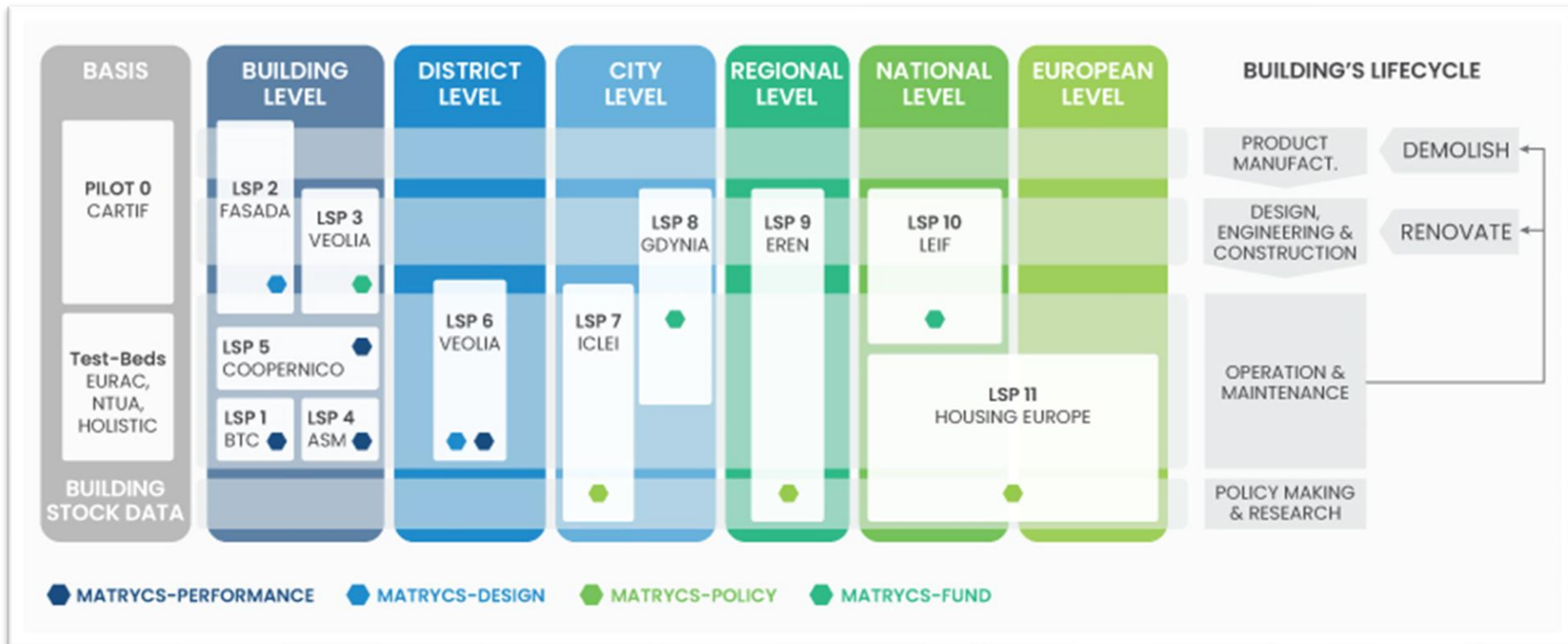
MATRYCS-POLICY – to support policy making and policy impact assessment



MATRYCS-FUND – enhanced reliability and reduced risks of energy efficiency investments, tailored to ESCOs and financing institutions



- MATRYCS pilot's approach covers the whole lifecycle of buildings:
from the product manufacturing to the operation and maintenance, as well as policy making and research
- Buildings are considered from different perspectives and scales:
buildings as individual elements to their aggregation at varied scales



PERFORMANCE



DESIGN



POLICY



FUND



Buildings' value chain stakeholders

National and local governments, network operators, suppliers, ESCO's, building managers, construction & renovation sector, investors.

IT Industry Players & SMEs

IT companies, web entrepreneurs, software engineers of solutions for big data and energy domains.

Industry Associations-Tech Clusters

European initiatives and clusters, research communities, associations, Federations.

Research & Academia

Individuals engaged in research initiatives and/or working in research and academic institutes.

Policy Makers & Standardisation Organisations (SDOs)

Policy-makers at any level, Ministries and Governments, Regulatory Agencies, Standardisation Organisations



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Thank you!

Pasquale Andriani



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contact@matrycs.eu

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