



EGI-ACE Open Call no.3

Checkpoint meeting with Shepherds

MATRYCS - Modular Big Data Applications for Holistic Energy Services in Buildings

Giuseppe La Rocca / EGI Foundation

Dissemination level: Public

Disclosing Party:

Recipient Party:



EGI-ACE receives funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 101017567.

Outline -

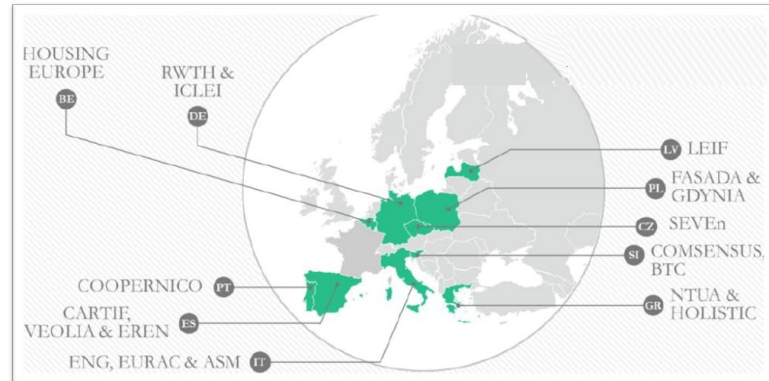
- *Background about the scientific use case*
- *Ambition, Impact and Challenges*
- *Integration Support*
- *Capacity Requirements*
- *Timeline*

Background about the scientific use case

MATRYCS - Modular Big Data Applications for Holistic Energy Services in Buildings -

- Website: <https://matrycs.eu/>
- 3 years projects (GA: 101000158), started the 1st. Oct. 2020
- Coordinated by: ENGINEERING - INGEGNERIA INFORMATICA SPA
- Overall budget: € 4 577 835
- Consortium: 19

Research Centers/ Universities	Public Bodies/ Agencies	Non-Profit/NGO	Large Enterprises/ Public Companies	Small Medium Enterprises
<ul style="list-style-type: none"> •NTUA •CARTIF •RWTH •EURAC 	<ul style="list-style-type: none"> •GDYNIA •COOPERNICO •EREN •LEIF 	<ul style="list-style-type: none"> •ICLEI •SEVEN •HOUSING EUROPE 	<ul style="list-style-type: none"> •ENG •ASM •VEOLIA 	<ul style="list-style-type: none"> •HOLISTIC •COMSENSUS •BTC •FASADA



<https://matrycs.eu/about/who-we-are>

Ambition, Impact, Challenge(s)

- The main objective of MATRYCS is to define and deploy a **Reference Architecture for Buildings Data** exchange, management and real-time processing, and to translate this reference architecture into an **Open, Cloud-based Data Analytics Toolbox (MATRYCS Toolbox)**.
- It will enable AI-based cross-sector analytics for smart energy-efficient buildings, based on seamless data-information-knowledge exchange under respective sovereignty and regulatory principles.
- The MATRYCS Reference Architecture and it consists of three main pillars:
 - The **MATRYCS-GOVERNANCE** encompassing modules related to data collection, semantic annotation and distributed storage,
 - The **MATRYCS-PROCESSING** including ML and DL model
 - The **MATRYCS-ANALYTICS** providing a set of analytics tools as a service (SaaS/PaaS/IaaS models).

Ambition, Impact, Challenge(s)

Collected data will be processed to create different business cases considering the interaction of different stakeholders and scales that will be emerged through the Large Scale Pilots that are grouped under the following categories:

- **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

Capacity Requirements



- 25-30 VMs, 100 vCPU cores, 230 GB of RAM
- 0.5TB of local disk and 1TB of block storage
 - Additional disk space can be allocated during the course of the project
- Few floating IPs for deploying the components of the MATRYCS Infrastructure

Timeline

Current status:

- A dedicated VO is now in production in the EGI Operations Portal ([#GGUS 154388](#))
- Initial capacity allocation configured @ IISAS
- Deploying of the initial service components of the MATRYCS infrastructure.
- Setup of a bastion host to limit floating IP usage, serving
 - SSH jump host
 - HTTP/S proxy
- Testing performance/collecting requirements in progress
- When a new release of the service will be available for first tests
 - Q1 2022 - first deployment of the MATRYCS platform

Instance Name	Image Name	IP Address	Flavor	Key Pair	Status	Availability Zone	Task	Power State	Age	Actions
matrycs_evaluation_serving_node	Image for EGI CentOS 8 [CentOS/8/VirtualBox]	192.168.0.237, 147.213.76.215	m1.xlarge	matrycs_evaluation_serving_node	Attivo	eu-nova	None	In esecuzione	1 settimana	Crea istantanea
matrycs_streaming_node_2	Image for EGI CentOS 8 [CentOS/8/VirtualBox]	192.168.0.17	m1.xlarge	matrycs_streaming_nodes	Attivo	eu-nova	None	In esecuzione	2 settimane, 4 giorni	Crea istantanea
matrycs_streaming_node_1	Image for EGI CentOS 8 [CentOS/8/VirtualBox]	192.168.0.113	m1.xlarge	matrycs_streaming_nodes	Attivo	eu-nova	None	In esecuzione	2 settimane, 4 giorni	Crea istantanea
matrycs_streaming_node_0	Image for EGI CentOS 8 [CentOS/8/VirtualBox]	192.168.0.50, 147.213.76.93	m1.xlarge	matrycs_streaming_nodes	Attivo	eu-nova	None	In esecuzione	2 settimane, 4 giorni	Crea istantanea
matrycs_rop_node_2	Image for EGI CentOS 8 [CentOS/8/VirtualBox]	192.168.0.245	m1.xlarge	matrycs_rop_nodes	Attivo	eu-nova	None	In esecuzione	2 settimane, 4 giorni	Crea istantanea
matrycs_rop_node_1	Image for EGI CentOS 8 [CentOS/8/VirtualBox]	192.168.0.40	m1.xlarge	matrycs_rop_nodes	Attivo	eu-nova	None	In esecuzione	2 settimane, 4 giorni	Crea istantanea
matrycs_rop_node_0	Image for EGI CentOS 8 [CentOS/8/VirtualBox]	192.168.0.82, 147.213.76.90	m1.xlarge	matrycs_rop_nodes	Attivo	eu-nova	None	In esecuzione	2 settimane, 4 giorni	Crea istantanea
matrycs_proxy	Image for EGI Ubuntu 20.04 [Ubuntu/20.04/VirtualBox]	public-network 147.213.76.87 vo.matrycs.eu-network 192.168.0.187	m1.xlarge	matrycs_proxy	Attivo	eu-nova	None	In esecuzione	3 settimane, 5 giorni	Crea istantanea
ssh_jump_host	Image for EGI Ubuntu 20.04 [Ubuntu/20.04/VirtualBox]	public-network 147.213.76.75 vo.matrycs.eu-network 192.168.0.79	m1.small	matrycs	Attivo	eu-nova	None	In esecuzione	3 settimane, 6 giorni	Crea istantanea
private-pasquale	Image for EGI Ubuntu 20.04 [Ubuntu/20.04/VirtualBox]	192.168.0.102	m1.small	matrycs	Attivo	eu-nova	None	In esecuzione	3 settimane, 6 giorni	Crea istantanea



Thank you!

Contact: egi-ace-po@mailman.egi.eu
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EGI-ACE receives funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 101017567.