



SELSUSTAINED CROSS-BORDER CUSTOMIZED  
CYBERPHYSICAL SYSTEM EXPERIMENTS  
FOR CAPACITY BUILDING AMONG EUROPEAN STAKEHOLDERS

## SMART4ALL

The SMART4ALL toolbox for boosting technology and  
business development in South, Eastern and Central Europe

**Assistant Prof. Georgios Keramidas**

Aristotle University of Thessaloniki & University of Peloponnese

*SMART4ALL Technical Coordinator*



Co-funded by the Horizon 2020 programme  
of the European Union

DT-ICT-01-2019  
Smart Anything Everywhere Area 2

[www.smart4all-project.eu](http://www.smart4all-project.eu)  
Grant Agreement: 872614

# SMART4ALL ID Card



Funded by the Horizon 2020  
Framework Programme of the  
European Union



**DT-ICT-01-2019: *Smart Anything low energy computing Everywhere – Area 2: Customized powering CPS and the IoT***

## Project information

### SMART4ALL

Grant agreement ID: 872614

Status

Ongoing project

Start date

1 January 2020

End date

31 December 2023

Funded under:

H2020-EU.2.1.1.

Overall budget:  
€ 8 660 872,50

EU contribution  
€ 7 997 647,50



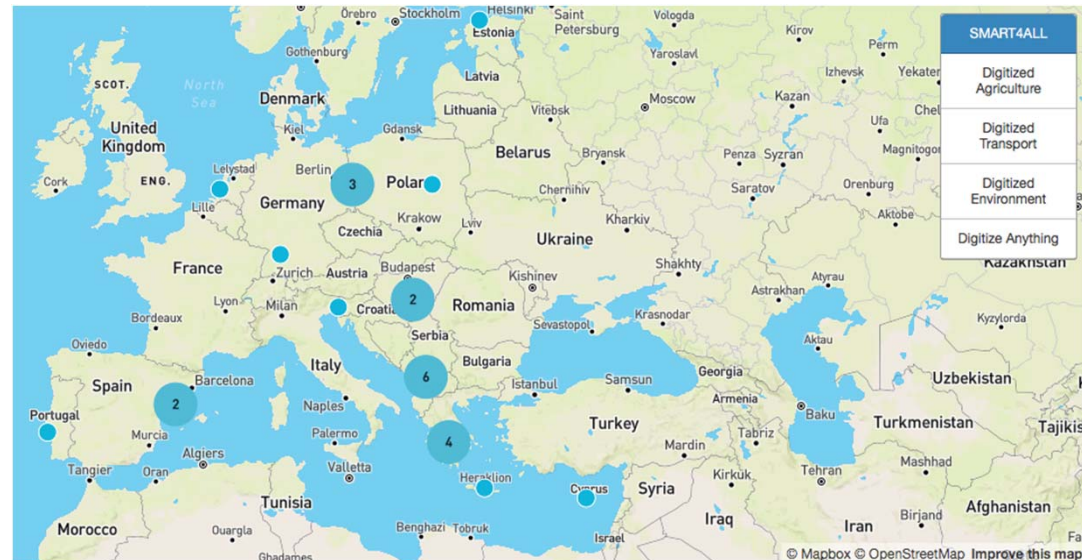
Coordinated by:

UNIVERSITY OF PELOPONNESE

Greece

# SMART4ALL Consortium

- 25 partners originated from **South, Eastern & Central Europe**
- The consortium is composed of universities, research institutes, investors, networking organizations, SMEs, Innovation Hubs and NGOs



| Diversity in Partners Expertise |                              | Geographic Diversity (15 countries) |                    |
|---------------------------------|------------------------------|-------------------------------------|--------------------|
| Universities: 10                | Research institutes (R&D): 3 | Albania: 1                          | Montenegro: 1      |
| Research institutes (BizDev): 1 | SMEs (R&D): 6                | North Macedonia: 2                  | Poland: 2          |
| SMEs (BizDev): 2                | Innovation Hubs: 1           | Cyprus: 1                           | Portugal: 1        |
| NGOs: 1                         |                              | Estonia: 1                          | Serbia: 1          |
|                                 |                              | Germany: 3                          | Slovenia: 1        |
|                                 |                              | Greece: 5                           | Spain: 1           |
|                                 |                              | Hungary: 1                          | The Netherlands: 1 |
|                                 |                              | Kosovo: 2                           |                    |

# SMART4ALL Partners



University of Peloponese  
Greece



German Aerospace Center  
Germany



Brandenburg University of Technology  
Cottbus - Senftenberg  
Germany



Patras Science Park  
Επιστημονικό Πάρκο Πατρών  
Greece



Faculty of Technical Sciences University of Novi Sad  
Serbia



AVN Innovative Technology Solutions Limited  
Cyprus



MECOnet d.o.o.  
Montenegro



PRAXI Network  
help-forward network  
Greece



Sensing & Control Systems S.L.  
Spain



Delft University of Technology  
The Netherlands



FundingBox Accelerator  
Poland



Metropolitan Tirana University  
Albania



Tallinn University of Technology  
Estonia



South East European University  
North Macedonia



Marseco  
North Macedonia



University "Ukshin Hoti" Prizren  
Kosovo



Budapest University of Technology and Economics  
Hungary



Rezos Brands  
Greece



FastTrack Ventures  
Portugal



Leibniz Institute for Agricultural Engineering and Bioeconomy  
Germany



DATAPROGNET SH.P.K.  
Kosovo



Vocational Training Centre MARGARITA  
Greece



RED PITAYA D.D.  
Slovenia



POZNAN UNIVERSITY OF TECHNOLOGY - POZNAN  
Poland



Universitat Politècnica de València  
Polytechnic University of Valencia  
Spain

20 August 2020

[www.smart4all-project.eu](http://www.smart4all-project.eu)

# SMART4ALL Management Team



Nikolaos Voros  
Project Coordinator

University of Peloponese

Greece



Michael Huebner  
Project Sub-coordinator

Brandenburg University of  
Technology

Germany



Christos Antonopoulos  
Technical Manager

University of Peloponese

Greece



Georgios Keramidas  
Technical Manager

Aristotle University of Thessaloniki

Greece



# SMART4ALL Officers



**George Tzamtzis**  
Innovation Officer

FORTH, PRAXI Network

Greece



**Sónia Magalhães**  
Business Development Officer

FASTTRACK Action

Portugal



**Dimitris Tourlidas**  
Ethics Officer

Vocational Training Centre  
MARGARITA

Greece



**Tanya Politi**  
Communication  
Officer

Patras Science Park

Greece



**Vicky Tomara**  
Communication  
Officer

Patras Science Park

Greece



**Anthi Malliori**  
Communication  
Officer

Patras Science Park

Greece



# SMART4ALL in a Nutshell

- **Vision:** To build capacity amongst European stakeholders by joining different cultures, different policies, different geographical areas and different application domains
- **How:** Through the development of selfsustained, cross-border experiments that transfer knowledge and technology between *academia* and *industry*
- **Technological Areas:** Customized low energy computing (CLEC) & IoT
- **Application Areas:** Digitized Environment, Digitized Agriculture, Digitized Anything and Digitized Transport

# SMART4ALL Task Forces

|  |  |
|--|--|
| <b>Digitized Transport Task Force (DTTF)</b>                   | <b>Digitized Agriculture Task Force (DAgTF)</b>    |
| Leader: DLR<br>Members: TalTech, PUT                           | Leader: ATB<br>Members: REZOS<br>BRANDS, FTN       |
| <b>Digitized Environment Task Force (DETF)</b>                 | <b>Digitized Anything Task Force (DATF)</b>        |
| Leader: S&C<br>Members: PSP, MTU                               | Leader: BME<br>Members: UPZ,<br>MARGARITA.VTC, UPV |
| <b>SMEs Task Force (STF): SEEU (Leader), AVN, MAR, DPN, RP</b> |  |

- The roles of Task Forces are to:
  - ✓ **Promote** the SMART4ALL vision in each thematic pillar
  - ✓ **Build** the SMART4ALL ecosystem
  - ✓ **Manage** the corresponding business generation activities
- **Overall:** to customize SMART4ALL activities and formulate the MaaS services to each thematic pillar
- **Role:** to provide feedback to the project from the start-up and SME point of view.



# SMART4ALL Task Force Leaders



**Umut Durak**

Task Force Leader for Digitized  
Transport

German Aerospace Center

Germany



**Cornelia Weltzien**

Task Force Leader for Digitized  
Agriculture

Leibniz Institute for Agricultural  
Engineering and Bioeconomy

Germany



**Santiago Macho-  
Gonzalez**

Task Force Leader for Digitized  
Environment

Sensing & Control

Spain



**Bela Feher**

Task Force Leader for Digitized  
Anything

Budapest University of Technology  
and Economics

Hungary



**Adrian Besimi**

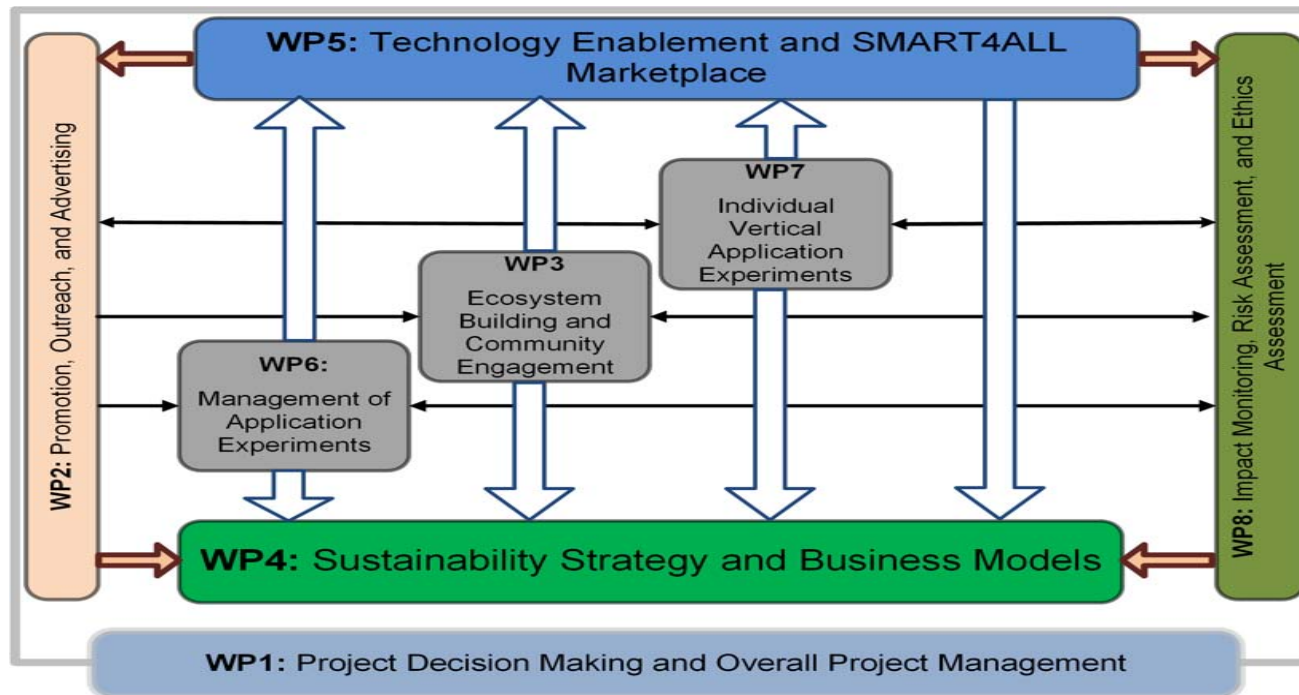
Task Force Leader for  
SMEs

South East European University

North Macedonia



# SMART4ALL Workpackages

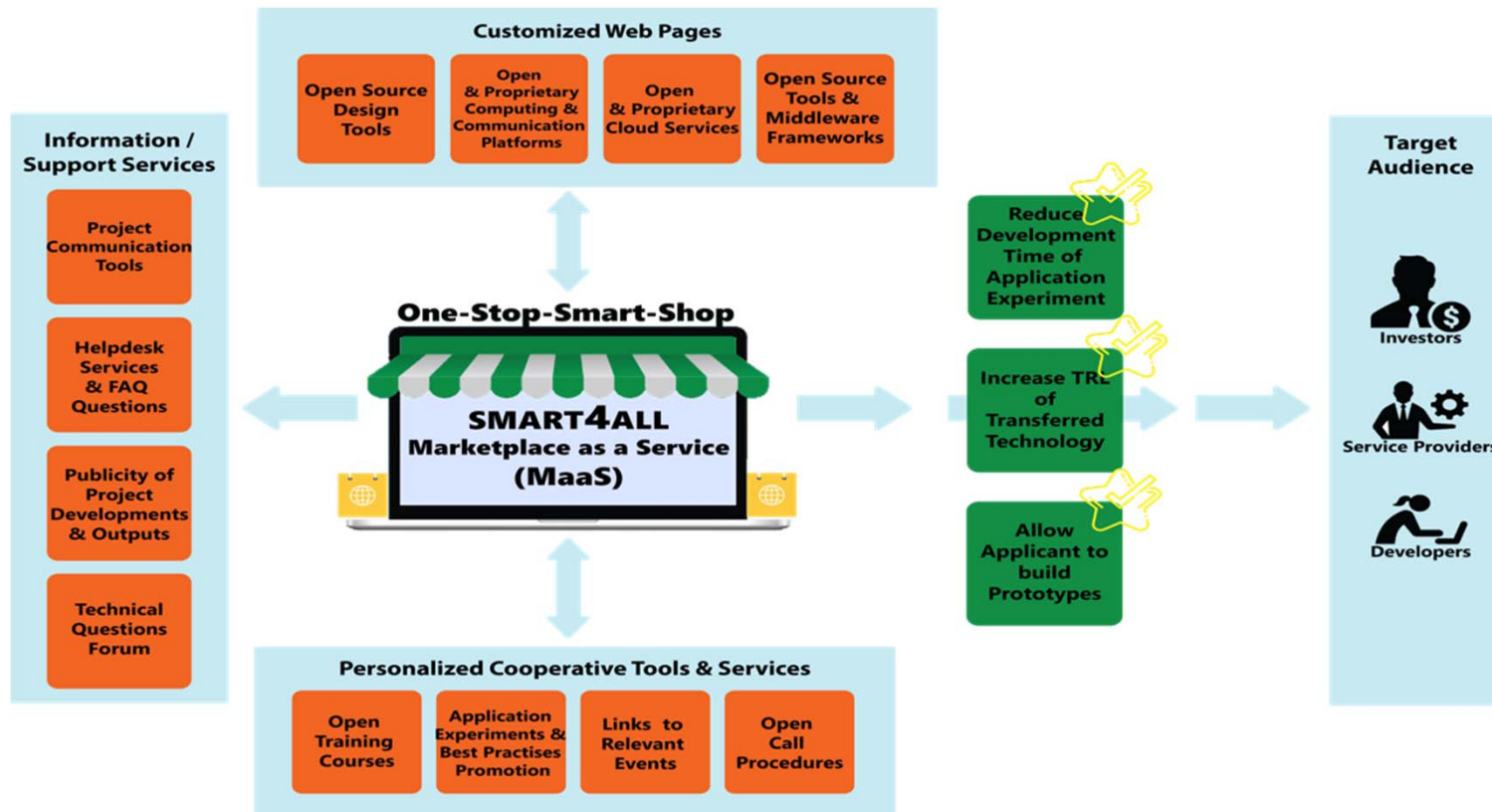


# SMART4ALL Marketplace

## Marketplace as a Service Concept is one the cornerstones/flagships of Smart4ALL

- **What is it ?** A novel one-stop-smart-shop for experts and non-expert third parties seeking (open-source mainly) ICT technologies
- **What is its main target ?** reduce the development time of an startup /SME/mid-cap that is doing business in one of the four SMART4ALL thematic areas
- **Unique selling point:** AI based match-making and collaboration activities will be hosted in the MaaS

# SMART4ALL Marketplace



# SMART4ALL Marketplace

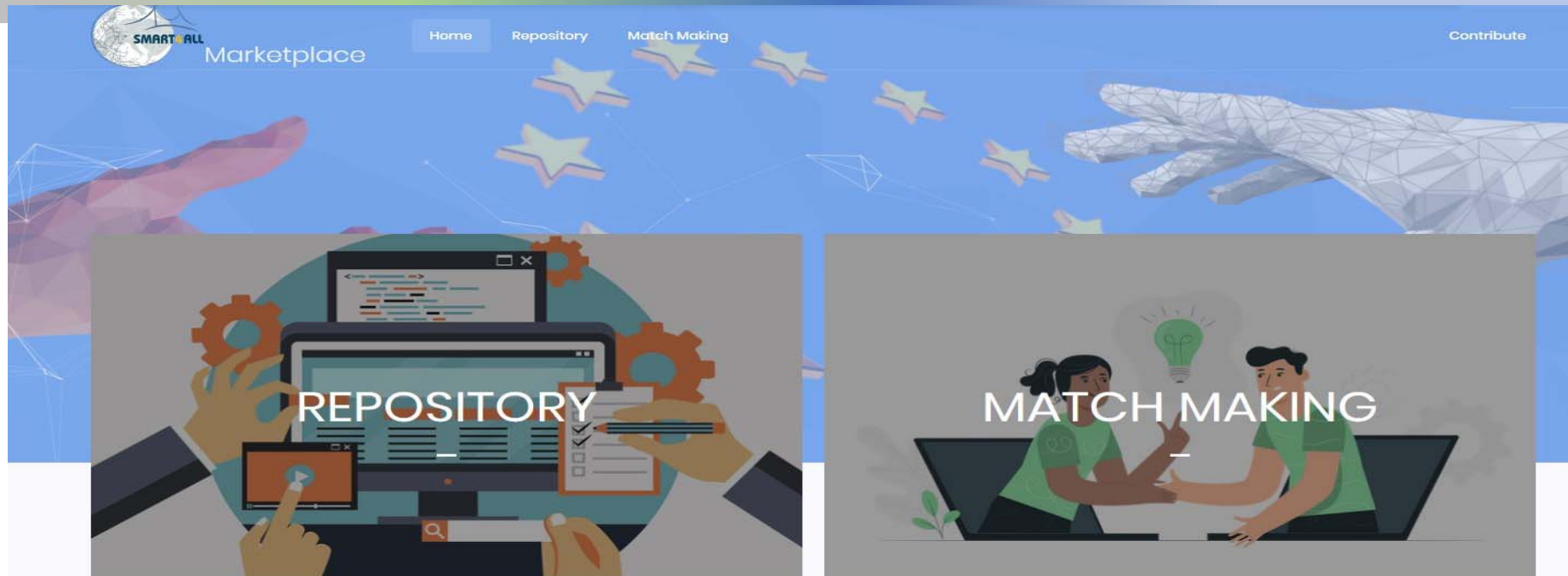
## How MaaS will achieve its goal, to offer the “Prepare for Growth” Services

- Offer practical technical tools/services to accelerate design, development, prototyping
- Serve as a path towards brokerage, coaching and guidance services to access funds and pave the path towards market growth and investment manufacturing phases
- Showcase good practices and golden examples through specific PAEs and/or collaborations achieved in the context of SMART4ALL



**SMART4ALL through the concept of  
MarketPlace will offer a nexus of services**

# The MarketPlace SW infrastructure



SMART4ALL has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 872814

SMART4ALL is a four-year Innovation Action project funded under Horizon 2020 framework under call DT-ICT-01-2019: Smart Anything Everywhere – Area 2: Customized low energy computing powering CPS and the IoT.

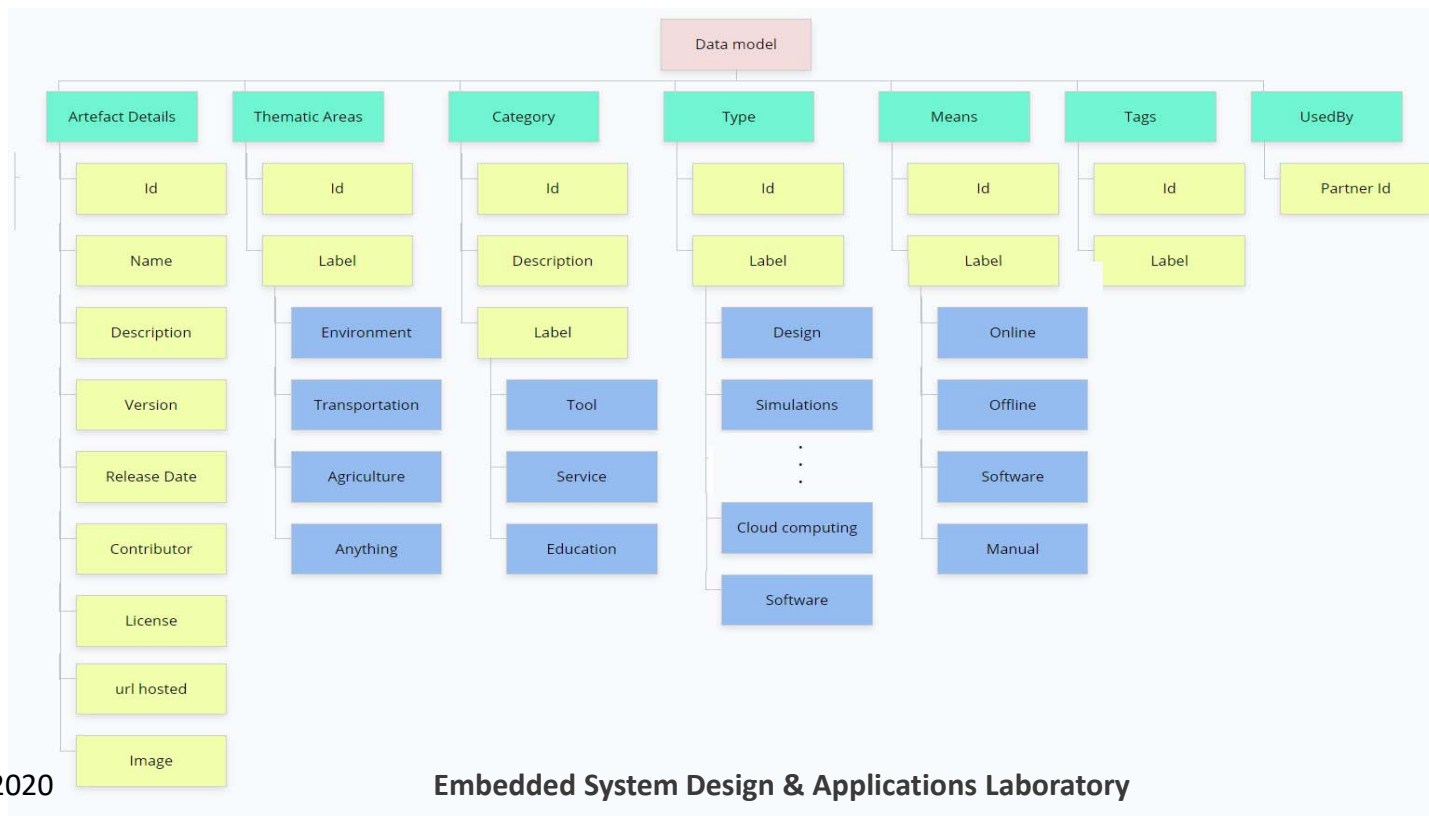
# The MarketPlace SW infrastructure

- Repository of artefacts
  - Tools (VMs, Dockers, SW, IPs etc.)
  - Educational material (tutorials, courses, training, how-to etc.)
  - Events (funding opportunities)
- Thematic areas
  - Environment
  - Agriculture
  - Transportation
  - Anything



# The MarketPlace SW infrastructure

## Data model structure

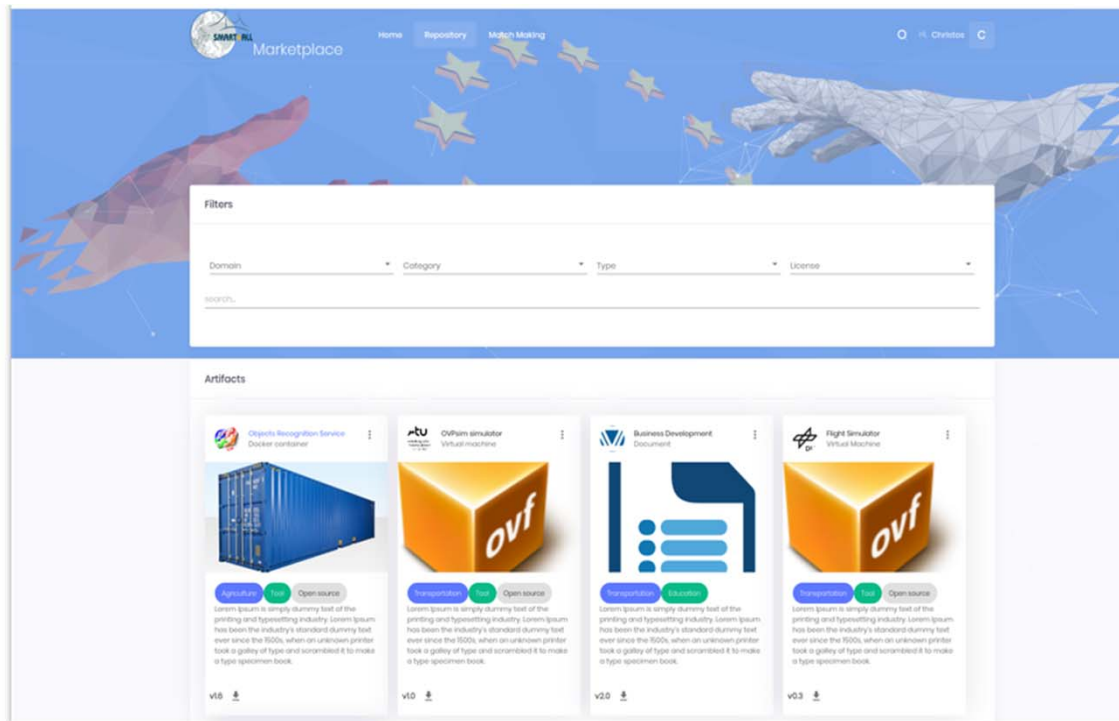


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Embedded System Design & Applications Laboratory

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# The MarketPlace SW infrastructure



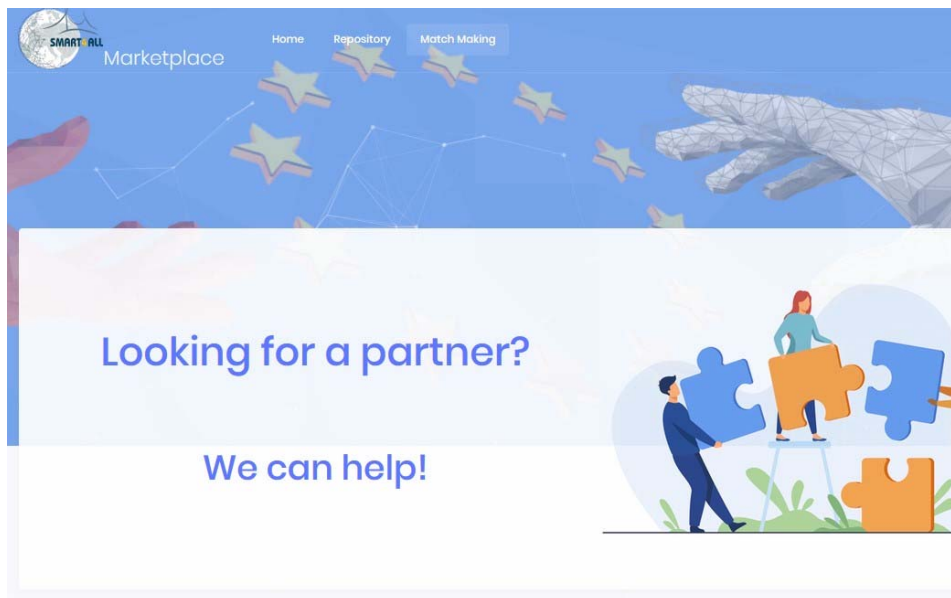
Marketplace follows the **microservices** paradigm where all the functionality is given as a set of **loosely coupled services powered by containerization technology**

## MaaS includes:

- Open and proprietary cloud services
- Open and proprietary computing and communication platforms
- Open-source tools and middleware frameworks
- Open-source design tools Training (model-based) open course

# The MarketPlace SW infrastructure

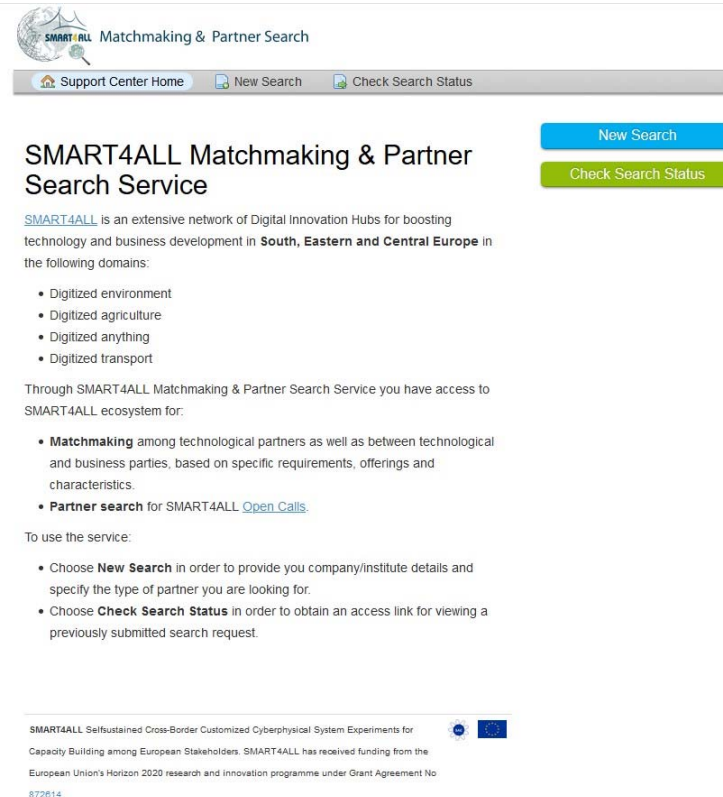
<https://matchmaking.smart4all-project.eu>



SMART4ALL Marketplace

Home Repository Match Making

Looking for a partner?  
We can help!



SMART4ALL Matchmaking & Partner Search

Support Center Home New Search Check Search Status

New Search  
Check Search Status

## SMART4ALL Matchmaking & Partner Search Service

SMART4ALL is an extensive network of Digital Innovation Hubs for boosting technology and business development in **South, Eastern and Central Europe** in the following domains:

- Digitized environment
- Digitized agriculture
- Digitized anything
- Digitized transport

Through SMART4ALL Matchmaking & Partner Search Service you have access to SMART4ALL ecosystem for:

- Matchmaking** among technological partners as well as between technological and business parties, based on specific requirements, offerings and characteristics.
- Partner search** for SMART4ALL [Open Calls](#).


To use the service:

- Choose **New Search** in order to provide you company/institute details and specify the type of partner you are looking for.
- Choose **Check Search Status** in order to obtain an access link for viewing a previously submitted search request.

SMART4ALL Self-sustained Cross-Border Customized Cyberphysical System Experiments for Capacity Building among European Stakeholders. SMART4ALL has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. [872614](#)

# SMART4ALL Tools – Matchmaking Service

<https://matchmaking.smart4all-project.eu>



Matchmaking & Partner Search

[Support Center Home](#) [New Search](#) [Check Search Status](#)

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SMART4ALL Self-sustained Cross-Border Customized Cyberphysical System Experiments for Capacity Building among European Stakeholders. SMART4ALL has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 872814

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Matchmaking & Partner Search

[Support Center Home](#) [New Search](#) [Check Search Status](#)

## New Search

Please fill in the form below to create a new Search Ticket.

### Contact Information

**IMPORTANT NOTICE:**  
The **Email Address & Full Name** are required fields for creating a new Search Ticket to the "SMART4ALL Matchmaking & Partner Search Service"

**Email Address \***

**Full Name \***

**Help Topic**  
SMART4ALL Matchmaking Info

### SMART4ALL Matchmaking & Partner Search Service: ORGANIZATION

Your Organization:


**Name \***

**Expertise \***

**Country \***  
— Select —

**Type \***  
— Select —

[www.smart4all-project.eu](http://www.smart4all-project.eu)



Matchmaking & Partner Search

[Support Center Home](#) [New Search](#) [Check Search Status](#)

## Check Search Status

Please provide your Email Address and a Search Ticket Number. An access link will be emailed to you.

**Email Address:**

**Search Ticket Number:**

[Email Access Link](#)

If this is your first time contacting us or you've lost the Search Ticket Number, please [create a new Search](#)

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# SMART4ALL Tools – Matchmaking Service

## AI based matchmaking (under development)

Match Making

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Proin cursus pretium vestibulum. Curabitur accumsan luctus neque, sit amet consectetur sapien. Vivamus in metus sagittis justo ultramcorper varius et quis risus. Morbi fermentum id leo eget commodo.

Describe Your Entity... Describe Your Needs... Get Your Match!!!

Looking for

Mentoring  
Tools  
Cooperation  
????

Tell us something

BACK NEXT

SMART4ALL has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 872664.

SMART4ALL is a four-year Innovation Action project funded under Horizon 2020 framework under call DT-ICT-01-2019 "Smart Anything Everywhere – Area 2, Customized low energy computing powering CPE and the IoT."

Enter Your Email

Subscribe

2020 © SMART4ALL

Marketplace

Home Repository Match Making

Match Making

Describe Your Entity... Describe Your Needs... Get Your Match!!!

Check out the following artifacts...

- Objects Recognition Service  
Docker container
- OVFSim simulator  
Virtual machine

Agriplus Tool Open source

Transportation Tool Open source

v1.0 RESET

# The MarketPlace SW infrastructure

<https://marketplace.esda-lab.gr/home>

- Envisioned SMART4ALL Intelligent MatchMaking Service
  - Keyword match: Artefact in MarketPlace identified through their corresponding tags
  - NPL Techniques to be applied on artefacts with their corresponding tags
  - Schematics utilization
  - Collaborative filtering to achieve optimized recommendation
- Artefacts contribution
  - Both from SMART4ALL partners as well as funded projects

# SMART4ALL Tools – Project Website

<https://www.smart4all-project.eu>



- Project news
- Access to SMART4ALL services
- Access to SMART4ALL Network in SEE
- Open call announcement
- Apply for SMART4ALL Open Calls

First Open Call for Knowledge Transfer Experiments - Submission Countdown

42 04 09 15  
Days Hours Minutes Seconds

# The SMART4ALL Added Value Services

## Auxiliary Services to Funded Project

- Each SMART4ALL funded project will receive
  - Technical coaching services
  - Business coaching services
  - Ethics coaching services (if required)



# The SMART4ALL Added Value Services

## Project Management Tools Support & Maintenance

- Each SMART4ALL funded project will receive a dedicated Next Cloud based infrastructure offering user-friendly, configurable, extensible and open collaborative and project management tools
  - File repository
  - Collaborative tools
  - Calendar
  - Task management tools
  - Reporting tools
  - Any more...
- SMART4ALL consortium will offer technical support, monitoring and maintenance to these tools

# SMART4ALL Infrastructure

**SMART4ALL offers to the members of its network/ecosystem cloud computing services through state-of-the-art hardware & software infrastructure:**

- Software-as-a-Service (SaaS)
- Hardware-as-a-Service (HaaS)
- Scalable architecture to meet work loads and provide 24/7 availability
- 24/7 support by technology experts
- High speed network interconnection with GRNET backbone
- Open source SW employed from virtualization to application layer

20 August 2020

[www.smart4all-project.eu](http://www.smart4all-project.eu)

**SMART4ALL infrastructure is hosted and maintained by**



UNIVERSITY OF PELOPONNESE



**ESDA  
LAB**

Embedded System  
Design & Applications  
Laboratory

# SMART4ALL Infrastructure

## ESDA Lab Data Center

### 8 Rack Mounted High Performance Servers

Total CPUs: **164**

Total Memory: **1.216 GBytes**

Type 1 Hypervisors: VMWARE ESXi / Proxmox  
Virtualization Technologies

### Next Generation Firewalls (HGFW) - Hardware / High Availability Cluster

Double hardware firewalls

### Storage Area Network (SAN) - Fibre Channel (FC @ 16 Gbps) Infrastructure

Capacity: **20 TBytes**

### Network Attached Storage (NAS @ 1 Gbps) Infrastructure

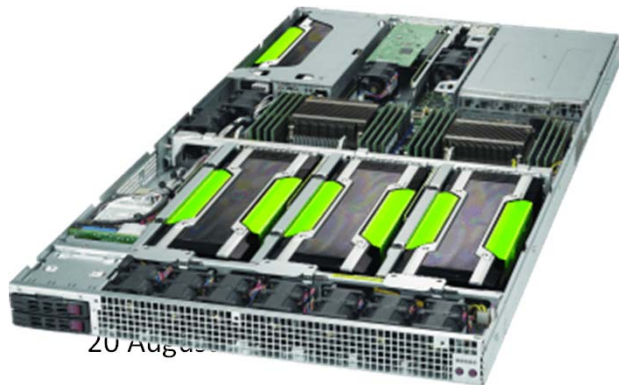
Capacity: **30 Tbytes**

# SMART4ALL Infrastructure

FPGA Cluster



GPU Cluster



## ESDA Lab Data Center

A cluster of both high-performance & embedded FPGAs and high-end GPUs will be available and offered through the SaaS frameworks

# Join now SMART4ALL Network !

Join now SMART4ALL Network in South, Eastern and Central Europe by:

- Subscribing to SMART4ALL newsletter:  
<https://smart4all-project.eu/joinus>
- Using SMART4ALL matchmaking services:  
<https://matchmaking.smart4all-project.eu>
- Applying to SMART4ALL Open Calls:  
<https://smart4all-project.eu/opencalls-apply-now>
- Employing SMART4ALL marketplace:  
<https://smart4all-project.eu/marketplace>



# SMART4ALL Social Media

Follow SMART4ALL on:



<https://www.linkedin.com/groups/12369183>



[https://twitter.com/Smart\\_4All](https://twitter.com/Smart_4All)



<https://www.facebook.com/SMART4ALL.Project>



<https://www.youtube.com/channel/UCwmSI9LCI2vNBO-3k75dvJA>

***... and stay up to date for the latest SMART4ALL news, activities & funding opportunities !***

# SMART4ALL Contact persons

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