R&D

Software Imagination & Vision

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SIMAVI Business Card

+ 90 R&D projects awarded

Horizon EUROPE
Horizon 2020

DEP EDF
ERASMUS+

ISF
ERA-Net

EUREKA
Eurostars

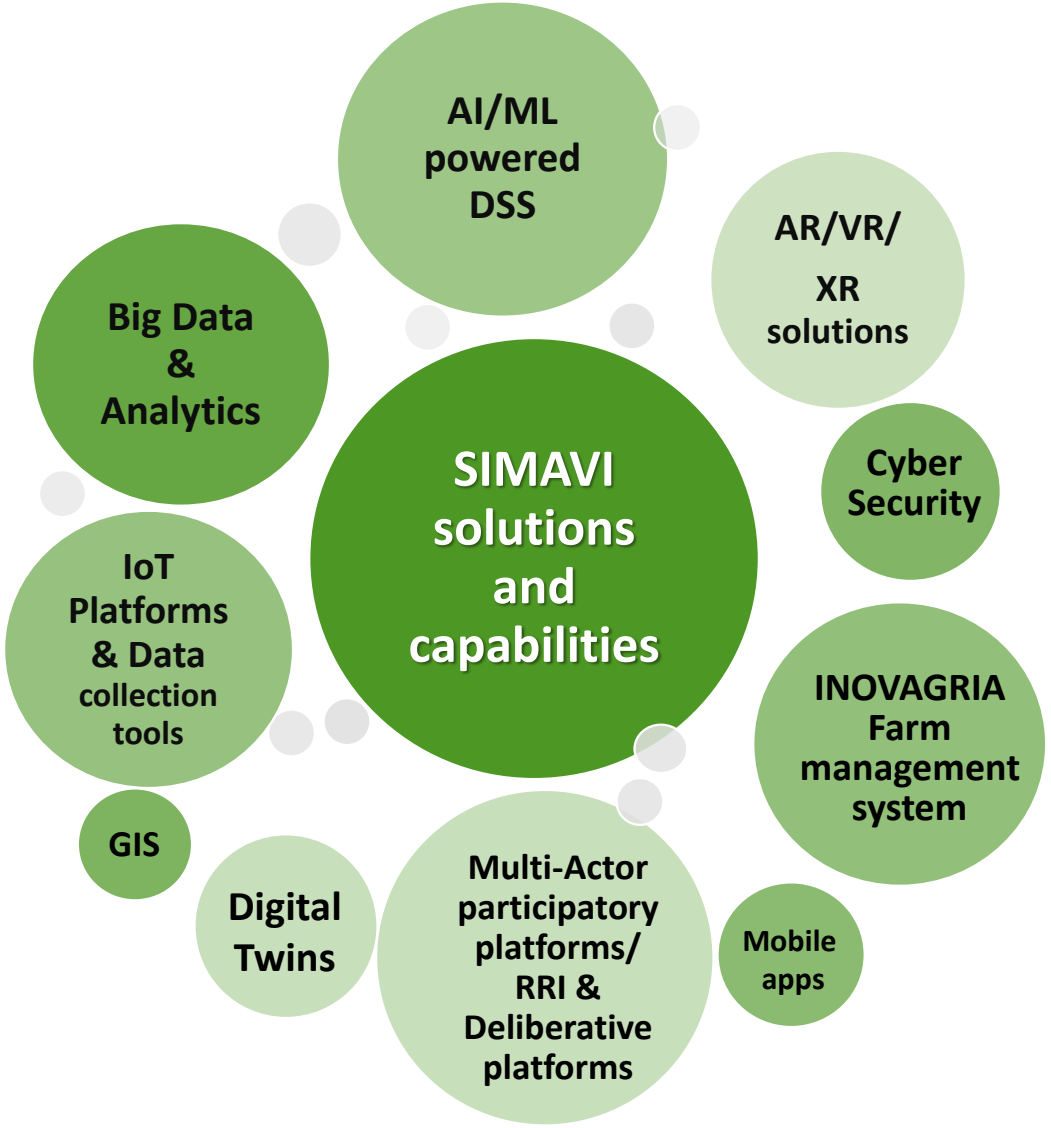
SIMAVI develops solutions for various industries

12 Projects Coordinated

- Security, Cybersecurity & Intelligence
- Energy, Mobility & Transportation
- Defence
- eAgriculture, Climate Change & Biodiversity Protection
- eTraining
- Industry 4.0 & Circular Economy
- eHealth
- Research & Development Projects
- eCustoms
- Enterprise Application Suite
- Customized Applications
- eGovernment

https://simavi.ro/en/rd-projects

SIMAVI Overview



COMPETENCES

- ✓ **Platforms development**, **Integration** and **Interoperability**
- ✓ **AI/ML powered Software Tools**, **DSS** and **Analytics**
- ✓ **AR/VR/XR** development for awareness, immersive simulations for field-support and training
- ✓ **User-center design** (UX, UI, UJ)
- ✓ **Pilot deployment** and **implementation** in Eastern Europe, by engaging key partners:
  - Cities & Public Authorities
  - NGOs & Clusters & Research Centers
  - Farmers & farm associations
  - Industry 4.0
  - Energy DSO/TSO
  - Hospitals
  - LEAs & FRs
  - Ministry of Environment, Water and Forests
  - Ministry of Agriculture and Rural Development



Cybersecurity & Security

SOLUTIONS & EXPERIENCE

Security Infrastructures and Frameworks

- ✓ Real-time Early Detection and Alerting Framework for Operation Control Systems
- ✓ Operational Cybersecurity Risk Management Platform
- ✓ Big Data Integration Platform with real-time alerts
- ✓ Physical threat response Optimization (PTRO) tool
- ✓ Data Fusion Tool for multi-source comprehensive data view
- ✓ Analytics for real-time border event alerts

Data Acquisition, Analysis, and Visualization

- ✓ Social Media Data Acquisition Engine
- ✓ Multimedia Analysis for Crime prevention and Investigation
- ✓ Mobile apps monitoring or for on Field Guidance
- ✓ AI/ML-powered Prediction & Visual Intelligence
- ✓ Stream data collector
- ✓ Biometric data integration & analysis

Training and Skill Development

- ✓ XR Training dedicated to LEAs, First Responders and Cybersecurity experts

REFERENCES:

Click on Projects

MARCONNECT [Coordinator SIMAVI]

ODYSSEUS [Coordinator SIMAVI]

BORDER UAS [Coordinator SIMAVI]

TeamaWare [Coordinator SIMAVI]

REDALERT [Coordinator SIMAVI]

VIGIMARE, CUSTOM|AI, SPIRIT, SECUR EU, CONNECTOR, PANTHEON, CC-DRIVER, SECANT, ECHO, CONNEXIONS, SPEECHXRays, CREST, IMPETUS, PREVISION, SIMARGL, S&R, SMILE, ISOLA, ENSURESEC, MAGNETO, METICOS

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DEFENCE [European Defence Fund]

SOLUTIONS & EXPERIENCE

- ✓ **Adapting technologies from civil applications or addressing hybrid warfare**
- ✓ **Measurement and monitoring of physiological and cognitive state of soldiers**
- ✓ **AR/VR/XR**
- ✓ Collection and sharing of **sensor data**
- ✓ **User interfaces** to help users and in particular pilots to understand and anticipate the **system behaviour**
- ✓ **Common simulation framework for wargames/combat simulations** with the potential to facilitate reinforcement learning for mission planning and execution support
- ✓ **Computer-based decision support system that leverages AI, machine learning, wargames/combat simulations and digital twins of the battlespace**

REFERENCES:

Click on Projects

FEDERATES - FEDeratedEcosystem of euRopean simulation Assets for Training and decision Support

FEDERATES project has the objective of building the first prototype of a **European MSaaS (Modelling & Simulation as a Service) Ecosystem, to support decision making and training of European Armed Forces.** The project, led by Rheinmetall Electronics, is a multinational activity funded by the EU Commission, with the support of **15 European Nations.**

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Circular Economy & Industry 4.0

SOLUTIONS & EXPERIENCE

- ✓ **ICT platforms** –> WhiteGoods Platform, Automotive Platform and collaborative Private Cloud Platform
- ✓ **Data collection tool from IoT & sensors**
- ✓ **AI-based Decision Support System for manufacturing**
- ✓ **AI-Analytics Designer targeted at sustainable consumption patterns**
- ✓ **Digital Twins**
- ✓ **Integration framework** for human-centric **AI multi-agent systems**
- ✓ **Analytics tool** – for process modelling, predictive downtime, failure, critical events
- ✓ **MaaS – Manufacturing as a Service**
- ✓ **Augmented Reality (AR) based inspection and maintenance tool**
- ✓ **Cybersecurity solutions** (data encryption, authentication, authorization)
- ✓ Cloud to edge solutions

REFERENCES:

Click on Projects

ACCURATE

[Coordinator SIMAVI]

KYKLOS 4.0

PREDICT 6G

hivemind

NEMO

MatCHMaker

EUMINE

Circ Thread

FACTLOG

ReCiPSS

ZERO DEFECTS Manufacturing Platform ZDMP

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Green Deal & Environmental Monitoring

SOLUTIONS & EXPERIENCE

Environmental monitoring

- ✓ GIS
- ✓ ICT Toolkit for simulating and assessing the impacts and risks of climate change
- ✓ Toolbox for Decision Support and adaptive control of air quality monitoring, Soil Pollution monitoring

Urban Safety and Management

- ✓ Integrated toolkit for intelligent management of processes, ethics and technology for Urban Safety
- ✓ ICT framework for environmental emergency & awareness

Forest and Ecosystem Management

- ✓ AI based DSS for optimizing forest management decisions for a low-carbon, climate resilient future in Europe
- ✓ Platform for efficient resource utilization and prevention against global wildfire threats
- ✓ Authoring tool with AR/VR content curation
- ✓ Support large-scale, cross-border demonstrators of ecosystem restoration, focusing on degraded terrestrial, freshwater, coastal or marine ecosystems
- ✓ ECOSUNT – Efficient solutions for waste management

REFERENCES:

Click on Projects

FLOOD-serv

[Coordinator SIMAVI]

NEVERMORE

GEO MONITOR

SILVANUS

Opt4EU

TREEADS

IMPETUS

ECOSUNT
EFFICIENT SOLUTIONS FOR WASTE MANAGEMENT

establish

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Energy efficiency & Mobility

SOLUTIONS & EXPERIENCE

- ✓ **IoT Platform development & Data integration from IoT sensors**
- ✓ **EIIS (Energy Integrated Information System)** application
- ✓ **Predictive Analytics** Tool to anticipate downtime, failure, critical events
- ✓ **Software Architecture** for small and medium distribution system operators (DSOs)
- ✓ **Integrated Smart GRID Cross-Functional Solutions**
- ✓ **Cybersecurity domain solutions** (vulnerability assessment, threat detection, risk mitigation):
  - Heatmaps to represent vulnerable components or malware/intrusion activity
  - Dashboard and Attack Graphs displaying how an intruder can traverse a network of nodes through vulnerabilities
  - Dark Web Monitoring tool (MT) for potential threats
  - SIEM (System Information Event Management) for collecting and analyzing security event data

REFERENCES:

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ENERGY SHIELD

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inteGRIDy

FlexiGrid

CyberSEAS

DEM4PED

iDRIVING

INTERPED

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Smart Communities & Water ecosystems

SOLUTIONS & EXPERIENCE

- ✓ **AI-based Decision Support Systems** dedicated to policymakers and communities
- ✓ Smart City **Digital Twins**
- ✓ Data collection tool from **IoT & sensors**
- ✓ **Citizen participatory** platform / **RRI** platform
- ✓ **Social Media Data Acquisition Engine**
- ✓ AI-powered **credit risk assessment** and **factoring indicators**
- ✓ **Mobile Application** for citizens engagement
- ✓ **Augmented & Virtual Reality**
- ✓ **Interactive & educational games** development, **serious games & gamification**
- ✓ **Interoperable climate-neutral** digital platform for **sustainable peri-urban transformation**
- ✓ **ICT Framework** for water ecosystems

REFERENCES:

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NAIADES

LIVING INNOVATION

ITHACA
AI To Enhance Civic Participation

PANTHEON

SPURUP

ACAB

SUPER MoRRI

EUNOMIA

NEVERMORE

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Food & eAgriculture

SOLUTIONS & EXPERIENCE

- ✓ **INOVAGRIA farm management system** created for managing the activity of agricultural, vegetable or animal farm
- ✓ **AI-based Decision Support Systems (DSS)** for precision farming and resource optimisation
- ✓ **Community participatory platforms/ RRI platforms**
- ✓ **Geographic Information Systems (GIS)** for mapping and spatial analysis
- ✓ **Interactive Dashboards** to provide real-time visualizations of key indicators, helping stakeholders make informed decisions
- ✓ **Digital Twin**
- ✓ **IoT platforms** and **real-time data collection** from **IoT sensors**
- ✓ **Mobile apps**
- ✓ Data driven **AR/VR/XR** immersive simulations

REFERENCES:

Click on Projects

INOVAGRIA

AgriData Value

AGRARIAN

demeter

TRIBIOME

Beneficiary: **Payment and Intervention Agency for Agriculture**

Integrated Administration and Control System (IACS)

Figures and Facts:

The system ensures consistency and compatibility between national schemes for farmers, covering:

- **944 076 unique applications submitted for a yearly campaign**
- **34,55 million agricultural physical blocks, for all schemes required**
- **1,45 million farmers in the database**
- **Over 13,4 billion EUR paid**
- **Over 83 million operations performed in the APIA's information system**

Organizational structure:

- **42** county centres
- **5,000** internal users
- **+900,000** beneficiaries

INOVAGRIA – Farm Management System



The software created for farmers, for managing the activity of an **agricultural, vegetable** or **animal farm**

- The possibility of integration with ERP software or other existing solutions
- Integrated solution with existing electronic systems on agriculture
- Increasing the profit
- Affordable solution and mobile environments: tablet, Smartphone



- Identification of **material** and **fuel losses**
- **Crops** evolution registration
- **Water assessment** in case of drought and **irrigation**
- Identification of **land** with low production
- **Soil characteristics** by fertilization history

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eHealth

SOLUTIONS & EXPERIENCE

Healthcare and Patient Support

- ✓ Tele-monitoring & Tele-rehabilitation applications
- ✓ Integrated and interactive Patient Care Ecosystem that supports quality of life for elderly people
- ✓ Monitoring solution for patients with neurodegenerative diseases
- ✓ Serious Games for brain training
- ✓ AR/VR for rehabilitation support

Advanced Technology Solutions

- ✓ Decision Support Tool for monitoring and controlling of air quality
- ✓ AI based DSS to foster evidence-based pain relief methods for cancer patients
- ✓ Multi-source real-world clinical information access and integration framework
- ✓ ML Anomaly Detection Component and NLP services
- ✓ Virtual Assistant and Application for Patient' Treatment Journey dedicated for healthcare professionals and carers use
- ✓ Diagnostic Support Tool to assist healthcare professionals

REFERENCES:

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CVDLINK

[Coordinator SIMAVI]

enact

CARING NATURE
Sustainable solutions for healthcare

iBeChange

MES-CoBraD

PAINLESS
Pain Relief in Cancer

InteropEHRate
EHR in people's hands across Europe

vCARE

STRATIFAI

SPHINX

DEEPHEALTH

LETIT FLOW

PROCare4Life

Follow.Me

BRAIN@home

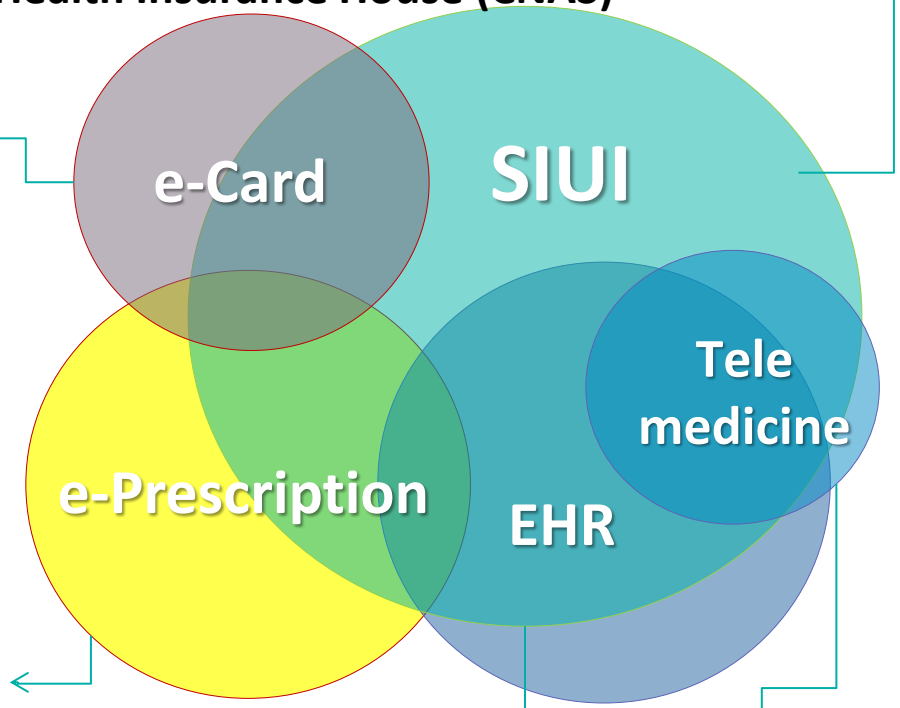
eHealth

Integrated Health Information System in Romania – SIUI

Beneficiary: **National Health Insurance House (CNAS)**

15,5 millions persons registered with cards





- 150+ millions prescriptions registered in 3 years;
- 16,000 prescriptions daily.



Completed in Dec. 2015

- over 6,000 Family Doctors
- over 1,000 hospital users
- 8.6 millions personal files

Covers all population of Romania

- all Health Insurance County Houses
- **62,968** doctors
- **14,812** family doctors
- **111,783** nurses
- **5,799** clinical services providers
- **2,672** laboratory services providers
- **893** home care providers
- **1,126** providers of ambulatory recovery services
- **802** hospital services providers
- **179** ambulance services providers
- **302** suppliers of medical devices
- **5,398** providers of pharmaceutical services
- **6,799** dental care providers

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eLearning & eTraining

SOLUTIONS & EXPERIENCE

1. **AI-powered Virtual Tutor & Assistant** - Personalized guidance and continuous real-time support for learners.
2. **AI-Powered Authoring Tool** - Automates the creation of digital lessons using AI.
3. **Serious Games & Gamified Learning** - Interactive learning through immersive, game-based scenarios.
4. **Mobile Learning Applications** - On-the-go, bite-sized learning for quick knowledge delivery.
5. **XR/AR/VR Simulations** - Augmented and Virtual Reality environments blending digital information with real-world scenarios for practical learning.
6. **eTraining courses development** - including microlearning, MOOCs, video learning to address diverse learning needs.
7. **Learning Experience Platform (LXP)** - promotes engagement with interactive and personalized educational content.

REFERENCES:

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SHIFT

XR4ED

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HECOF
Higher Education Classroom Of the Future

LAW-GAME

ISOLA

SPIRIT

S&R

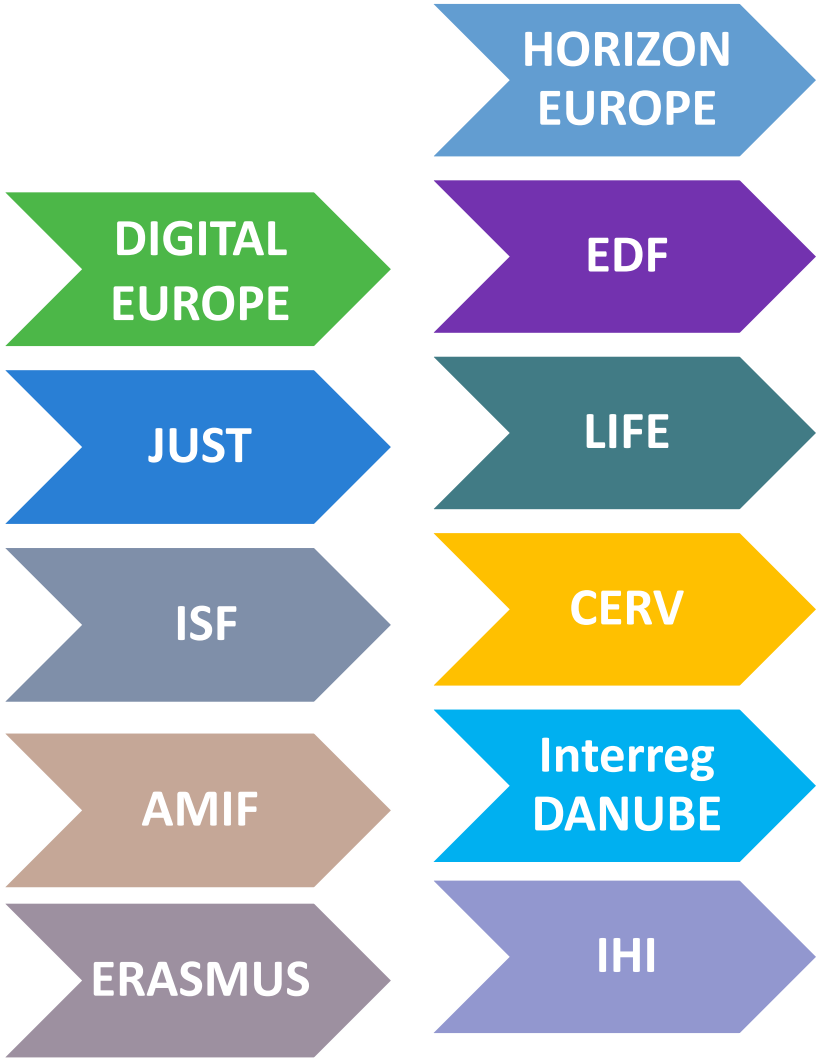
PALAEMON

newton

3D Pathology

beaconing

EU R&D Programs of interest



HORIZON EUROPE

- CL 1. Health
- CL 2. Culture, Creativity and Inclusive Society
- CL 3. Civil Security for Society
- CL 4. Digital, Industry and Space
- CL 5. Climate, Energy and Mobility
- CL 6. Food, Bioeconomy, Natural Resources, Agriculture and Environment

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European Affiliations

AIOTI
Alliance for Internet of Things Innovation

bridge HORIZON 2020

BDV BIG DATA VALUE ASSOCIATION

DUC

MSP MAGURELE SCIENCE PARK

CyberEPES Cluster

HL7 Europe

PATROMIL

Romanian Employers' Association of Military Equipment Manufacturers

Romanian Cluster PROECO - CBRNE

Thank you!

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