



R&D

Software Imagination & Vision

S I M A V I

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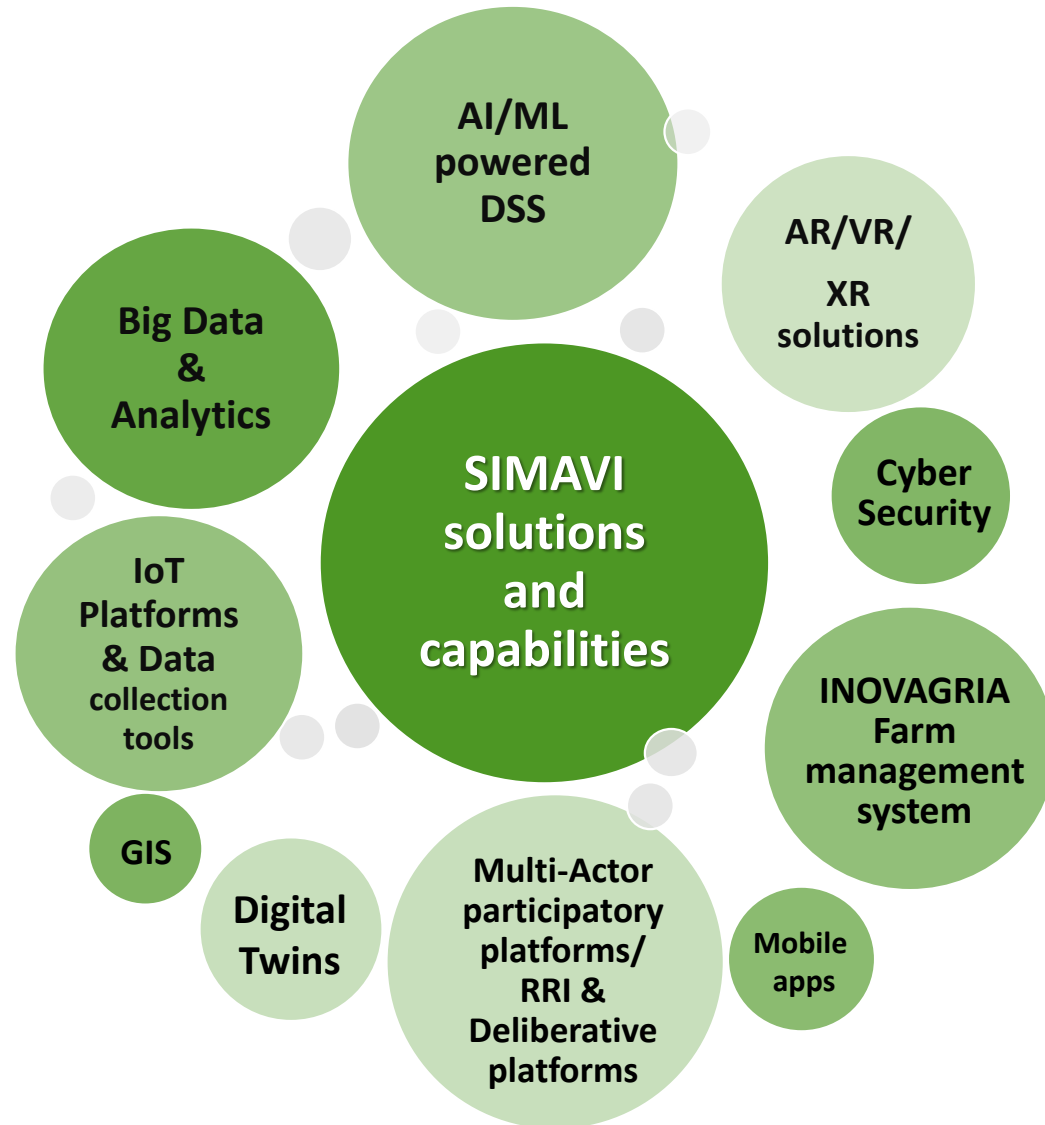
SIMAVI Business Card

+ 70**R&D projects
awarded****Horizon EUROPE
Horizon 2020****DEP EDF
ERASMUS+****ISF
ERA-Net****EUREKA
Eurostars**

**SIMAVI develops solutions for
various industries**

10 Projects Coordinated

Security**Environmental monitoring****eHealth****eGovernment****eLearning****eAgriculture****eTraining****Research & Development Projects****Enterprise Application Suite****Green Deal****Circular economy****Mobility & Smart cities****Energy****Industry 4.0****eCustoms****Customized Applications**



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



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:



ODYSSEUS
[Coordinator SIMAVI]



[Coordinator SIMAVI]



REDALERT

[Coordinator SIMAVI]



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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:



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.**

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**
- ✓ **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:



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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

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

Urban Safety and Management

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

REFERENCES:



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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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DEM₄PED



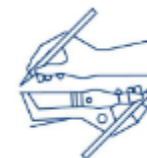
SOLUTIONS & EXPERIENCE

- ✓ **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
- ✓ **ICT Framework** for water ecosystems

REFERENCES:



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ITHACA
All To Enhance Civic Participation



ACAB



SOLUTIONS & EXPERIENCE

- ✓ **INOVAGRIA farm management system** created for managing the activity of agricultural, vegetable or animal farm
- ✓ **AI-based Decision Support Systems (DSS)** on crop management, pest control, and irrigation
- ✓ **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

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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:

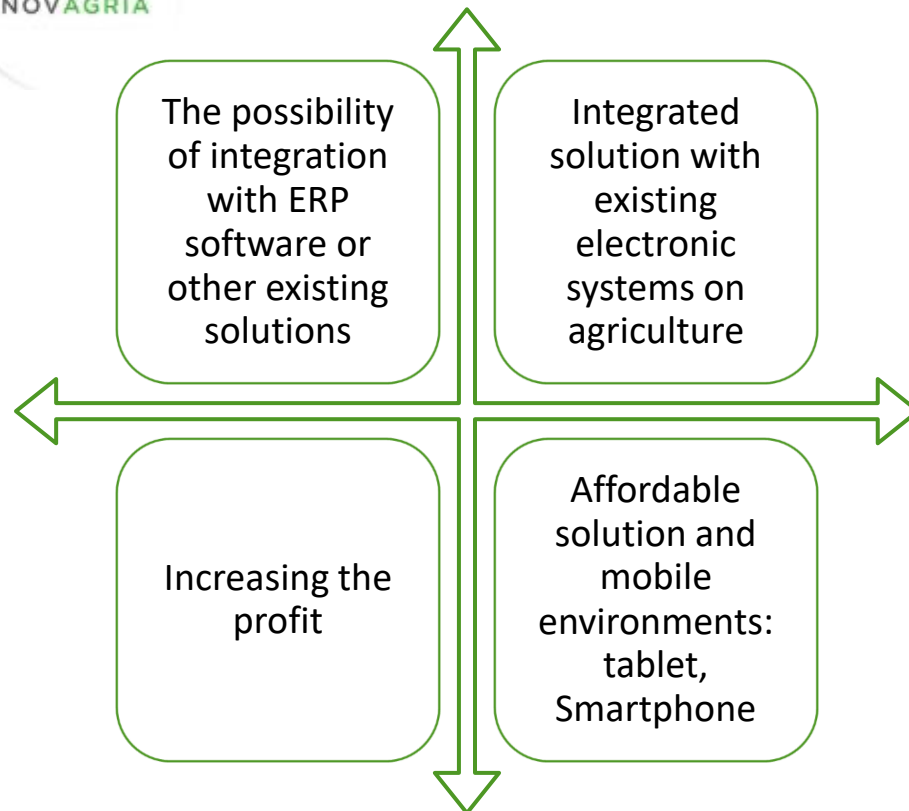
- **944 076** unique applications submitted for a yearly campaign
- **34,55** million agricultural physical blocks, for all schemes required
- **1,45** million farmers in the database
- **Over 13,4** billion EUR paid
- **Over 83** million operations performed in the APIA's information system

Organizational structure:

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



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



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

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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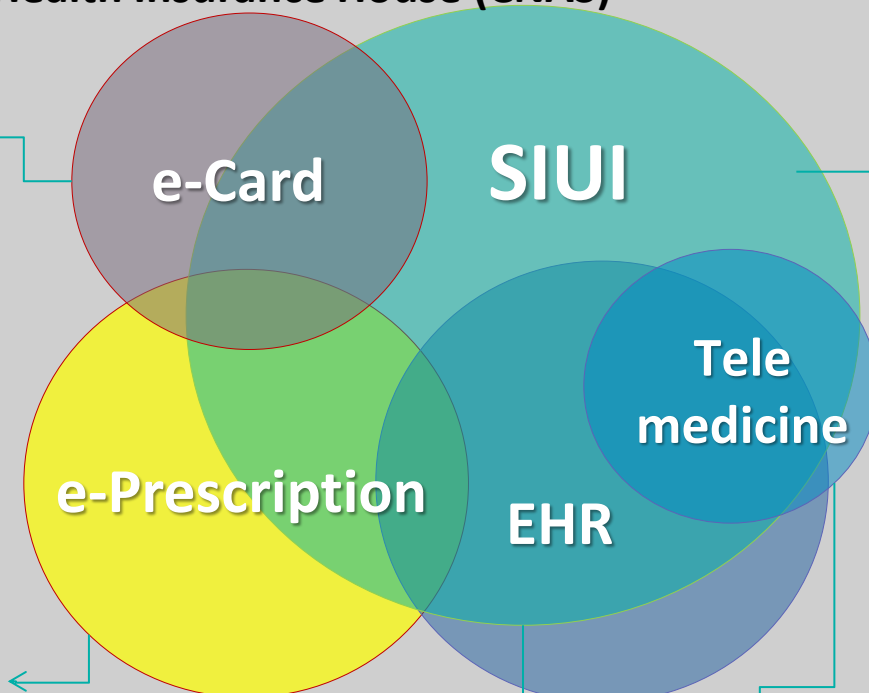
Integrated Health Information System in Romania – SIUI

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

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:



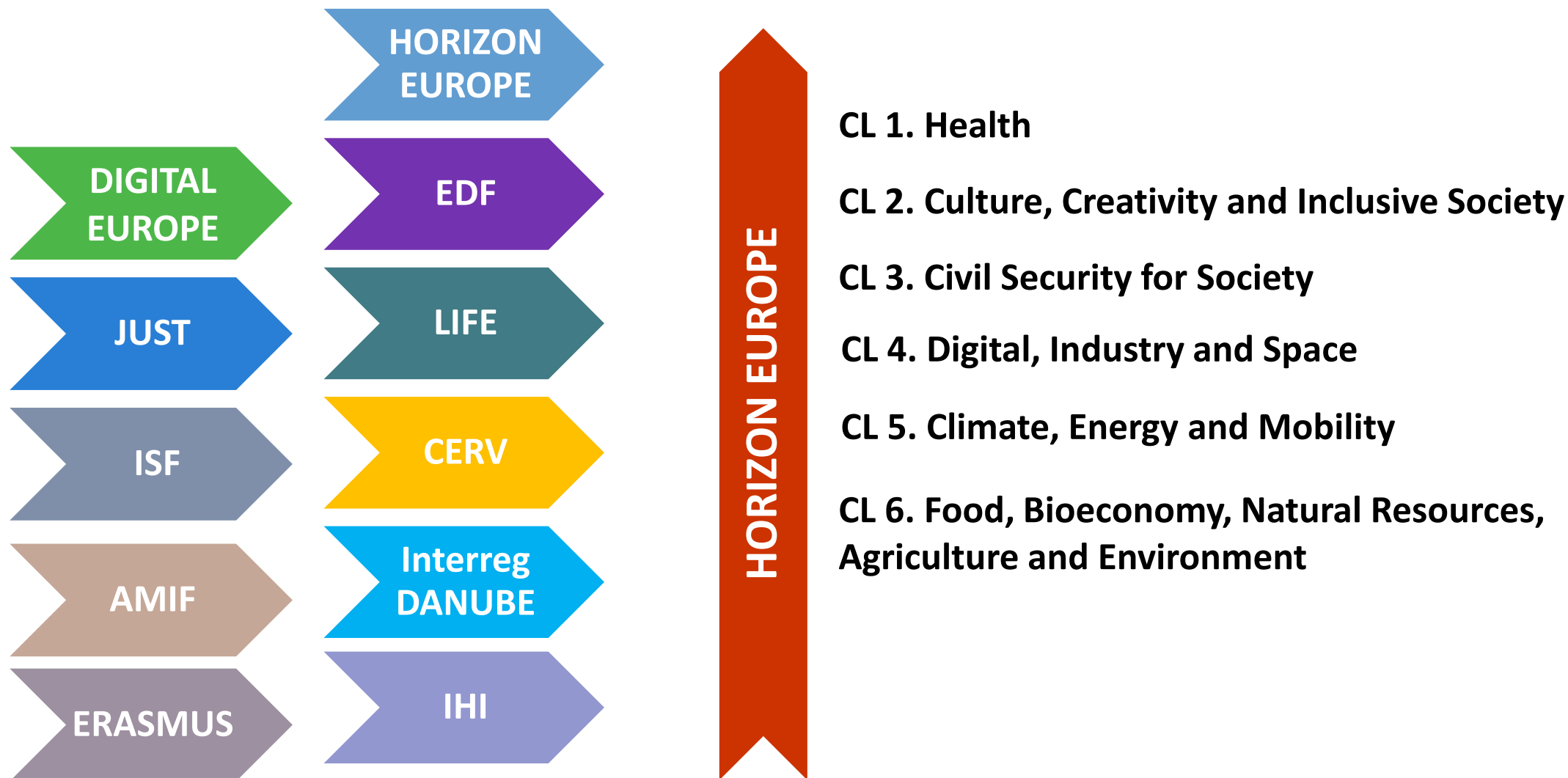
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EU R&D Programs of interest



European Affiliations



CyberEPES CLuster



Thank you!

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<https://www.simavi.ro/en/rd-projects>

