



E-RIHS

EUROPEAN RESEARCH INFRASTRUCTURE
FOR HERITAGE SCIENCE



ROADMAPPING DISTRIBUTED RESEARCH
INFRASTRUCTURES IN EUROPE

E-RIHS ERIC - a Polish Perspective

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Polish Node of E_RIHS

www.e-rihs.pl



Krakow, 9 June 2025



E-RIHS

EUROPEAN RESEARCH INFRASTRUCTURE
FOR HERITAGE SCIENCE

HERITAGE SCIENCE [HS] AN INTERDISCIPLINARY COMMUNITY

Drawing on diverse **humanities, sciences and engineering disciplines**, heritage science is an umbrella term encompassing all forms of scientific inquiry into human works and the combined works of nature and humans that are of value to people.

Heritage science focuses on enhancing the understanding, care, sustainable use and management of tangible and intangible heritage to enrich people's lives today and in the future.

©ICCROM

VISION

E-RIHS vision is to ensure that heritage remains **meaningful, relevant, and accessible** for the benefit of **present and future citizens**. E-RIHS uncovers the cultural and historical layers embedded in heritage, and harnesses its **potential as a source of socioeconomic and environmental sustainability**.

MISSION

To serve the heritage science community of both **scholars** and **practitioners** to answer complex **research** questions and to stimulate **innovation in heritage practices and interventions**. The ultimate goal is to **increase the impact of heritage science for the benefit of society**.





UNIVERSITIES

MUSEUMS

RESEARCH ORGANISATIONS

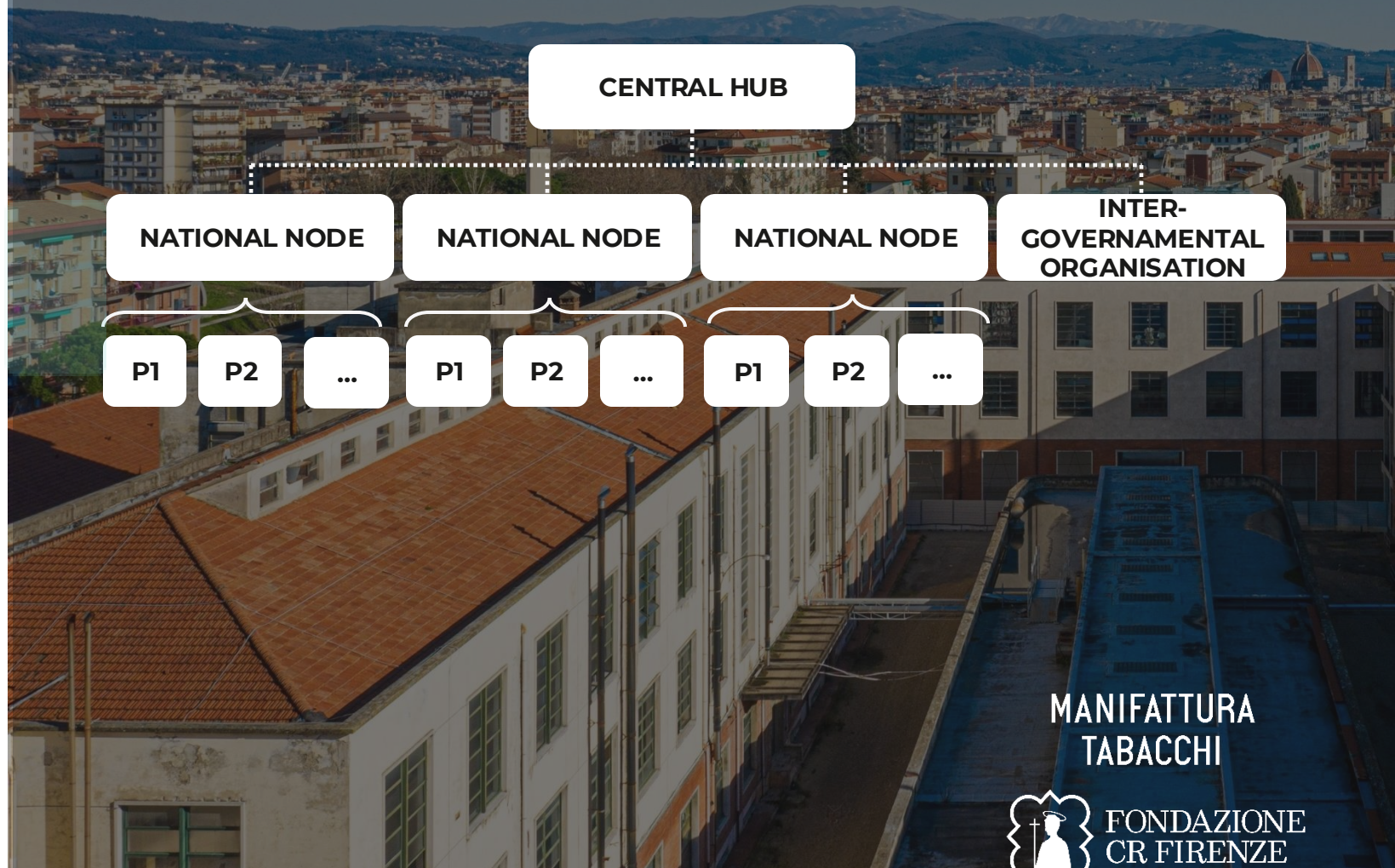
CULTURAL INSTITUTIONS

CONSERVATION CENTERS



E-RIHS
EUROPEAN RESEARCH INFRASTRUCTURE
FOR HERITAGE SCIENCE

**INTEGRATING WORLD-LEADING EU FACILITIES INTO
A UNIQUE ORGANISATION THAT PLAYS A COHESIVE
ROLE IN THE GLOBAL HERITAGE SCIENCE COMMUNITY**



**MANIFATTURA
TABACCHI**

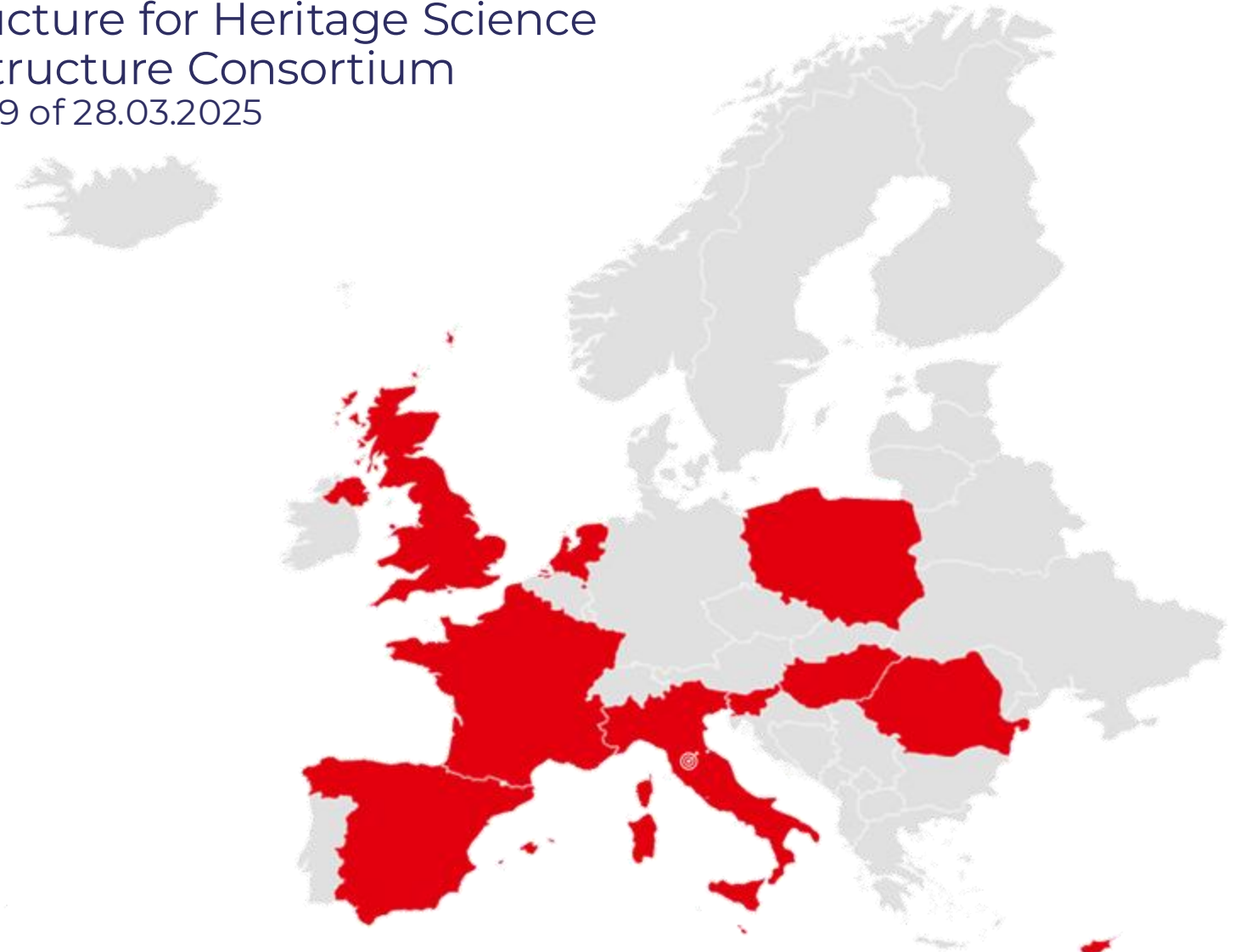


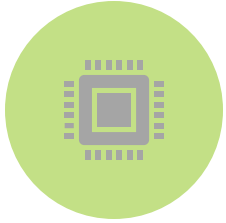
www.e-rihs.eu

European Research Infrastructure for Heritage Science
European Research Infrastructure Consortium
Executive decision of EC 2025/209 of 28.03.2025

MEMBERS

1. Italy (hosting)
2. Cyprus
3. France
4. Hungary
5. The Netherlands
6. Malta
7. Poland
8. Romania
9. Slovenia
10. Spain
11. United Kingdom
12. ICROM as permanent observer





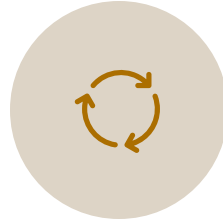
ACCESS

Physical and virtual access to laboratories, data, and collections



TRAINING

Interdisciplinary and cross-sectoral
#HSAcademy



R&D

Driven by a co-creation process



PROTOCOLS AND STANDARDS

Open science and FAIR principles.



INTERNATIONAL COOPERATION




IMPACT

Research, innovation, society

SCIENTIFIC IMPACT

 392 publications

 + 6.390 citations*


*Clarivate WOS, Dec 2024

ECONOMIC IMPACT

 Cultural tourism and local economies

 Cultural and creative industries

SOCIETAL IMPACT

 knowledge, conservation and enhancement

 innovation in museums and enhanced visitor experience

INTERSECTORAL COMMUNITY

- research institutions
- museums
- cultural institutions
- restoration centres
- CCIs

SOCIETY

Catalogue of Services (CoS)

Unique access point
<https://catalogue.e-rihs.eu/login>



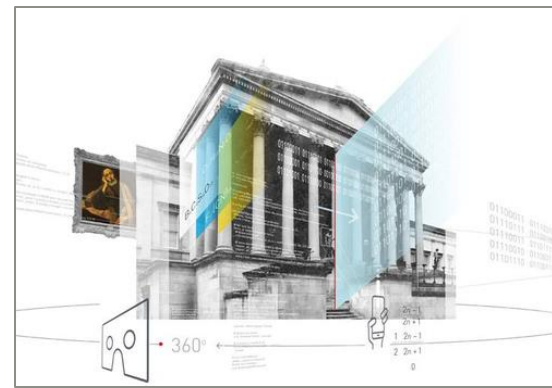
ARCHLAB



FIXLAB



MOLAB



DIGILAB

Access Policy

- Excellence-driven access
- Wide access mode
- Market-driven access mode
- Matchmaking services
- Thematic calls

Co-Creation

- Access
- R&D to enhance service offers

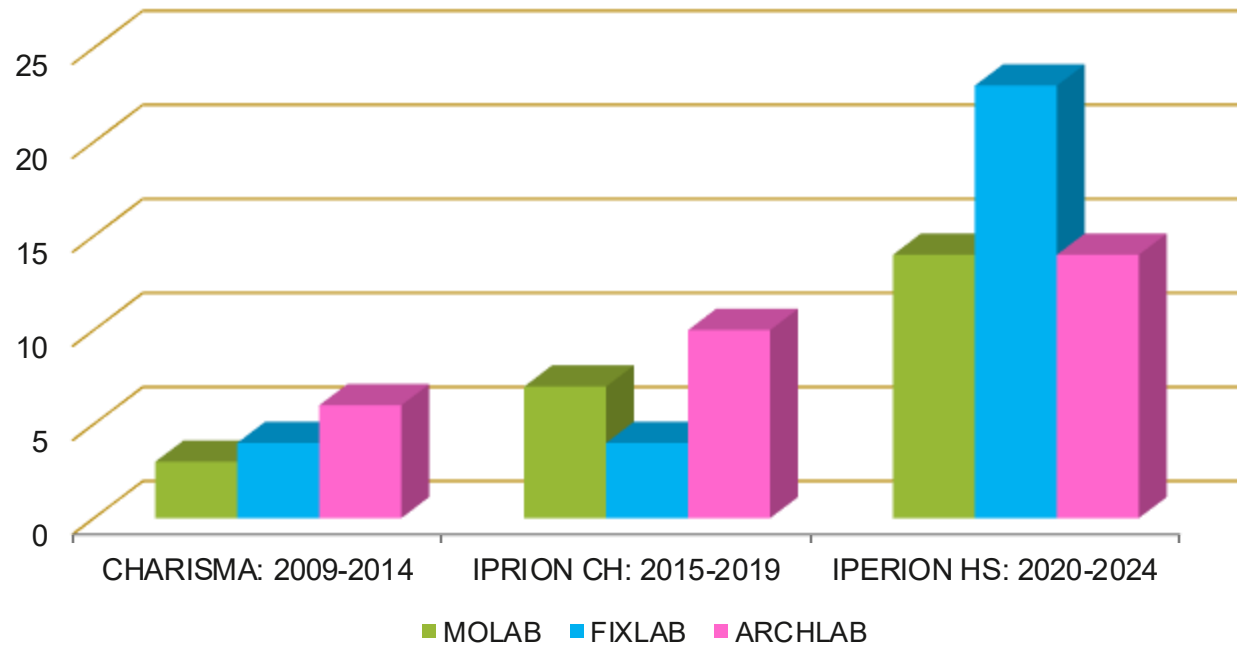
Cooperation

ECCCH (ECHOES)

SSHOC and EOSC

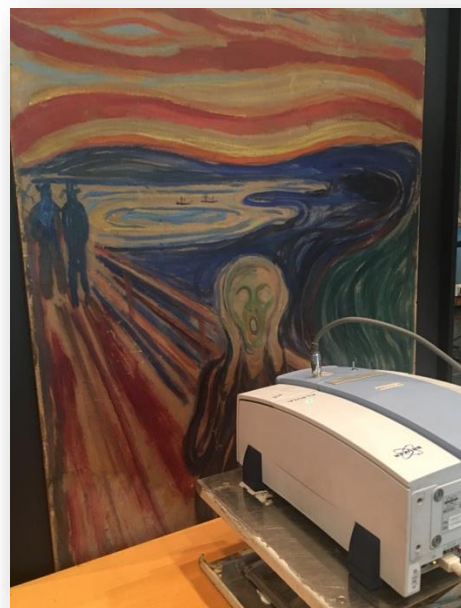
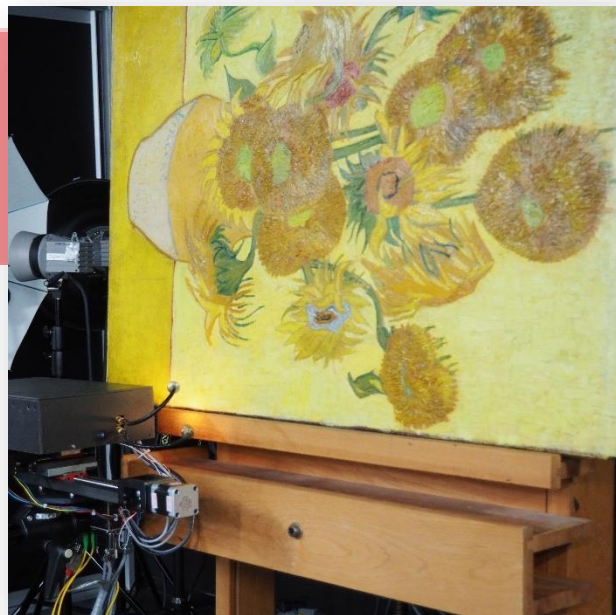
4CH, ARIADNE, DARIAH, CLARIN

Providers



IPERION HS European members





**20 YEARS
OF ACCESS**



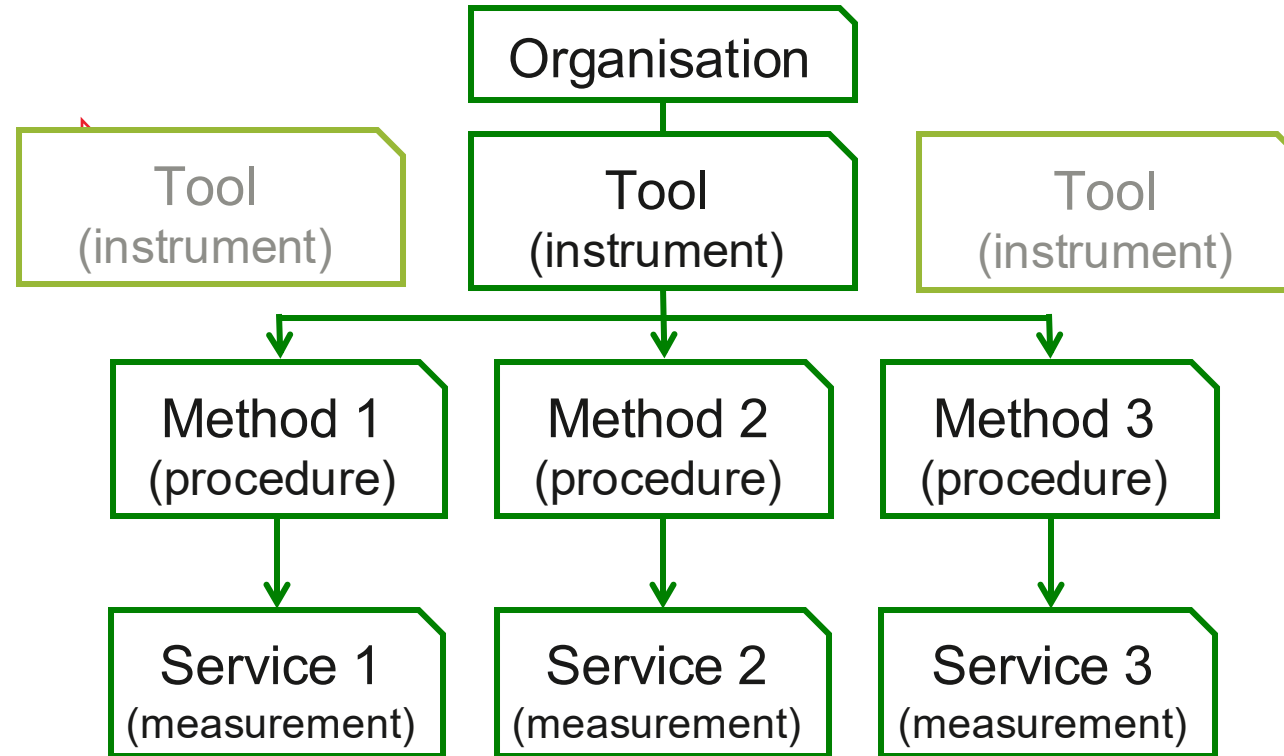


Catalogue of Services

Service Managers



Reviewers



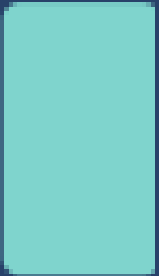
Users





Training activities to reach different audiences of current and future **providers** and **users**:

- **DOCTORAL SUMMER SCHOOLS**
- **ON-SITE TRAINING CAMPS**
- **ONLINE TRAINING MODULES**
- **ONLINE WEBINARS**
- **USERS' MEETINGS**



<https://www.youtube.com/@ERIHSEU>

18 lectures | 2.300 participants | 5.500 viewers



- Nicolaus Copernicus University in Toruń as a coordinator
- Academy of Fine Arts in Kraków
- AGH University of Science and Technology in Kraków – Historical Layers Research Centre
- Institute of Nuclear Chemistry and Technology in Warszawa
- Jerzy Haber Institute of Catalysis and Surface Chemistry of Polish Academy of Sciences in Kraków
- The Szewalski Institute of Fluid-Flow Machinery of the Polish Academy of Science in Gdańsk
- LANBOZ – The Laboratory of Analysis and Non-destructive Investigation of Heritage Objects, National Museum in Kraków
- National Centre for Nuclear Research
- Poznan Supercomputing and Networking Center (affiliated to the Institute of Bioorganic Chemistry PAS)
- Warsaw University of Technology
- Kraków University of Economics
- Jagiellonian University in Kraków
- University of Warsaw – Biological and Chemical Research Centre - Interdisciplinary Laboratory for Archeometric Research
- University of Wrocław

Legal form:
Consortium of partners

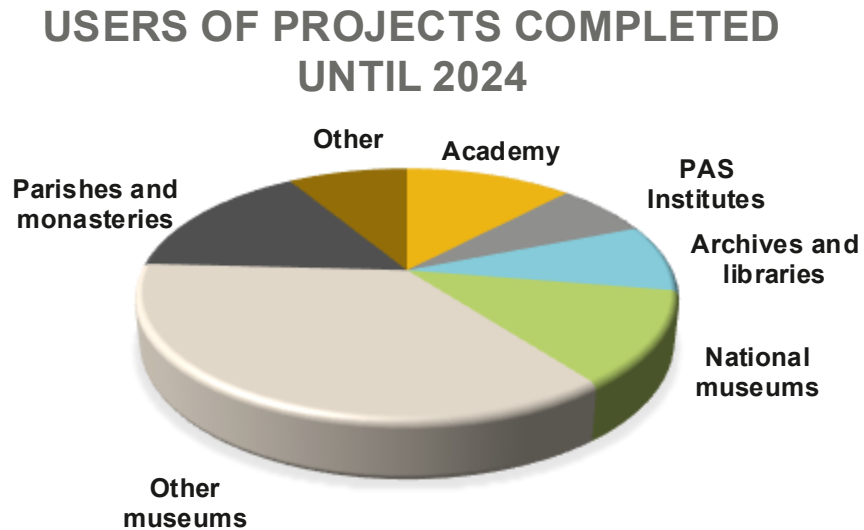


A bit of history

Established in 2015, since 2020 on the Polish Roadmap of Research Infrastructures.

Major activity: providing access to facilities

In the years 2015 – 2023, 81 projects were completed for 53 Users. At present, another 16 projects for 5 new Users are in progress.



3 active platforms:

- MOLAB_PL
- FIXLAB_PL
- DIGILAB_PL

Access granted via annual cal for projects

MOLAB_PL

- Acoustic emission
- X-ray fluorescence XRF (Artax 800, hand-held)
- Multispectral photography
- Digital Speckle Pattern Interferometry
- Complementary laser spectroscopy techniques for material analysis (micro-Raman, LIF, LIBS)
- Digital image correlation (DIC) method for field displacement and strain measurements
- Microfledometry
- Multispectral imaging
- Optical Coherence Tomography (OCT)
- Reflective infrared spectroscopy (FTIR)
- UV – VIS – spectrophotometry
- Laser cleaning system with monitoring by spectroscopic techniques
- Polynomial Texture Maps of (PTM)
- High-resolution IR reflectometry in 900 -1700 nm band
- High-resolution laser imaging using unmanned aerial vehicle (UAV)



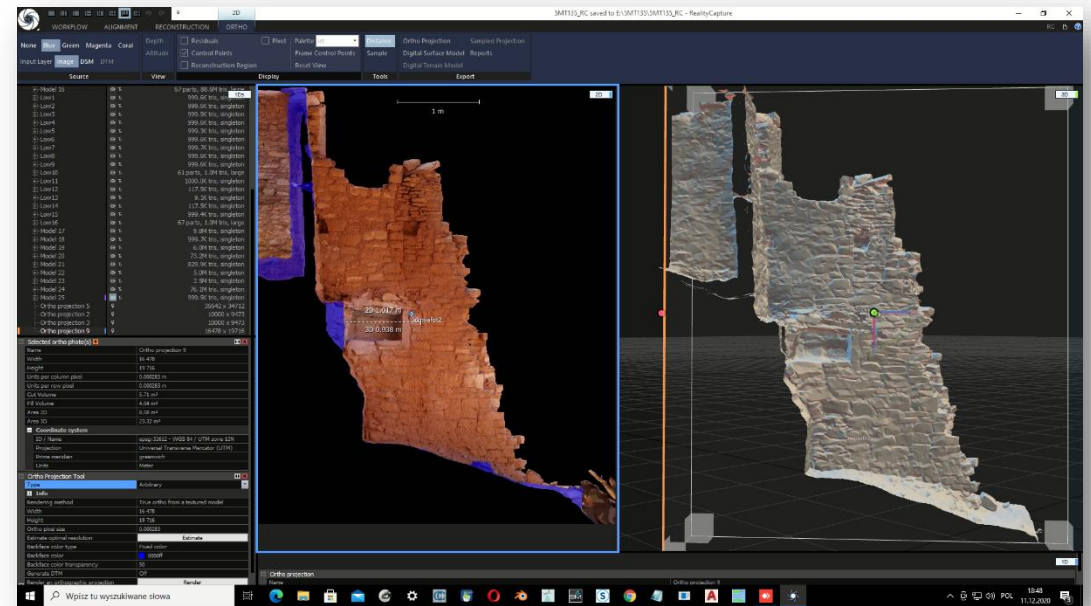
FIXLAB_PL

- Gas chromatography
- Decontamination with an electron beam
- Electronic Paramagnetic Resonance (EPR)
- Identification of the origin of skins and parchments
- Identification of microbiological hazards
- X-ray macrofluorescence – (MAXRF)
- Stereoscopic microscopy VIS
- UV microscopy
- Neutron Activation Analysis INAA
- Imaging of 3D geometry as well as angular and spectral characteristics of scattering and colour
- Radiation consolidation of CH artefacts
- X-Ray Powder Diffraction (XRPD)
- Digital X-ray radiography
- Scanning electron microscopy with energy-dispersive spectrometry SEM-EDS
- Laser Ablation with Inductively Coupled Plasma Mass Spectrometry LA-ICP-MS
- Inductively Coupled Plasma Mass Spectrometry ICP-MS
- FTIR spectroscopy
- Raman spectroscopy
- X-ray tomography
- High-performance liquid chromatography with LC-MS/MS mass spectrometry
- Automated 3D documentation system
- Examination of corrosion processes in metal objects



DIGILAB_PL

- HERie – a digital decision-supporting platform for quantitative assessment of risks to heritage assets
- Pilot digitisation of unusual or particularly valuable objects
- Preliminary analysis of the specificity of the institution's resources in terms of their digitization
- Area scanning of large objects



How it was organised

- All members of the consortium must declare 5 working days/year as an *in-kind* contribution – no extra financing
- Annual call for projects
- The provided service is free of expense for the applicant, but some restrictions apply:
 - FIXLAB: transport and insurance of the object to the research facility are on the side of the applicant
 - MOLAB: travel of the research team and the equipment should be covered by the applicant
- Who is entitled:
 - any public institution, non-profit foundation, church or religious association or non-governmental organization with its registered office in the Republic of Poland and being the owner or permanent disposer of the historic object to which the application relates.
 - It is also possible for the temporary disposer of the object to submit an application, provided that the applicant and the owner of the object are entities indicated above
- The application must not concern any activity included already in any separately financed or commercial projects (public aid restriction)



- Acceptance procedure:
 - Step 1. Feasibility check (available procedures, scope)
 - Step 2. Technical evaluation based on defined criteria:
 - a. The importance of the scientific goal: 8 p.
 - b. Proposed research programme: 8 p.
 - c. Expected influence of the project (possible publications, importance of the object to the national culture): 12 p.
 - d. declared contribution of the applicant's work or already obtained results important for achieving the scientific goal of the project: 6 p.
- Results are announced at the beginning of December, and projects must be completed by the end of the following year
- Intellectual Property rights & Copyrights:
 - The resultant report and data obtained are considered as intellectual contributions of the authors, protected by copyrights
 - Most desired: common publication, if one party plans to publish, it must offer co-authorship to the other
 - Copyright property rights to the whole report are with the authors.

The other activities

- Annual workshop (in September) oriented at presentation of less popular or new techniques in the offer of the Consortium
- Co-organisation of the annual (in December) conference „Analytical chemistry in protection of the cultural heritage”:
 - Presentation of the results of the most interesting projects
 - Announcement of the results of the last call for projects
 - Information on the rules of access: national and international



E-RIHS.pl versus E-RIHS ERIC

			
Activity	Action	Action	Activity
	Contribute	Select providers Organise access	Excellence-driven access
Matchmaking services	Organise access Report to ERIC		
Market-driven access	<i>Rules to be established</i>	<i>Rules to be established</i>	
	Contribute with data/soft to	Organise access	Wide access to data
Training national	Contribute to international Organise national	Organise international Contribute to national	Training
R&D national	Contribute to international Organise national	Organise international	R&D
	Contribute	Organise	Protocols and standards



- ❖ All activities with E-RIHS ERIC „label”
- ❖ Larger offer from Consortium members for excellence-driven access (at present: 2 tools)
- ❖ National offer: from general „in-kind” to a matchmaking service:
 - Two modalities:
 - Peer to peer (new)
 - Call for projects (as before, but financed now)
 - No research-oriented projects → excellence-driven access
 - Practically-oriented projects
 - Limited in scope
 - Data available via DIGILAB
- ❖ More common research
- ❖ HERIe platform offered for wide access
- ❖ Training school with ERIHS experts (planned)



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THANK YOU

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Services offered – IPERION HS

- 1) Matchmaking service is an official activity of E-RIHS ERIC and will be included in Service Level Agreements with interested Nodes
- 2) Details of the organisation of the Matchmaking service are left with the Node provided that the following rules are complied with:
 - a) Service is possible only between Providers and Users from the same country, following the rules established by the relevant Node
 - b) The rules of access, established by the Node, must be clearly announced to the community of Users
 - c) Two modalities of the Matchmaking service are recommended:
 - i) peer to peer: User and Provider establish a connection directly and prepare a common project sent to the National Node Coordinator for information only,
 - ii) a competition of projects submitted by Users to the National Node Coordinator. These projects do not have to specify either the desired method or the Provider.
 - d) Projects must be short, routine, or exploratory, e.g. for conservation /restoration purposes, diagnostic, routine monitoring, etc.
 - e) Projects must be limited in scope (e.g., a few days, a limited number of samples, a small corpus of objects, etc.), in size of the user group, and in requested facilities or resources.
 - f) Authors of high-quality research proposals will be encouraged to apply for excellence-driven access by their National Nodes.
 - g) Authors of excellence-driven access proposals that were not selected by E-RIHS ERIC will be informed of matchmaking services opportunities by the E-RIHS Help Desk – in compliance with point a).
 - h) The resultant reports will bear the "E-RIHS label" as well as the "National E-RIHS label".
 - i) The outcome of the satisfaction survey, an English summary of the project, and the selected KPIs will be delivered to the Central Hub.
 - j) Data will be opened within DIGILAB in compliance with the E-RIHS Data Policy.
 - k) Matchmaking services could be financed only from the national resources and are not eligible for E-RIHS ERIC travel and accommodation grants (for FIXLAB users).
 - l) All excellence-driven providers are eligible to provide matchmaking services.