



Poland in European and Global Research Infrastructures

Conference of Polish representatives in European and Global research infrastructures

January 16, 2025, Warsaw, Poland



**SCIENCE
IN POLAND**



SGH

Warsaw School
of Economics



Funded by
the European Union



Ministry of Science and Higher Education
Republic of Poland

„Tour de table”

Presentation of Research Infrastructures

SOCIAL SCIENCES AND HUMANITIES

SGH

Warsaw School
of Economics



Funded by
the European Union



Ministry of Science and Higher Education
Republic of Poland

Families and Generations Lab

Międzykolegialne Centrum Badań nad Rodzinami i Generacjami

Families and Generations Lab

Międzykolegialne Centrum Badań nad Rodzinami i Generacjami

- Established to coordinate and foster the scientific activities of SGH related to studies on family and generational transformations, and on their role in shaping human capital
- Focus on collaboration with European Research Infrastructures



SHARE-ERIC

Agnieszka Chłoń-Domińczak



SGH



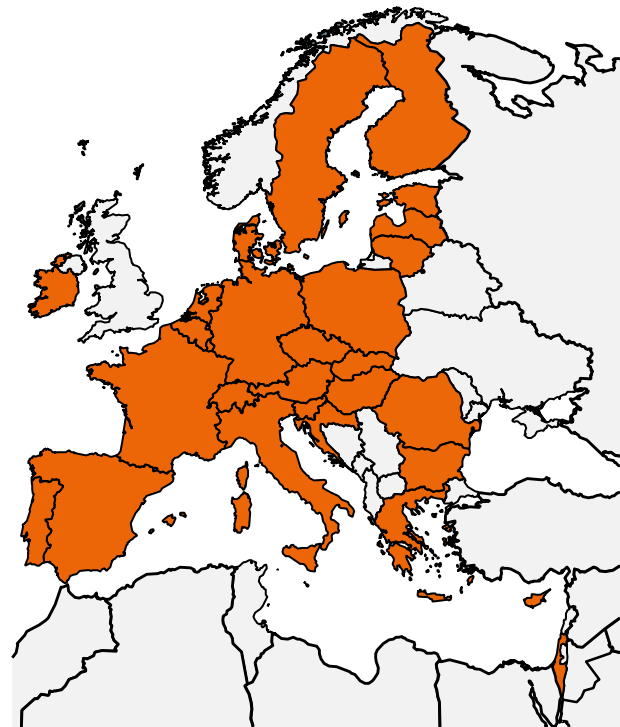
Ministry of Science and Higher Education
Republic of Poland

Survey of Health, Ageing and Retirement in Europe

Agnieszka Chłoń-Domińczak

SHARE in a nutshell

- SHARE – the **S**urvey of **H**ealth, **A**geing and **R**etirement in **E**urope – is a research infrastructure for studying the effects of *health, social, economic and environmental* policies over the life-course of European citizens and beyond
- SHARE is a **unique observatory** for policy effects over the life course
 - ✓ In response to mega-trends, in particular population ageing
 - ✓ For people's reactions to policies and events like reforms and crises
- SHARE aims to **improve people's quality of life** with:
 - ✓ High-quality research on their health and socioeconomic living situations
 - ✓ Contributing with evidence to making policy reforms more targeted to the needs of people and societies
- SHARE is the **first ERIC**, established in 2011
- With other social surveys: GGP and GUIDE the entire lifecourse is covered
- ✓ **Free data access for researchers:** <http://www.share-eric.eu>



SHARE – Quick facts



SHARE in Poland

- Poland joined SHARE in 2006, from 2018 the survey is coordinated by SGH Warsaw School of Economics
- From 2020 SHARE is a part of the Polish Research Infrastructure for Life Course Studies on Families, Generations, and Human Capital (PRILS-FGH) on the Polish Roadmap for Research Infrastructures, as one of 6 infrastructures in SSH
- SHARE users in Poland: 446 people, of which:
 - 389 representing HEIs,
 - 25 from other research institutions,
 - 27 from institutions involved in public policy making

GGP & GUIDE

Monika Mynarska



SGH
Szkoła Główna
Handlowa
w Warszawie



Ministry of Science and Higher Education
Republic of Poland

Generations and Gender Programme

Monika Mynarska

GGP: A Social Science Infrastructure for Research on Population and Family Dynamics



- Provides data about **families and life course trajectories of individuals** to enable research on current societal and public policy challenges
- Key element: **Generations and Gender Survey** – longitudinal survey, conducted across 20+ countries, on large, nationally representative samples
- **Topics covered:** romantic relations, gender roles, work and family life, inter-generational relations, health, well-being, living conditions, attitudes, family planning...

- Launched in **2000** by the Population Unit of the United Nations Economic Commission for Europe (**UNECE**)
- Currently coordinated by the **Netherlands Interdisciplinary Demographic Institute** (NIDI)
- On the **ESFRI Roadmap since 2020** – currently in the process of preparing an application to become **ERIC**
- Consortium of 11 full members (including **Warsaw School of Economics**) and 3 observers
- **GGP-PL**: On the **Polish Roadmap** since 2020
- Ministerial funding for 2024-2028. **Survey data collection** (three waves, nationally representative sample of men and women aged 18-59), **dissemination** and promotion of data, activities to **support data use**





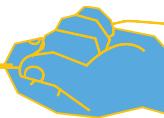
SGH UKSW

- **Families and Generations Lab, SGH**
 - **Institute of Psychology, UKSW**

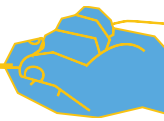
Plan:

To establish Europe's first **comparative birth cohort study to track children's personal wellbeing and psychosocial development**, in combination with key indicators of children's homes, neighbourhoods, and schools

- Will follow **two birth cohorts (born 2019 and 2029)** until they are 24-year-old (survey of parents / children – every 2-3 years)
- Planned starting date: **2027**



- On the **ESFRI Roadmap since 2020** – currently in the process of preparing an application to become ERIC
- **Coordinators:**
University College Dublin, Ireland
Manchester Metropolitan University, UK
- SGH & UKSW have just signed the **Memorandum of Understanding** (joining other 24 institutions from 19 countries)



European Social Survey ERIC

Michał Kotnarowski

European Social Survey European Research Infrastructure Consortium

Michał Kotnarowski, PhD
ESS National Coordinator for Poland

europeansocialsurvey.org

ESS is a European Research Infrastructure Consortium (ESS ERIC)



European Social Survey: Overview

20

- **Academic cross-national survey**
Measuring public attitudes and behaviour
- **11 rounds completed**
Every two years since 2002/03 -
in 39 participating countries
- **Face-to-face interviews only R1-9**
The questionnaire lasts one-hour and
has been translated into 50 languages
- **Self-completion methods in R10**
Due to the pandemic, national teams could
implement self-completion methods in Round
10 for the first time
- **Over 500,000 interviews completed**
Data collection by range of providers
- **All data free for non-commercial use**
Available to download from the ESS Data
Portal in a range of file formats for statistical
software programmes
- **Round 11 data now available**
The initial Round 11 dataset includes 13
countries where fieldwork was conducted in
2023/24
- **Over 240,000 registered users**
More than 65% students; 20,000+ active
downloaders/year
- **6,585 academic publications**
Journal articles, books, working and conference
papers that analysed our data have been
published (2003-22)

European Social Survey: History

21

- **First funded in 2001**

Funded by the European Commission, following preparatory work by Roger Jowell and Max Kaase at the European Science Foundation (ESF)

- **Descartes Prize (2005)**

Became the first social science project to win the European Union prize

- **ESFRI Roadmap > Landmark**

Named on Roadmap (2006, 2008, 2010) and as Landmark (2016, 2018, 2021)

- **Became European Research Infrastructure Consortium (2013)**

Currently the highest number of members (28) of any ERIC

- **Lijphart/Przeworski/Verba (LPV) Dataset Award (2020)**

Awarded LPV by the Comparative Politics Section of the American Political Science Association (APSA)

- **Kohli Foundation Prize (2024)**

Won the Infrastructure Prize for Sociology

“When considering new policies, governments in the past were often ignorant of their citizens’ preferences and needs. Now European governments have a source for counteracting that ignorance.”

Professor Sir Roger Jowell CBE

Co-founder of the ESS

Round 11 (2023/24)

- 31 participating countries
- Data being collected using face-to-face methods in almost all countries (30)
- Self-completion data collection in CZ
- First data release:
June 2024 (13 countries)
- Second data release:
November 2024 (24 countries)
- Post-stratification weights for all countries available with second release
- Third data release:
Early 2025 (31 countries)





Contact

 kotnarowski@ifispan.edu.pl

 europeansocialsurvey.org

 [EuropeanSocialSurvey](https://www.facebook.com/EuropeanSocialSurvey)

 [European-Social-Survey](https://www.linkedin.com/company/European-Social-Survey)

 [ESS_Survey](https://twitter.com/ESS_Survey)

 [EuropeanSocialSurveyERIC](https://www.youtube.com/EuropeanSocialSurveyERIC)



CESSDA ERIC

Maciej Melon, Wojciech Fenrich, Jakub Szprot

CLARIN ERIC

Maciej Piasecki

CLARIN - An Open Language Technology Research Infrastructure for SS&H

Maciej Piasecki

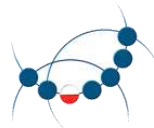
CLARIN-PL

Wrocław University of Science and Technology

CLARIN ERIC



CLARIN-PL
Common Language Resources and Technology Infrastructure



Wrocław University
of Science and Technology

CLARIN in countries and centres


Research Infrastructure CLARIN (= Common Language Resources and Technology Infrastructure)

A consortium of type ERIC (since 2012) - **Social Sciences and Humanities Cluster**

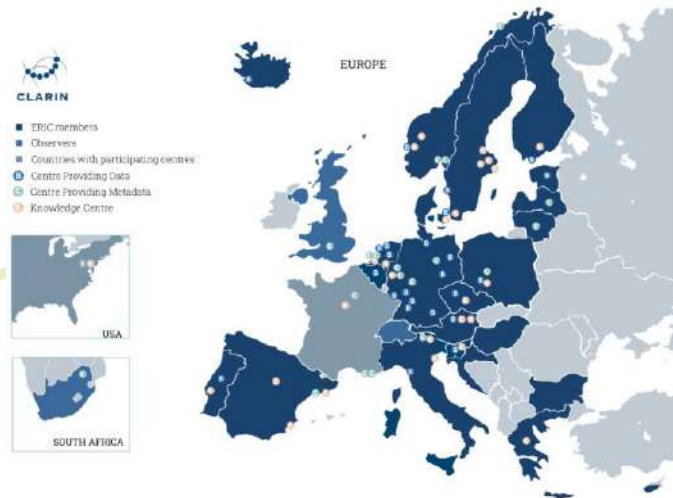
- 24 member countries
- 2 observers
- 1 linked party

A distributed network of 48 centres

21 CTS certified data centres,
strong focus on FAIRness & interoperability

- federated login: 
- central metadata harvesting for easy discovery: 
- chained services: 
- language data - in written, spoken, video or multimodal form
- advanced tools - to discover, explore, exploit, annotate, analyse or combine data sets, *wherever they are located*

Member of EOSC-Association  **eOSC** (since 2020) and **SSHOpenCluster**



CLARIN Poland: CLARIN-PL

(since 2006, in ERIC since 2012)



CLARIN-PL Language Technology Centre (<http://clarin-pl.eu>)

- language data repository
<https://services.clarin-pl.eu>
- language resources for Polish and other languages
- services and applications for text and speech analysis
- private cloud space for data and task results



- **PolLinguaTec** – Knowledge Centre for Language Technology for the Polish Language

<http://kcentre.clarin-pl.eu/>

- **LLMs4SSH** (distributed, 14 partners from 14 countries) – CLARIN K-centre for Large Language Models in SS&H

<https://llms4ssh.clarin-pl.eu/>



CLARIN-PL – open support for researchers and beyond

- **Open science (FAIR):**
 - language resources and data, software and applications
 - knowledge and direct support
 - **no fees** – sponsored by **Ministry of Education and Science** (thank you!)
- **Language resources:**
 - corpora: of Polish and multilingual, richly annotated
 - lexical data bases: morphological, grammatical, semantic – among the largest in the world, e.g. plWordNet connected to Linked Open Data
- **Basic language tools**
 - morphological analysis, grammatical, Information Extraction.
- **Research applications and Data Platform**
 - development and analysis of corpora, statistical analysis, stylometry, sentiment and emotions, semantic analysis
- **Large Language Models (LLMs)** especially **PLLuM** (<https://pllum.org.pl>)
- **Direct support for researchers:**
 - teams, projects and individual researchers and students
 - from an idea, via problem definition, tasks, Data Management Plans, project application till support in conducting research

CLARIN-PL (via Federated Login)

<https://services.clarin-pl.eu>

The screenshot displays the CLARIN-PL Dashboard. The top navigation bar includes links for 'Contact', 'English' (with a flag icon), a user profile for 'Maciej Piasecki', and a 'Sign out' button. The left sidebar contains the following navigation items: 'Dashboard' (selected), 'Task List', 'Services', 'My Files', 'My Corpora', and 'Open Resources'. The main dashboard area is titled 'Dashboard' and provides a 'Quick glance at all of your important information and statistics'. It features three summary cards: 'Completed' with a count of 10, 'In-Progress' with a count of 0, and 'Error' with a count of 0. Each card includes a 'View All' link and a list of task names with their completion dates. The 'Completed' card lists three tasks: 'postagger_interactiveMode_20.9.2023/16:18...', 'multiemo_interactiveMode_20.9.2023/12:25...', and 'anonymizer_interactiveMode_20.9.2023/12:2...'. The 'In-Progress' card shows 'No in-progress tasks'. The 'Error' card shows 'No Recent Errors'.

CLARIN-PL

Dashboard

Task List

Services

My Files

My Corpora

Open Resources

Contact English Maciej Piasecki Sign out

Dashboard

Quick glance at all of your important information and statistics

Completed 10

View All

postagger_interactiveMode_20.9.2023/16:18... view results

multiemo_interactiveMode_20.9.2023/12:25... view results

anonymizer_interactiveMode_20.9.2023/12:2... view results

In-Progress 0

View All

No in-progress tasks

Error 0

View All

No Recent Errors

CLARIN-PL Consortium for Open Polish LT

- Developers (consortium) – institutions supporting Open Science in Language Technology (at 2006):
 - Department of Artificial Intelligence, **Wrocław University of Science and Technology (leader)**
 - Institute of Computer Science PAS
 - Institute of Slavistics, PAS
 - Polish-Japanese Academy of Information Technology
 - University of Łódź
 - University of Wrocław
- Beneficiaries:
 - **All** research units and **Researchers** in Poland, especially from the area of Social Sciences and Humanities
 - also **Artificial Intelligence** in broad sence
(due to the CLARIN-PL-Biz project: www.clarin.biz)

Thank you for your attention!

Learn more about CLARIN at:

www.clarin.eu

clarin-pl.eu

or

clarin-pl@pwr.edu.pl

maciej.piasecki@pwr.edu.pl

CLARIN-PL
Common Language Resources and Technology Infrastructure



<http://clarin-pl.eu/>

<http://clarin.biz>

<http://clarin.eu/>



DARIAH ERIC

Tomasz Parkoła



Rzeczpospolita
Polska

Sfinansowane przez
Unię Europejską
NextGenerationEU



61-139 Poznań
ul. Jana Pawła II 10
phone: (+48 61) 858-20-01
fax: (+48 61) 852-59-54
office@man.poznan.pl
www.psnk.pl

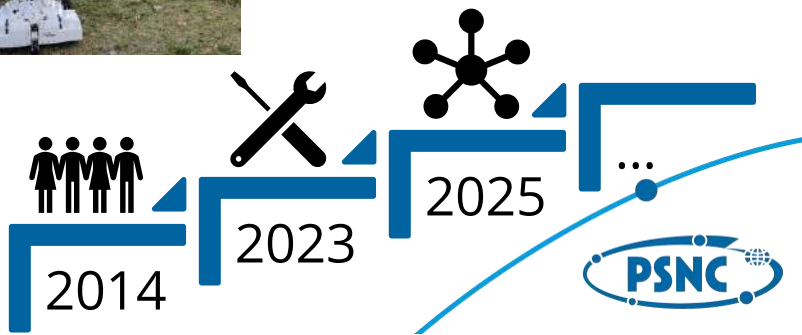
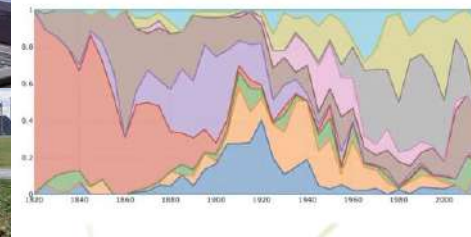
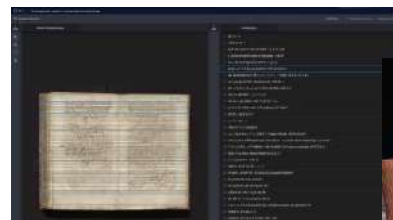
DARIAH-PL (Digital Research Infrastructure for the Arts and Humanities - Poland)

Tomasz Parkoła, PSNC

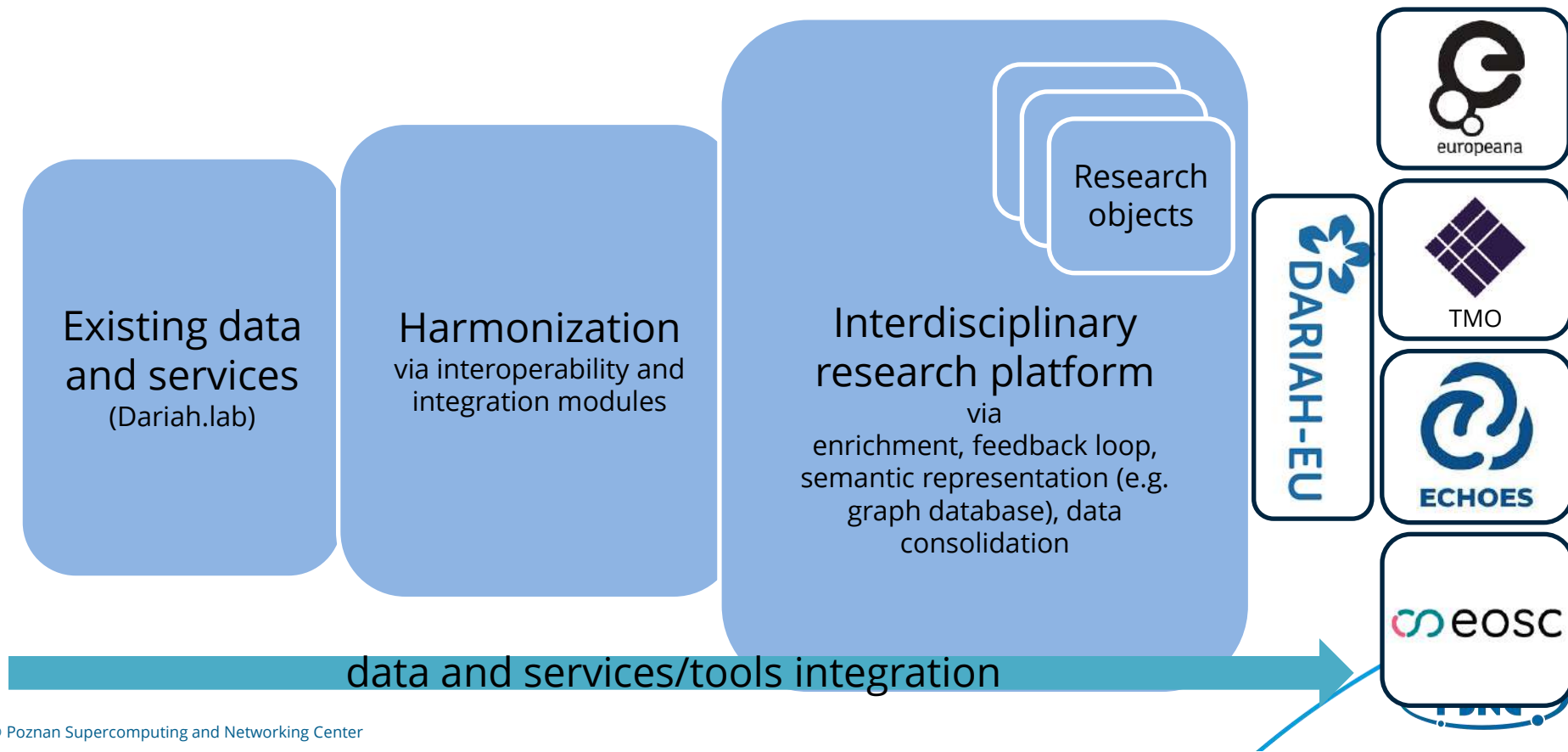


Background

- Polish consortium of 18 institutions that supports art and humanities research on national and international levels
- Dariah.hub is another step towards DARIAH-PL infra based on
 - Initiation of DARIAH-PL consortium in 2014
 - Distributed Dariah.lab infrastructure delivered in 2023



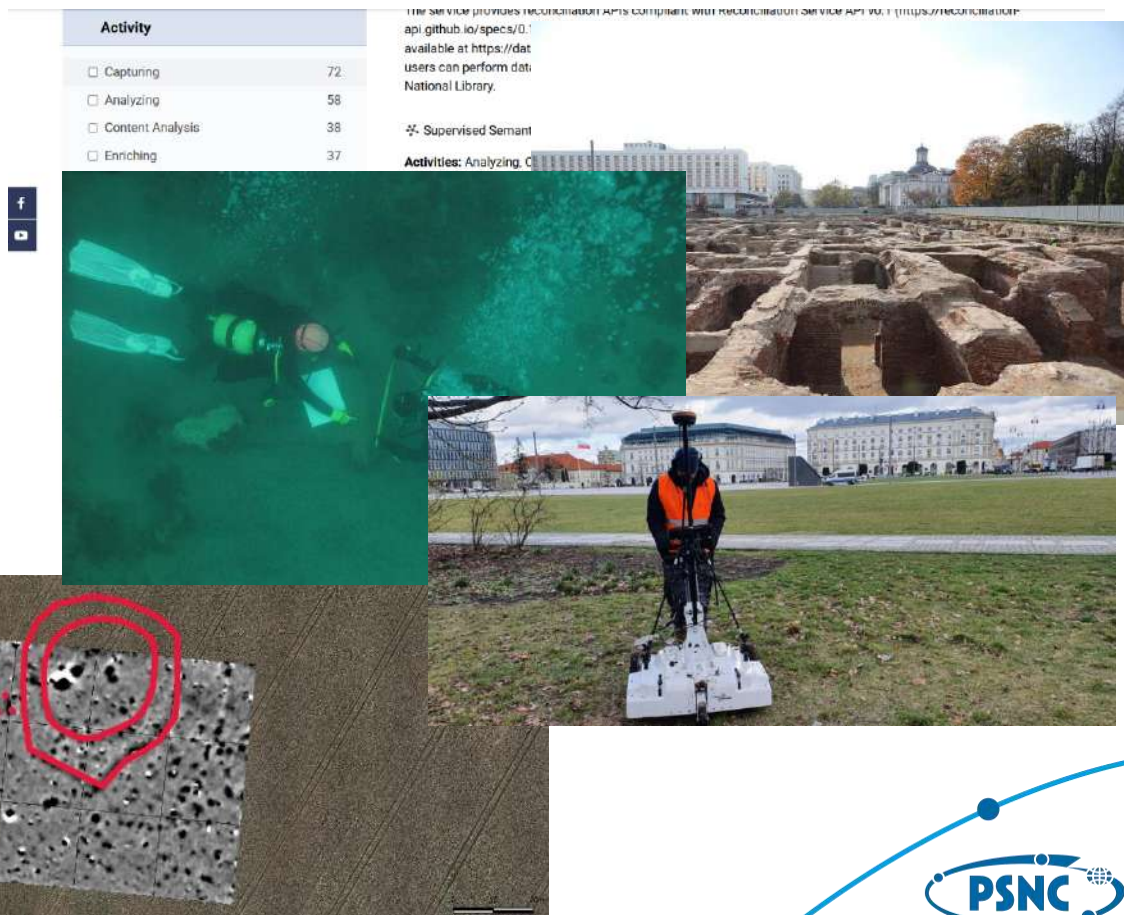
High level (data/work)flow



Online catalogue of resources

Numbers:

- 70+ services
- 15 software components
- 29 datasets
- and also training materials



The screenshot displays the DARIAH-PL online catalogue interface. It features a table with the following activities and counts:

Activity	Count
<input type="checkbox"/> Capturing	72
<input type="checkbox"/> Analyzing	58
<input type="checkbox"/> Content Analysis	38
<input type="checkbox"/> Enriching	37

Below the table, there are social media icons for Facebook and YouTube. To the right of the table, there is a text box containing the following information:

The service provides a REST API compatible with the OpenAPI specification. The API is available at <https://dat.ghub.io/specs/0.1>. Users can perform data analysis using the National Library.

Activities: Analyzing, Content Analysis, Enriching, Capturing

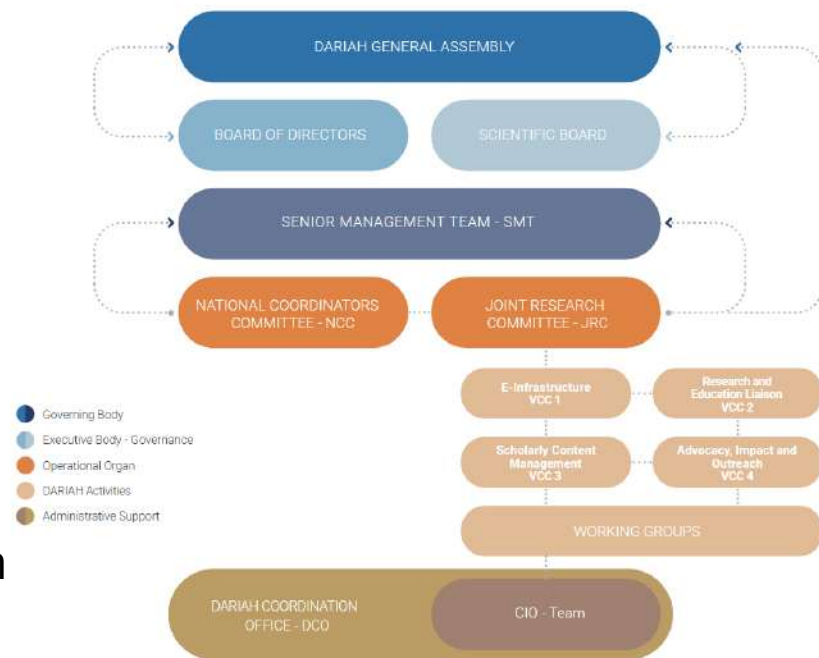
The interface also displays a grid of images related to digital heritage. The images include:

- An underwater scene with a diver and a large, ancient stone structure.
- Aerial view of a large, ancient stone structure, possibly a Roman bathhouse.
- A person in a high-visibility vest operating a surveying instrument on a grassy field.
- An aerial view of a large, ancient stone structure, possibly a Roman bathhouse, with a red circle highlighting a specific area.

DARIAH-PL in the broader context

DARIAH ERIC, ECCCH, DS4CH, EOSC, ...

- Engagement in DARIAH EU working groups (including leadership)
- Management bodies, i.e. two members in the Joint Research Committee
- DARIAH-PL catalogue of resources integrated into the SSH Open Marketplace (SSH part of EOSC), upcoming ECCCH and DS4CH integration
- Active participation in developments of European-level services (R&D&I projects, contracts)





Poznan Supercomputing and Networking Center

Tomasz Parkoła
tparkola@man.poznan.pl



EHRI ERIC

Zuzanna Schnepf-Kołacz, Zofia Trębacz, Adam
Sitarek

European Holocaust
Research Infrastructure-
European Research
Infrastructure
Consortium (EHRI-ERIC)

Zofia Trębacz,
The Emanuel Ringelblum Jewish
Historical Institute

Ministry of Culture and National Heritage
Republic of Poland



Representing entity

Ministry of Culture and National
Heritage

Coordinating institution – National Coordinator

The Emanuel Ringelblum Jewish
Historical Institute in Warsaw

Partner institutions

Polish Center for Holocaust
Research IFiS PAN

Filip Friedman Center for Jewish
Studies at University of Łódź

Zofia Trębacz, The Emanuel Ringelblum
Jewish Historical Institute

**The EHRI Polish National Node
helps with Holocaust research
and supports EHRI's goals by:**

**providing international access
to Holocaust-related archives
and adding collections from
institutions to the EHRI portal.**

**sharing research data and
findings by Polish scholars
through EHRI's online services.**

Zofia Trębacz, The Emanuel Ringelblum
Jewish Historical Institute

OPERAS ERIC

Magdalena Wnuk, Maciej Maryl, Tomasz Umerle



CENTRUM
HUMANISTYKI
CYFROWEJ

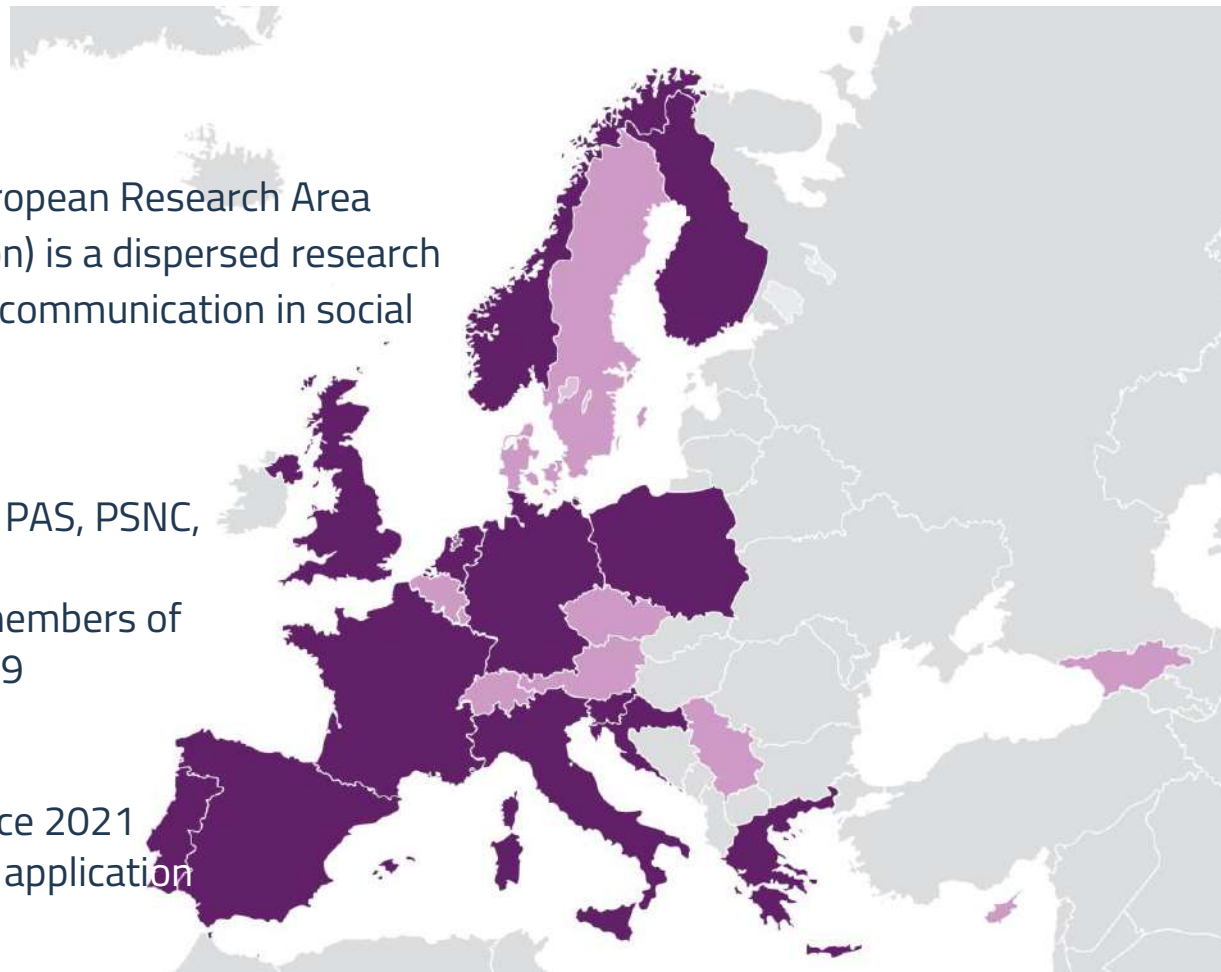
Maciej Maryl
Magdalena Wnuk
Tomasz Umerle

 **Otwarta**
humanistyka

 **OPERAS**^{PL}

OPERAS (Open Access in the European Research Area Through Scholarly Communication) is a dispersed research infrastructure for open scholarly communication in social sciences and humanities (SSH).

- over 60 members
- 3 members from Poland: IBL PAS, PSNC, Silesia University
- central hub in Brussels (15 members of coordination team, including 9 employees of the AISBL)
- exists since 2017
- listed on ESFRI Roadmap since 2021
- in 2025 it will begin the ERIC application process



OPERAS-PL is a national node for OPERAS RI:

- launched in June 2021
- conducts research and training
- reaches over 500 newsletter subscribers
- published Open Humanities Manifesto in 2024
- applies for the Polish Research Infrastructures' Roadmap



Consortium partners

- Digital Centre Foundation (CC)
- Information Processing Centre – National Research Institute (OPI PIB)
- Institute of Bioorganic Chemistry Polish Academy of Sciences Poznań Supercomputing and Networking Center (PNCS)
- Wrocław University of Science and Technology (PWr)
- Adam Mickiewicz University in Poznań (UAM)
- University of Lodz (UŁ)
- University of Silesia in Katowice (UŚ)
- University of Warsaw (UW).



Milestones in 2024/2025



**Open Humanities
Manifesto**

17 September 2024



**Consortium
Agreement**

31 December 2024



**Polish Research
Infrastructures'
Roadmap**

21 January 2025

More information

Website

operas.pl

otwartanauka.hypotheses.org

E-mail

otwartanauka@ibl.waw.pl

Social channels

Facebook: @Centrum.Humanistyki.Cyfrowej
#OtwartaNauka #OtwartaHumanistyka #OH



Otwarta
humanistyka

DIGIT

PRACE

Norbert Meyer



PARTNERSHIP FOR ADVANCED COMPUTING IN EUROPE

The Third Phase of PRACE

Norbert Meyer
Poznań Supercomputing and Networking Center



PRACE Legacy

- ▶ Result of collaboration initiatives from 2004, **for nearly 20 years**
- ▶ PRACE, the Partnership for Advanced Computing in Europe, is a not-for-profit organisation incorporated in Belgium (AISBL) in 2010
- ▶ Over past decade, members, each representing one of the currently 25 member countries, coordinated their efforts to provide an HPC infrastructure to **enable high-impact scientific research and innovation** across all disciplines and industrial applications, thereby enhancing European scientific, technological and economic competitiveness for the benefit of society

ESFRI Monitoring Process

- ▶ PRACE (EU-HPC) is on the ESFRI list since 2006
- ▶ PRACE is landmark since 2016
- ▶ Evaluation 2024
- ▶ PRACE as an **interface between computing & data** (EOSC)

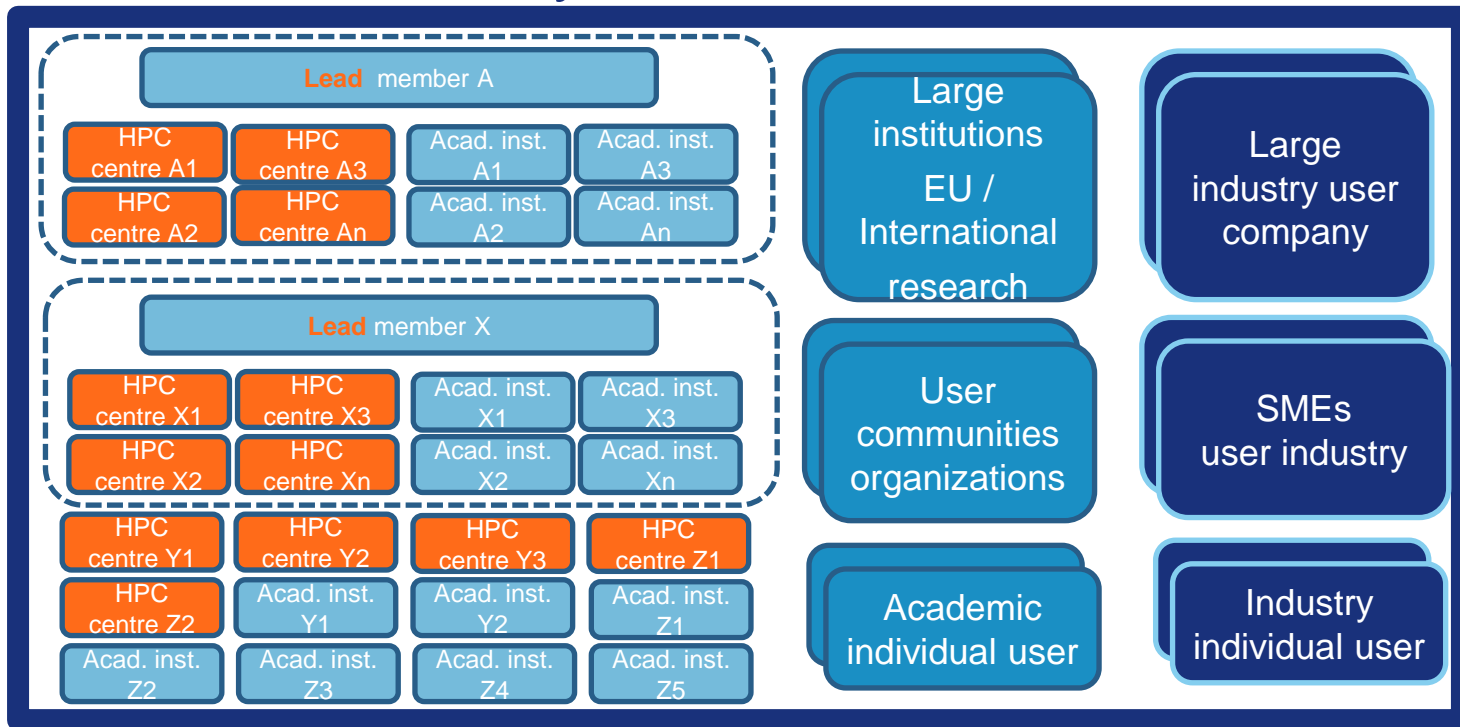


- ▶ **PRACE national infrastructure – on the list of Polish Research Infrastructures (MNiSW)**

PRACE Legacy (cont'd)

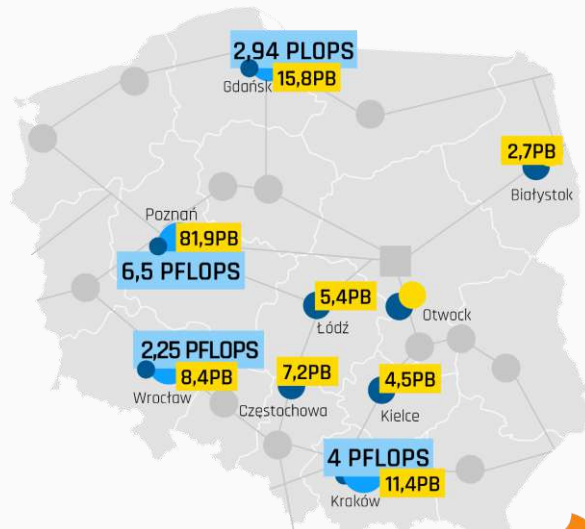
- ▶ Chiefly distributed resources on the Tier-0 world-class supercomputers of HM, on the basis of a globally recognized and **transparent peer-review process** based on scientific excellence
 - ▶ Distributed more than **32.5 billion core hours to 947 scientific projects**
- ▶ Mainly through its EU-funded PRACE-IP projects
 - ▶ Promoted excellence in computational science and engineering by developing knowhow and expertise, e.g. via training, where **25.000 persons were trained**
 - ▶ Application support, technology watch, etc, across Europe
- ▶ Collaborating with European HPC industry and the promotion of innovation by supporting industrial HPC users in particular SMEs

PRACE Assembly of Members



From Infrastructure to Association of Users and HPC Centres

- ▶ PRACE 3 transforms PRACE into a user association
 - ▶ Acknowledging the gap in the new landscape to support users (Academia & Industry)
 - ▶ Independent and beyond political frontiers
 - ▶ Acknowledging the Infrastructure and Political leadership is with EuroHPC which PRACE wants to support as a successful and performing infrastructure
- ▶ PRACE 3 Pillars & Principles
 - ▶ PRACE adopts a user-centric approach
 - Collects feedback and expectations from users to allow HPC Centres to adapt their HPC-HPDA-AI-QC facilities to the needs of their users*
 - ▶ PRACE empowers User Communities
 - Integrates the active involvement of user communities, scientific and industrial, within a transparent governance model enabling them to define and drive PRACE activities*
 - ▶ PRACE provides support for best utilization of Europe HPC Infrastructure
 - Support users (training, application support, co-development ...) towards an efficient use of the infrastructure*
 - ▶ PRACE fosters International Collaboration
 - Continues to develop collaboration beyond Europe*



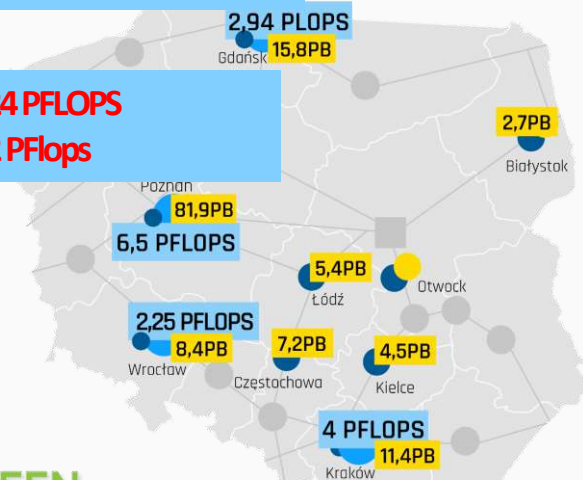
Infrastruktura



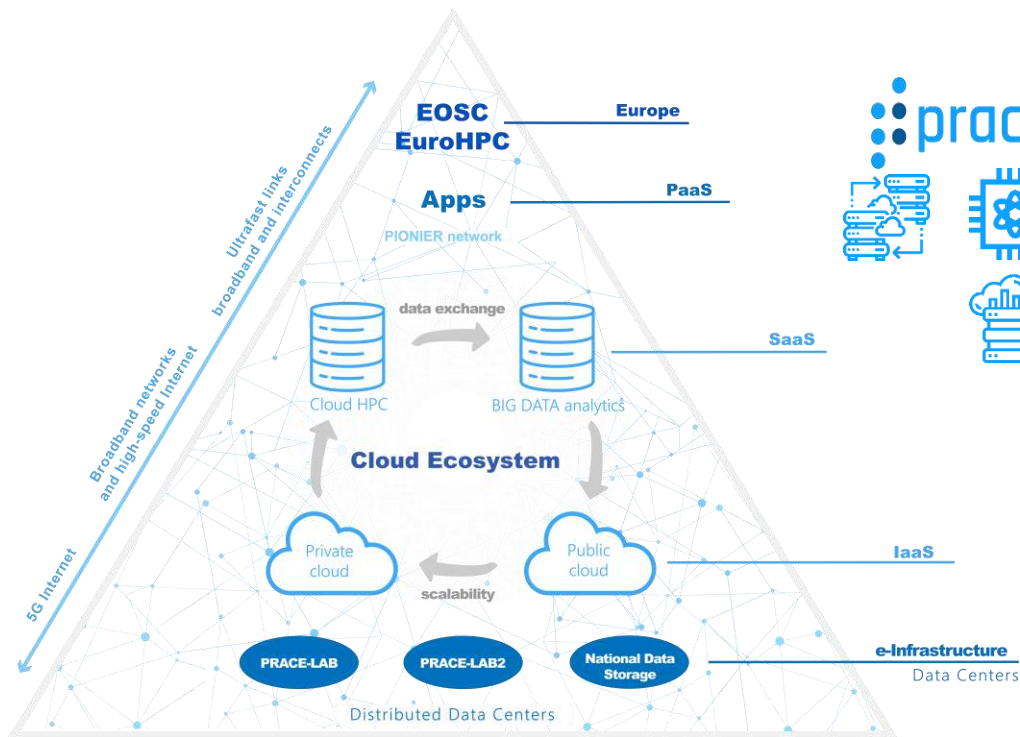
pracelab 2

11 PFLOPS

24 PFLOPS
2 PFlops



e-Infrastruktura w Europie







DATACOMP

AI, HPC and Big Data Analysis for Grand Challenges

Zapraszamy do udziału w drugiej edycji krajowej naukowej konferencji użytkowników infrastruktury badawczej PRACE-LAB, PRACE-LAB2 oraz Krajowego Magazynu Danych (KMD) – **DataComp2023 – AI, HPC and Big Data Analysis for Grand Challenges.**

19-20 września 2023, Gdańsk

www.DataComputing.pl

ENVIRONMENT

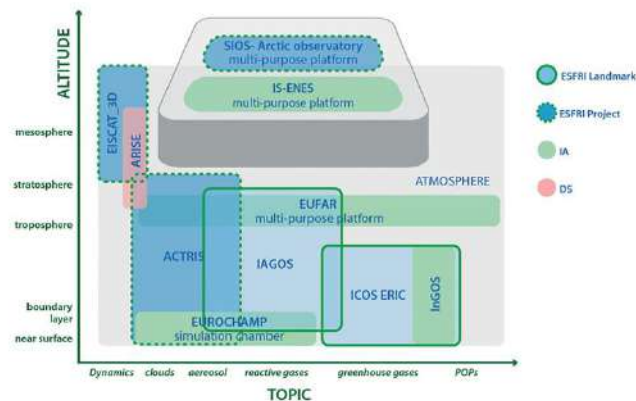
ACTRIS ERIC

Aleksander Pietruczuk, Iwona Stachlewska



ACTRIS – Aerosol, Clouds and Trace Gases Research InfraStructure

- ACTRIS – paneuropejska infrastruktura dostarczająca wysokiej jakości dane na temat aerozoli, chmur i gazów śladowych w warunkach naturalnej i kontrolowanej atmosfery
- Dziedzictwo programów infrastrukturalnych, projektów naukowych i inwestycji krajowych
- Perspektywa wiodącej roli w badaniach atmosfery, innowacji technologicznych i kształceniu



ACTRIS - organizacja i sposób działania

• ACTRIS

- integracja działań i usług świadczonych przez infrastruktury centralne (CF) i krajowe (NF) zlokalizowane w 22 krajach europejskich i wybranych lokalizacjach na świecie;
- harmonizacja i dystrybucja zbiorów danych.

- **Infrastruktury krajowe/narodowe (NF)** - platformy obserwacyjne i badawcze, pozyskiwanie wysokiej jakości, wiarygodnych i dokładnych danych rozkładu 4-D i zmienności aerozoli, chmur i gazów śladowych.

- **infrastruktur centralnych (CF)** - sześć centrów tematycznych (TC) wspierających infrastruktury krajowe, centrum danych (DC) przechowujące i udostępniające dane i biuro (HO) koordynujące całość.



Badania Atmosfery

Długookresowe pomiary aerozoli, chmur i gazów śladowych prowadzone od powierzchni Ziemi do stratosfery przy pomocy najnowszych technik in-situ i technik zdalnych

Zapewnienie jakości danych

Dane o najwyższej jakości są generowane poprzez przestrzeganie zharmonizowanych i znormalizowanych procedur operacyjnych oraz przestrzeganie zasad FAIR.



Łatwo dostępne dane

ACTRIS zobowiązuje się do zapewnienia użytkownikom bezpłatnego i otwartego dostępu do danych pierwotnych i produktów danych za pośrednictwem pojedynczego punktu dostępu.

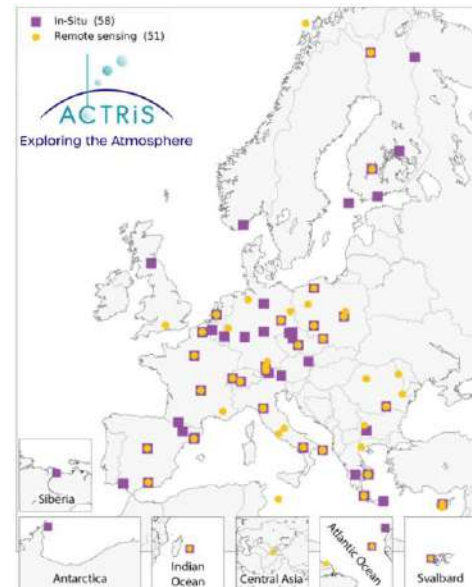
Nowe możliwości

ACTRIS zapewnia dostęp do najlepszego środowiska badań atmosfery oraz wiedzy specjalistycznej, promuje międzynarodową współpracę i wspiera szkolenia badaczy i naukowców rozpoczynających karierę zawodową.



ACTRIS w Polsce

- Konsorcjum ACTRSI PL
 - 5 uczelni, 2 instytuty PAN, 1 PiB
 - 6 platform obserwacyjnych
 - 1 platforma mobilna
 - 1 laboratorium badawcze
- Różne źródła finansowania rozwoju, np. środki własne, POIR 4.2 (17 mln. PLN), FENG, MNiSW, projekty badawcze (NCN)
- Współpraca z innymi infrastrukturami (np. ICOS), agencjami ochrony środowiska i środowiskiem lokalnym, kształcenie studentów



ACTRIS w Polsce - platformy obserwacyjne

- 6 platform obserwacyjnych + laboratorium mobilne
 - Warszawa
 - Belsk
 - Wrocław
 - Racibórz
 - Rzecin
 - Strzyżów
- 3 komponenty pomiarowe
 - Aerozole – techniki zdalne + techniki in-situ
 - Aerozole + Chmury – techniki zdalne



eLTER RI

Kinga Krauze



eLTER – European Long-Term Ecosystem, Critical Zone & Socio-Ecological Research

Kinga Krauze
European Regional Centre for Ecohydrology PAS
k.krauze@erce.uensco.lodz.pl

FILLING A
CRITICAL GAP
FOR TOP-CLASS
SCIENCE AT THE
CONTINENTAL
SCALE



eLTER ESFRI process: stakeholder support & coverage, 2022-12

ESFRI Roadmap 2018

SUPPORT

Political:

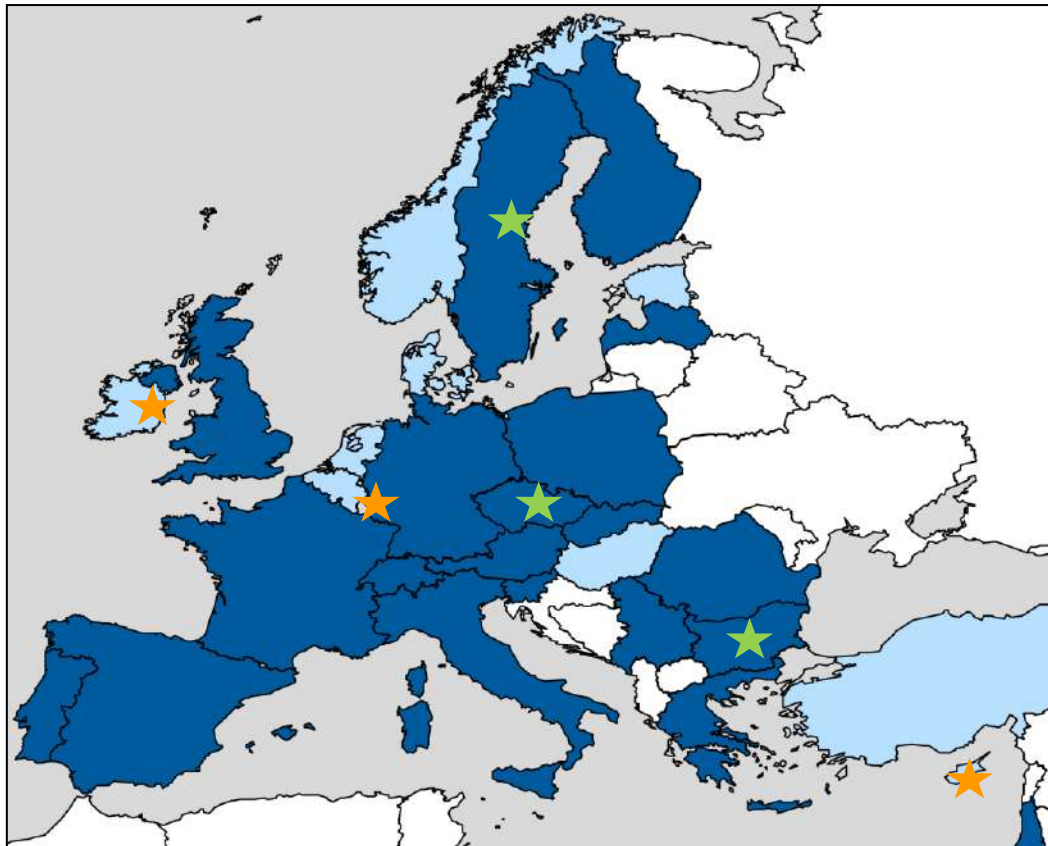
20 countries

Scientific institutions:

>165 [from 28 countries]

CAPITALIZING ON...

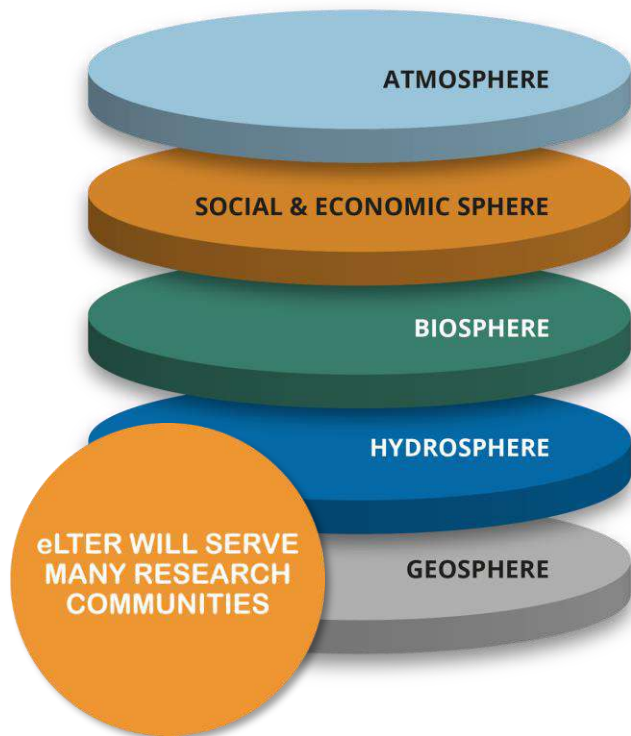
- 26 country networks
- >500 Sites
- >50 LTSER Platforms



- ★ Additional political support since Roadmap 2018
- ★ Started national LTER processes since 2018

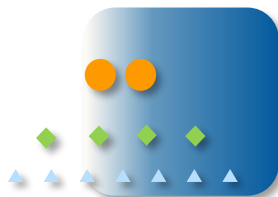
Core characteristic: „Whole System“-Approach

Cross-disciplinarity needed to understand systems functioning



DESIGN

- HIERARCHY OF SITE CATEGORIES



- VARYING IN COMPLEXITY & COSTS

SERVICES

- BASIC SITE INFRASTRUCTURE
- SITES AS DIGITAL TWINS
 - STANDARD OBSERVATIONS ON SITE
 - MULTIPLE OTHER DATA SOURCES (RS, MODELLING)
- DATA ACCESS
- ANALYTICAL TOOLS, VIRTUAL LABS
- TRAINING ETC.



The eLTER Research Challenges and related policies

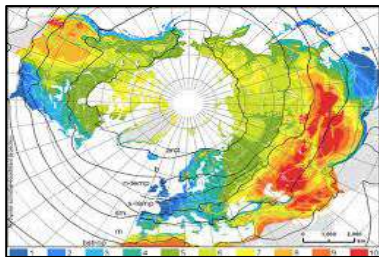
Biodiversity dynamics

EU Biodiversity Strategy, Water Framework Directive, Habitats Directive



Climate change

European Green Deal, Strategy on adaptation to Climate Change, UNFCCC Paris Agreement



Eutrophication and pollution

Water Framework Directive, UNECE-CLRTAP



Socio-ecology - Environmental protection, sustainable management of natural resources, water, soils, biodiversity & ecosystems

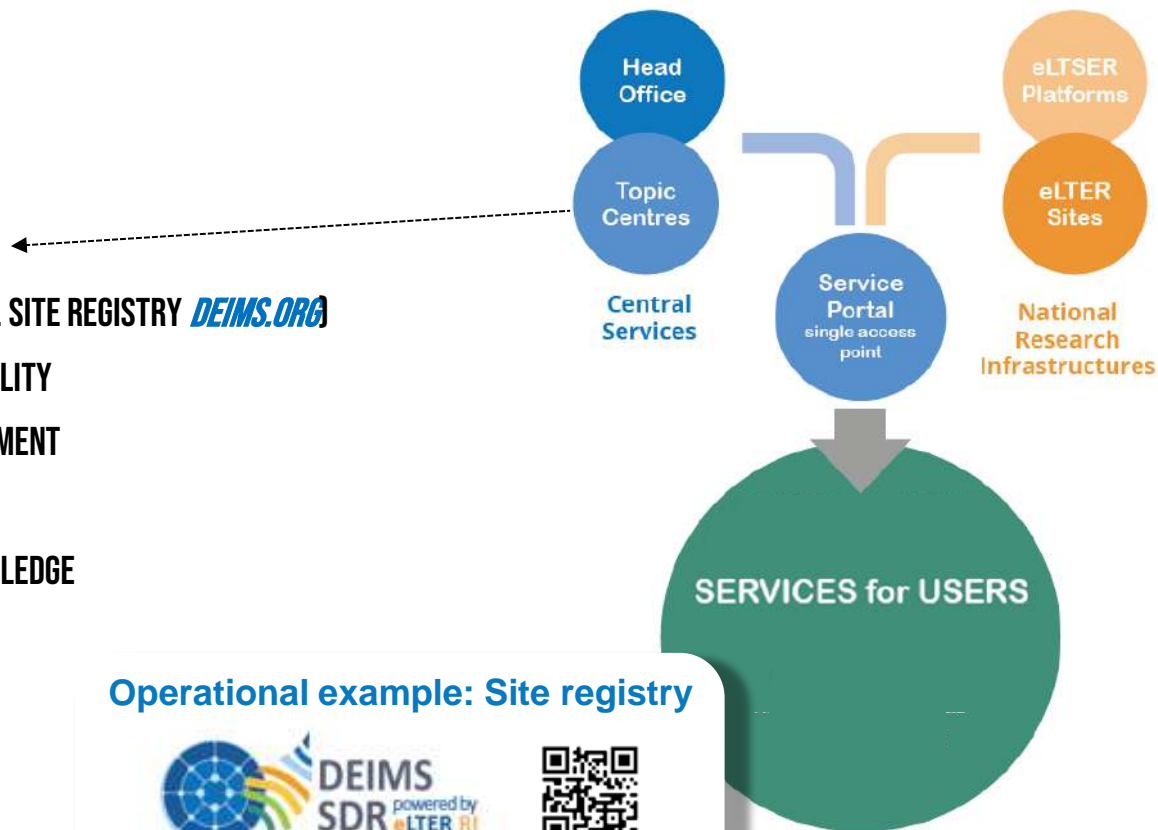
CAP, Strategy on adaptation to Climate Change, Soils thematic strategy



Topic centres will collectively cover Thematic Service Areas

6 THEMATIC SERVICE AREAS

- DATA MANAGEMENT & INTEGRATION (E.G. SITE REGISTRY [DEIMS.ORG](https://deims.org))
- OPTIMISED DESIGN AND RI INTEROPERABILITY
- TECHNOLOGICAL INNOVATION & DEVELOPMENT
- ANALYSIS TOOLS AND MODELLING
- SYNTHESIS TOWARDS ACTIONABLE KNOWLEDGE
- CENTRAL ANALYTICS AND OBSERVATION



Operational example: Site registry

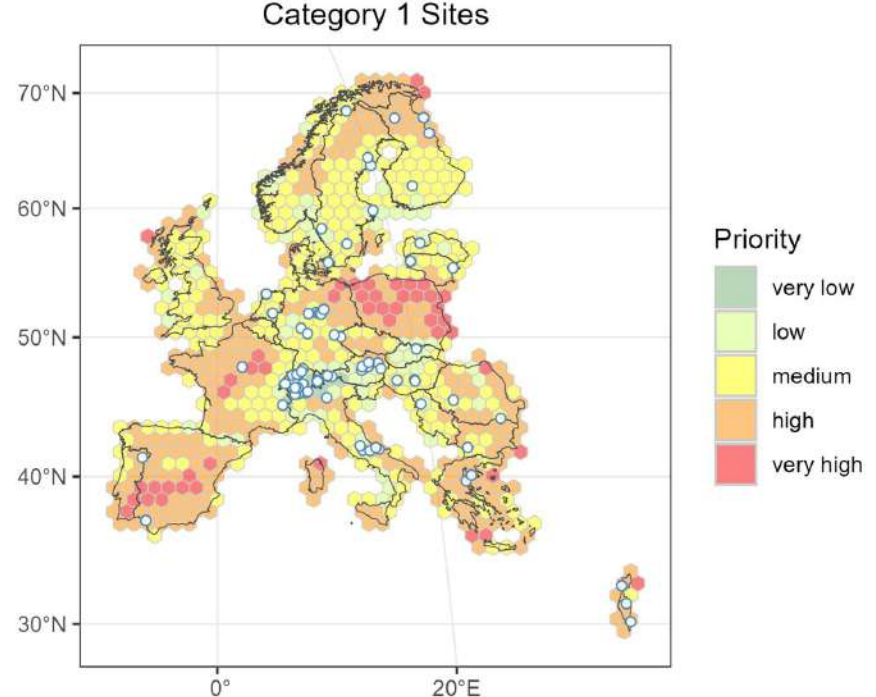
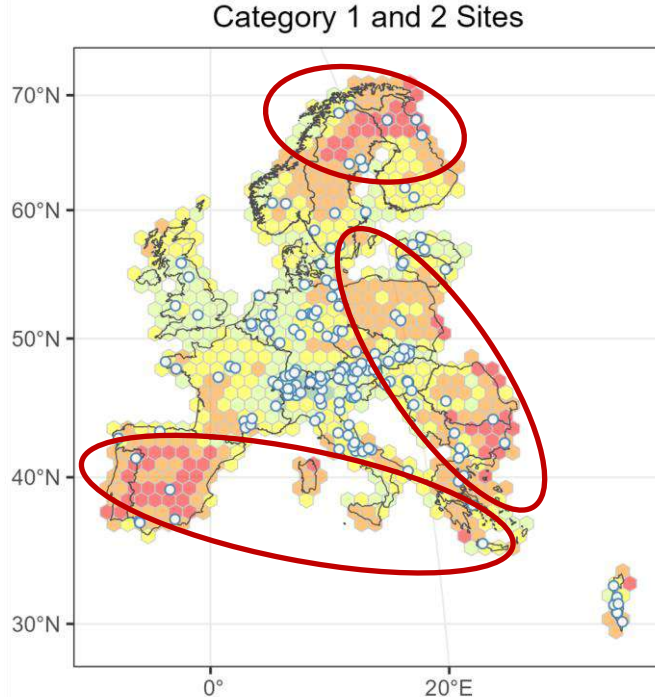


DEIMS
SDR powered by
eLTER RI



[DEIMS.org](https://deims.org)

Gap analysis – eLTER Sites Cat 1 & Cat 2



We are in the proces of acquiring new sites and partners, and analysing infrastructure collocation options!

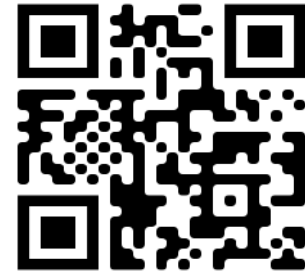


The eLTER Preparatory Phase Project (eLTER PPP),
HORIZON 2020 Coordination and Support Action in preparation of
implementing the Integrated European Long-Term Ecosystem,
critical zone and socio-ecological Research infrastructure (eLTER
RI).



The Integrated European Long-Term Ecosystem, critical zone and socio-
ecological Research infrastructure **Advanced Community project**
(eLTER PLUS)
HORIZON 2020 funded Research and innovation action (RIA) with three
main pillars: networking, joint research activities and transnational, remote
and virtual access.

Learn more
here:



EPOS ERIC

Anna Leśnodorska, Agnieszka Mtupa-Ndiaye



EPOS - European Plate Observing System

ERIC - The European Research Infrastructure Consortium for solid Earth science

Anna Leśnodorska, Agnieszka Mtupa-Ndiaye
Institute of Geophysics Polish Academy of Sciences

EPOS - European Plate Observing System



511 Data and Service Providers
~180 Research Organisations
26 European Countries
5 International Organizations

- Designed and implemented as the **only Research Infrastructure for solid Earth science** in Europe
- Brings together European Countries and aggregates research communities around the **Open Science paradigm**
- Integrates heterogeneous **data and products** generated across Europe and across disciplines making them **universally accessible** to **increase effectiveness in science** through a one-stop shop platform
- Support scientists in developing tool for **societal safety** against natural and anthropogenic hazards and to address **global challenges**

The EPOS multi-disciplinary Open Access Platform
to standardized, interoperable, high-quality controlled DATA
from (currently) 10 solid Earth science disciplines



EPOS - Polish National NODE

(Poland joined EPOS ERIC as full member in 2018)

EPOS-PL Consortium Members:

Akademickie Centrum Komputerowe Cyfronet AGH

Centrum Badań Kosmicznych PAN

Główny Instytut Górnictwa - PIB

Instytut Geodezji i Kartografii

Instytut Geofizyki PAN (lider konsorcjum)

Instytut Podstaw Inżynierii Środowiska PAN

Instytut Nauk Geologicznych PAN

Politechnika Warszawska, Wydz. Geodezji i Kartografii

Polska Grupa Górnicza S.A.

Uniwersytet Przyrodniczy we Wrocławiu

Wojskowa Akademia Techniczna

The aim of the **EPOS-PL Consortium** is to establish cooperation between Consortium Members within the framework of the implementation of the EPOS programme in Poland, to include the national research and observation infrastructure in the field of European Earth sciences infrastructure and global databases.

Coordination: Institute of Geophysics
Polish Academy of Sciences (since 2015)

Coordinator: Prof. Marek Lewandowski
(since December 2024)

**EPOS - project included in
The Polish Roadmap of Research Infrastructure (since 2020).**

The list of undertakings of strategic importance to the development of Polish science and its competitiveness. It includes infrastructures with the highest research potential facilities that embrace the best scientists and innovative businesses.



Seismology



Near Faults Observatories



GNSS Data and Products



Volcano Observations



Satellite Data



Geomagnetic Observations



Anthropogenic Hazards



Geological Information and Modeling



Multi-scale Laboratories



Tsunami

10 different **solid Earth science disciplines** are harmonized across EPOS into the **Thematic Core Services**. TCS are **transnational governance frameworks** enabling community-specific coordination and data integration across different disciplines in solid Earth science

TCS AH

Coordination: Institute of Geophysics PAS (2019-2028)

Director: Anna Leśnodorska (2023 -2028)

Thematic Core Service Anthropogenic Hazards (TCS AH) mission: to integrate (within EPOS) the research infrastructures related to studies of geo-hazards of anthropogenic origin, in particular those caused by the exploration and exploitation of geo-resources.

16 Institutions from 8 European and 1 Non-European Country

Access to the integrated research infrastructure of EPOS TCS AH: episodes (datasets), applications (software), workspace, HPC, collaboration functionalities, document repository

Euro-Argo ERIC

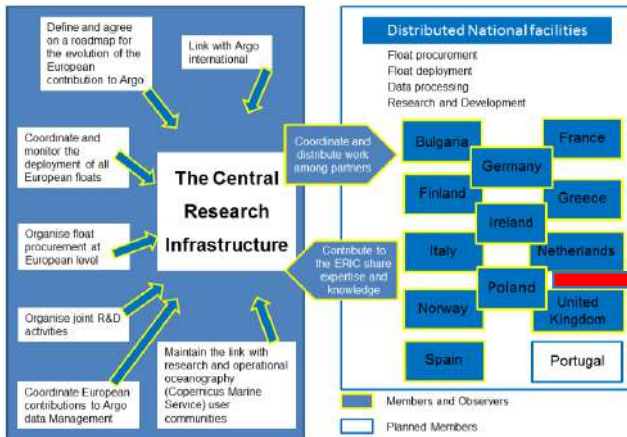
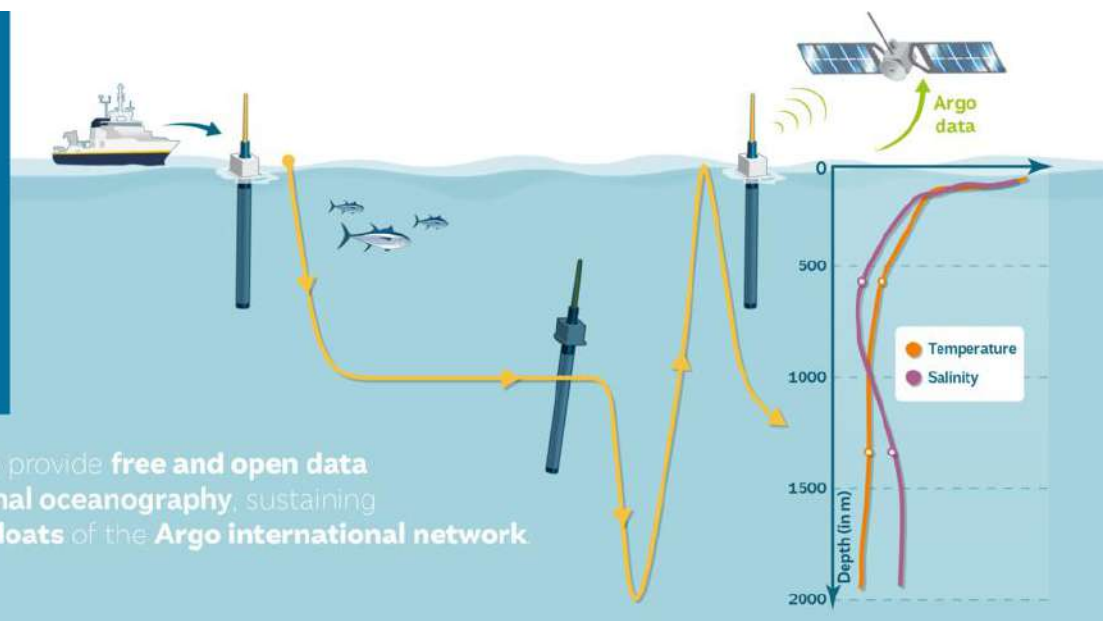
Waldemar Walczowski

EUROARGO

EUROPEAN RESEARCH
INFRASTRUCTURE CONSORTIUM
**FOR OBSERVING THE OCEAN, TO BETTER
UNDERSTAND AND PREDICT ITS ROLE
IN THE CLIMATE SYSTEM AND ITS HEALTH**



European countries join efforts to provide **free and open data**
to climate research and operational oceanography, sustaining
25% of the 4 000 autonomous floats of the **Argo international network**



ARGO-POLAND:

Institute of Oceanology Polish Academy of Sciences
Polish Naval Academy
Institute of Geophysics Polish Academy of Sciences



Euro-Argo ERIC

Euro-Argo is the European contribution to the global Argo floats network, a European legal entity (European Research Infrastructure Consortium, ERIC).

*Euro-Argo preparatory phase since 2008,
Euro-Argo ERIC since 2014*

Goals:

- Operate a network of approximately 800 floats, constituting a quarter of the global network;*
- Provide better coverage in European regional seas;*
- Implement a new phase of Argo, with extensions towards biogeochemistry, greater depths, and high geographic latitudes;*
- Ensure quality-controlled data.*

Argo - Poland



The Argo-Poland together Polish users of Argo floats. Argo-Poland is a national facility and a member of the Euro-Argo consortium.

On the Polish Infrastructure Roadmap since 2022 (as Euro-Argo)

Goals:

- Supporting the global Argo system by deploying and maintaining 3-4 floats annually;*
- Providing additional coverage in European regional seas and the Arctic Ocean;*
- Further developing the infrastructure by enhancing probe technology and adding new sensors;*
- Ensuring quality-controlled and accessible data, and providing datasets and products derived from the Argo data for research purposes.*



Argo-Poland

Financing:

2016-2021 Polish Ministry of Science and Higher Education, DIR/WK/2016/12

2022-2026 Polish Ministry of Education and Science, 2022/WK/04

EU Projects:

E-AIMS (Euro-Argo Improvements for the GMES Marine Service) 2013-2015

SIDERI (Strengthening International Dimension of Euro-Argo Research Infrastructure) **EA-RISE** (Euro-Argo Research Infrastructure Sustainability and Enhancement) 2019-2022

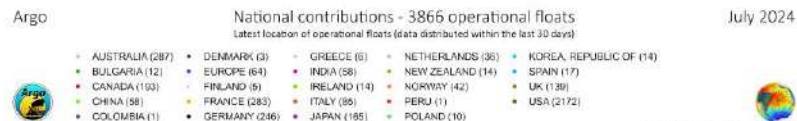
EA-ONE (Euro-Argo ERIC scaling up for OneArgo Network Extension) 2025-2027



Collaborators

- eCUDO (Oceanographic Data and Information System)
- SatBałtyk (Satellite Monitoring of the Baltic Sea Environment)
- Polish Scientific Committee on Oceanic Research PAN
- The Committee on Polar Research PAN
- Institute of Meteorology and Water Management
- Hydrographic Office of the Polish Navy
- Small and Medium-sized Enterprises (SME)

<https://www.iopan.pl/hydrodynamics/po/Argo/argo.html>





Thank you!

January 16, 2025, Warsaw, Poland



**SCIENCE
IN POLAND**

