
EPOS
EUROPEANPLATEOBSERVINGSYSTEM

Who makes EPOS?

EPOS is the relevant initiative to tackle the challenge of building the community for Solid Earth Sciences in Europe. National implementation plans have already been launched to support the national research infrastructures participating to the EPOS integration plan as well as to implement the coordination and the facilities at national level.

EPOS COMMUNITY

20 PARTNERS - 18 countries and 1 non-governmental organization ORFEUS

(Italy, France, Germany, The Netherlands, Romania, Iceland, Switzerland, United Kingdom, Norway, Turkey, Ireland, Portugal, Spain, Greece, Sweden, Poland, Denmark, Czech Republic, ORFEUS managed by KNMI, The Netherlands)

6 ASSOCIATED PARTNERS - 5 countries and 1 international organization EMSC

(Slovak Republic, Finland, Slovenia, Austria, Israel)

for a total of 23 COUNTRIES INVOLVED

The community contributing to the EPOS integration plan is larger than the official partnership of EPOS Preparatory Phase, since several countries expressed their interest to join our initiative and many more countries are represented by the two international organizations.

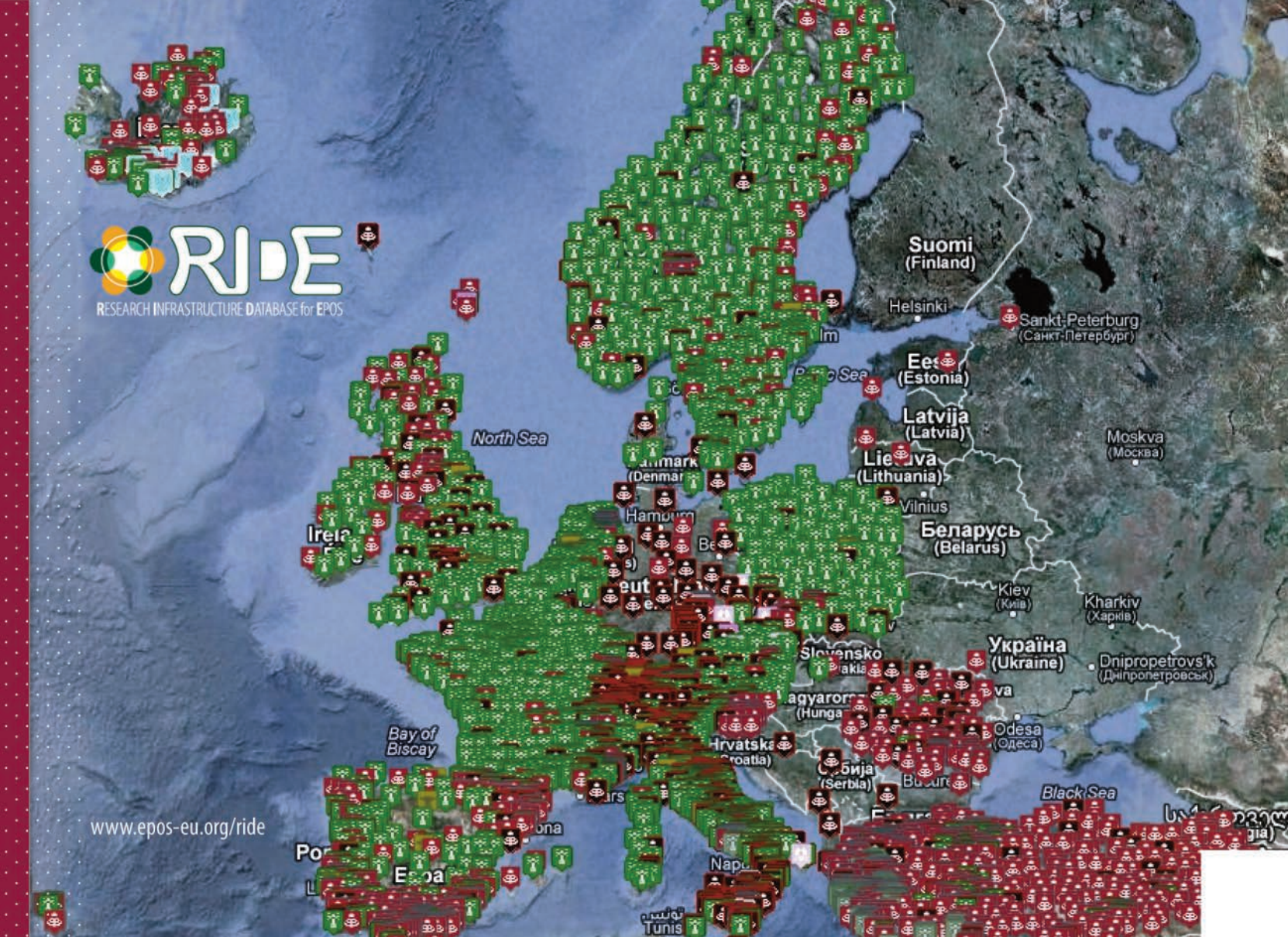
photo: Stanislava Kyselová, Akademický bulletin, Czech Republic

EPOS Mission

The European Plate Observing System:

- represents a scientific vision and approach in which innovative multidisciplinary research is made possible for a better understanding of the physical processes controlling earthquakes, volcanic eruptions, unrest episodes and tsunamis as well as those driving tectonics and Earth surface dynamics

- has a long-term plan to facilitate integrated use of data, models and facilities from mainly distributed existing, but also new research infrastructures for Solid Earth Science. The aim is to obtain an efficient and comprehensive multidisciplinary research platform for the Earth sciences in Europe


RIDE
RESEARCH INFRASTRUCTURE DATABASE for EPOS
www.epos-eu.org/ride
North Sea
Bay of Biscay
Black Sea
Suomi
(Finland)
Helsinki
Sankt-Peterburg
(Санкт-Петербург)
Eesti
(Estonia)
Latvija
(Latvia)
Lietuva
(Lithuania)
Vilnius
Беларусь
(Belarus)
Moskva
(Москва)
Kiev
(Київ)
Kharkiv
(Харків)
Україна
(Ukraine)
Dnipropetrovs'k
(Дніпропетровськ)
Odesa
(Одеса)
Hrvatska
(Croatia)
Србија
(Serbia)
Tunis

EPOS key Challenges

Integration of the existing national and transnational Research Infrastructures

Interoperability of thematic services for a multidisciplinary community of users

Open access to multidisciplinary Research Infrastructures for promoting cross-disciplinary research

Progress in Science

Societal contributions for hazard assessment and risk mitigation

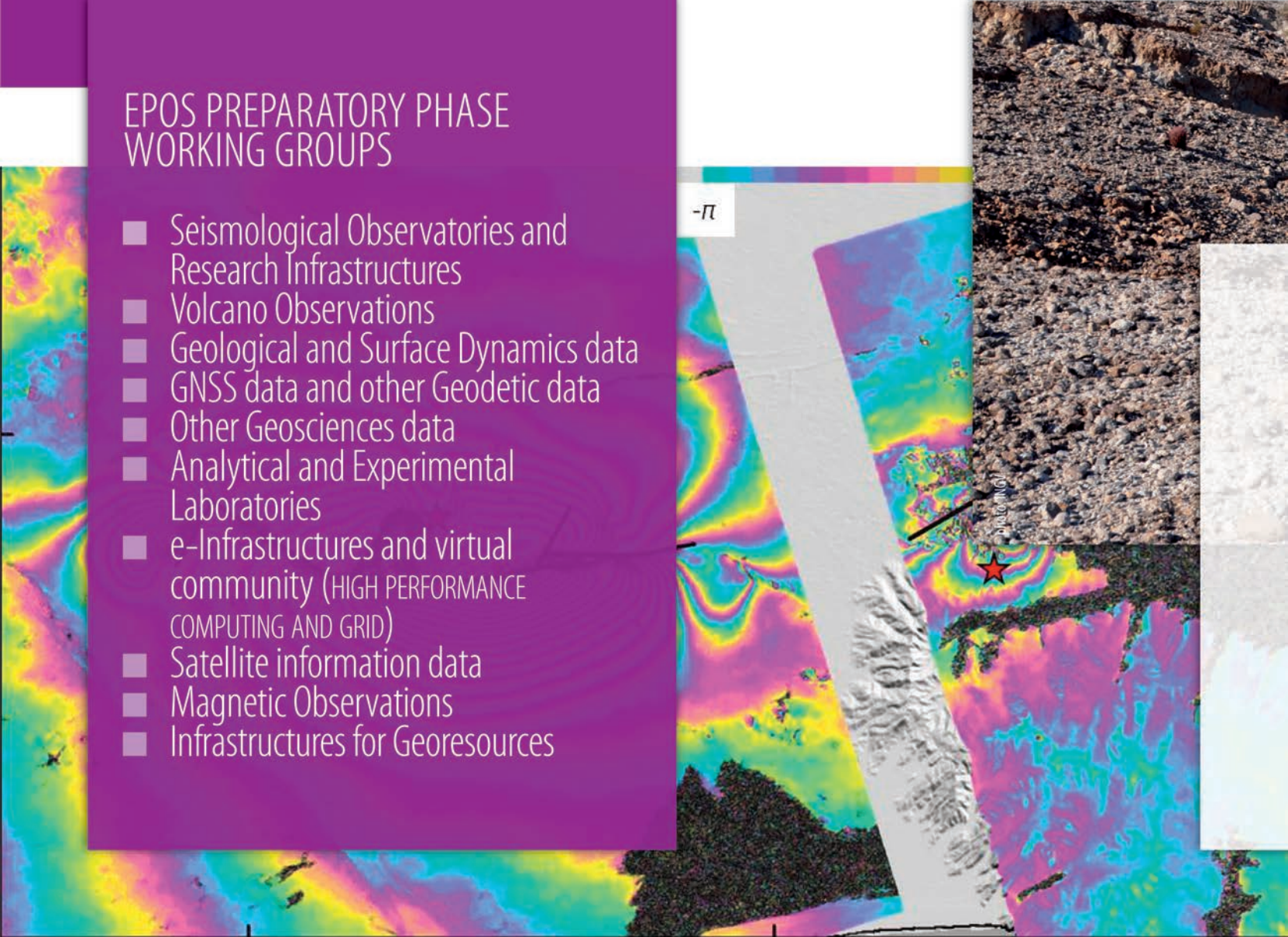
photo: IMO | Iceland

THE OVERRIDING AIM OF EPOS IS:

- to help Earth scientists garner a more holistic understanding about the underlying processes of Earth's tectonics and natural hazards
- to open up the enormous wealth of available data and promote cross-disciplinary science serving society
- to establish interoperable services in Earth sciences on a European scale

EPOS PREPARATORY PHASE WORKING GROUPS

- Seismological Observatories and Research Infrastructures
- Volcano Observations
- Geological and Surface Dynamics data
- GNSS data and other Geodetic data
- Other Geosciences data
- Analytical and Experimental Laboratories
- e-Infrastructures and virtual community (HIGH PERFORMANCE COMPUTING AND GRID)
- Satellite information data
- Magnetic Observations
- Infrastructures for Georesources



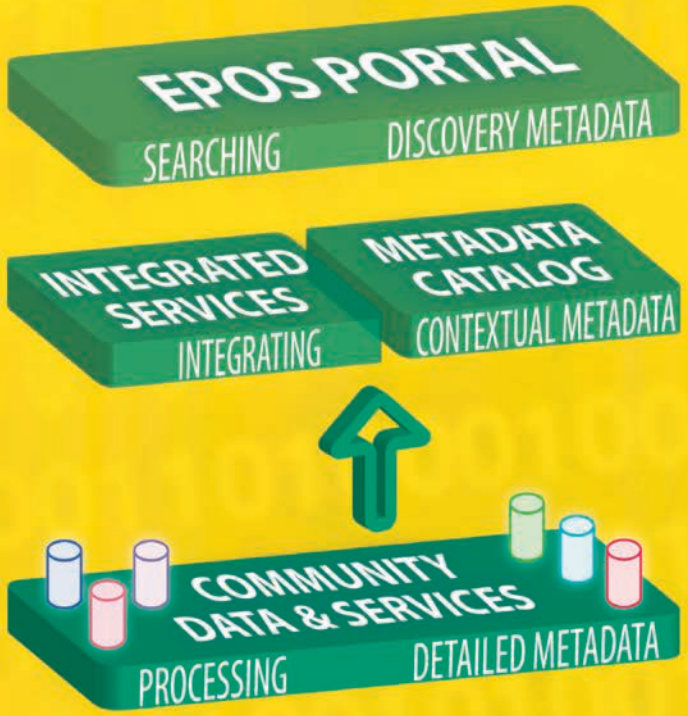
EPOS impact

ON SCIENCE AND SOCIETY INVOLVES:

- open access to a multidisciplinary Research Infrastructure, which will support scientific advances by providing prompt and continuous availability of high quality data and the means to process and interpret them
- data infrastructures and novel Core Services, which will contribute to information, dissemination, education and training
- implementation plans, which require strategic investment in research infrastructures at national, European and international levels
- contributions to geo-hazard assessment and mitigation activities

EPOS e-Architecture is made up of three levels:

- the UPPER LEVEL allow a user to access EPOS data and services. It is based on a simple metadata model, generated from CERIF, which allows a basic search and discovery, together with other portal functions and user access policies
- the MIDDLE LEVEL is the EPOS-integration level, made up of a catalogue using the CERIF metadata format and some services for managing integration and visualization
- the BOTTOM LEVEL is the community level, made up of Data Providers sharing their data, services, and in some cases organized in Thematic nodes or federations



EPOS ICT platform and Core Services

EPOS enables multidisciplinary investigations to promote cross-disciplinary science and using IT innovations to facilitate novel visualization and analysis of data and integration of models on a scale that has not yet been possible. This requires the implementation of comprehensive research infrastructures and the use of e-Science innovation.

EPOS improves accessibility and usability of multidisciplinary data by integrating observational data and data products. To enable this, advanced ICT and e-science methodologies are being developed and will be employed.

Available data will be quality controlled according to the appropriate standards as defined by each of the disciplinary data providers.

Dedicated to whom?

EPOS is aimed at a broad stakeholders community including European and Mediterranean countries.

Several thousands of researchers in Earth sciences will benefit from the services provided by EPOS, fostering major advances in the understanding of dynamic processes occurring in the Earth.

WE HAVE IDENTIFIED THE FOLLOWING STAKEHOLDER CATEGORIES:

- National Research Organisations
- Funding Agencies
- Governements
- Data and services providers
- Scientific user community including Academia
- Industry

photo: IMO | Iceland

Grand Challenges for Solid Earth Science

photo: INGV

EPOS WILL CONTRIBUTE TO:

- build excellent science opportunities for a better society
- foster IT innovation for a better risk management of environmental hazards
- open new business opportunities for the local and global economy
- strengthen capacity building for new generations

A LONG TERM PLAN FOR THE INTEGRATION OF RESEARCH INFRASTRUCTURES FOR SOLID EARTH SCIENCE IN EUROPE

PMO_Silvia Filosa | concept design_Barbara Angioni
photo: Etna | Marco Liuzzi

www.epos-eu.org
www.epos-eu.org/ride
newsletter.epos@ingv.it

PMO - Istituto Nazionale di Geofisica e Vulcanologia - Italy | epos.secretariat@ingv.it