The Contribution of the Geodetic Community (WG4) to EPOS

R.M.S Fernandes

WG4 COMPOSITION				
First Name	*Last Name*	*Official ROLE within WG4*	*Country*	*Institution*
Rui	**Fernandes**	WG Chair	PORTUGAL	UBI/IDL
Luisa	**Bastos**	WG co-Chair	PORTUGAL	FC UP
Carine	**Bruyninx**	WG co-Chair	BELGIUM	ROB
Nicola	**D'Agostino**	WG co-Chair	ITALY	INGV
Athanassios	**Ganas**	WG co-Chair	GREECE	NOA
Martin	**Lidberg**	WG co-Chair	SWEDEN	LM
Jean Mathieu	**Nocquet**	WG co-Chair	FRANCE	CNRS
Matthias	**Becker**	WG Member	GERMANY	TU Darmstadt
Richard	**Bingley**	WG Member	UNITED KINGDOM	University of Nottingham
Rahsan	**Cakmak**	WG Member	TURKEY	TUBITAK MAM
Jan	**Dousa**	WG Member	CZECH REPUBLIC	Geodetic Observatory Pecny
Mariusz	**Figurski**	WG Member	POLAND	Military University of Technology
Andrzej	**Araszkiewicz**			Fac of Civil Eng. and Geodesy
Jorge	**Gárate**	WG Member	SPAIN	ROA
Ivan	**Georgiev**	WG Member	BULGARIA	BAS
Nicolas	**Houlie**	WG Member	SWITZERLAND	ETH
Halfdan	**Kierulf**	WG Member	NORWAY	STATKART
Abbas	**Khan**	WG Member	DENMARK	DTU-Space
Laurentiu	**Munteanu**	WG Member	ROMANIA	National Institute for Earth Physics
Giulio	**Selvaggi**	WG Member	ITALY	INGV
Bojan	**Stopar**	WG Member	SLOVENIA	University of Ljubljana
Hans	**van der Marel**	WG Member	NETHERLANDS	Delft University of Technology

EPOS
EUROPEAN PLATE OBSERVING SYSTEM

Research Infrastructure and e-science for Data and Observatories on Earthquakes, Volcanoes, Surface Dynamics and Tectonics

EPOS a long term integration plan of research infrastructures for solid Earth Science in Europe

Preparatory Phase Project

www.epos-eu.org

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What is EPOS?

- It is an ESFRI project (Preparatory Phase)
  - (European Strategic Forum on Research Infrastructures)
- It aims at integrating existing RIs for solid Earth
  - Supporting construction/implementation of community data centers
  - Building core services for different stakeholders
- It aims at creating the governance structure to manage this distributed RI and its services to users
- It aims at building a legal body to secure funds for maintaining RIs for solid Earth science

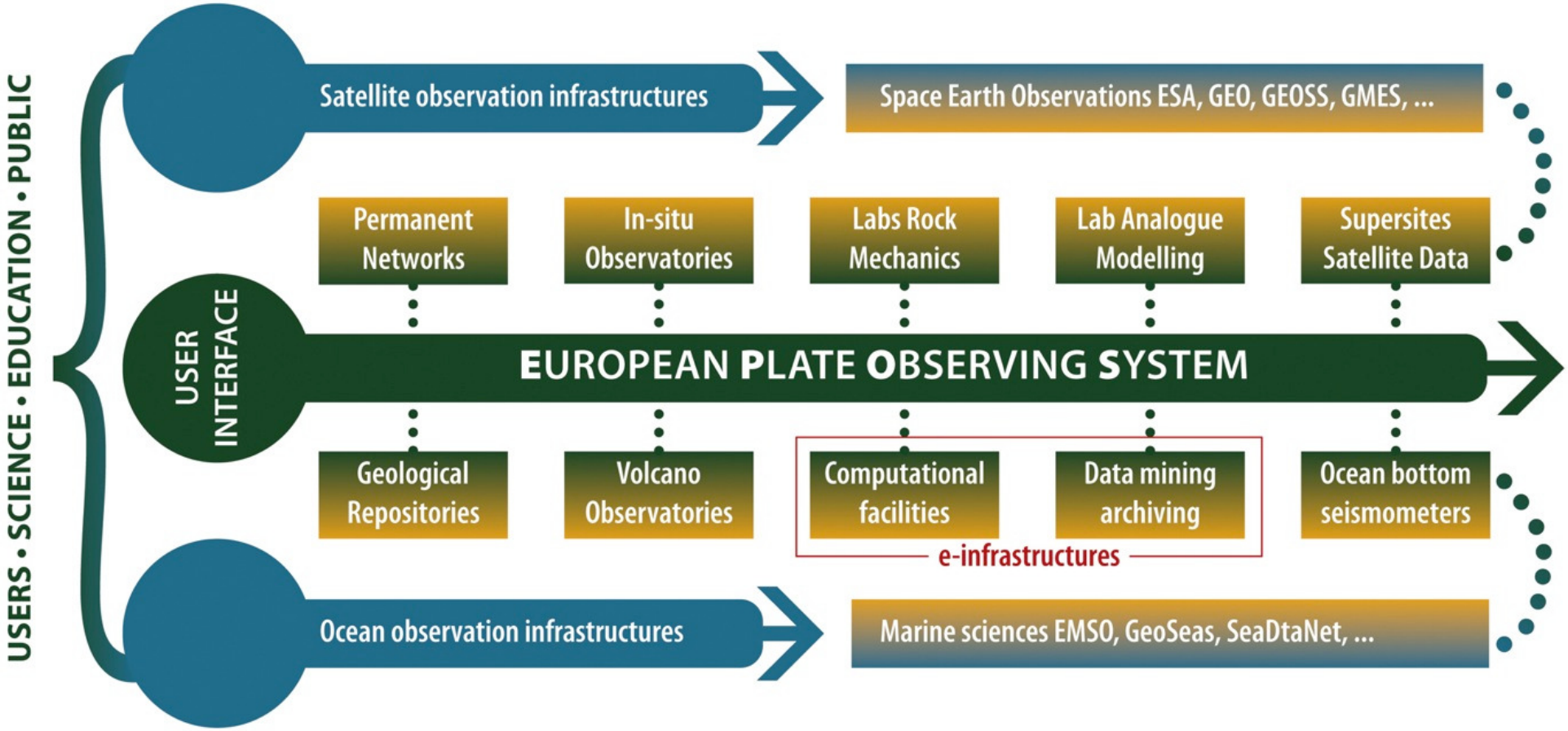
EPOS PP Mission

- The European Plate Observing System (**EPOS**) is a **long-term integrated research infrastructure plan** to promote innovative approaches 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

- The EPOS plan aims at integrating the currently scattered, but highly advanced European facilities into one, distributed, but coherent multidisciplinary Research Infrastructure (RI) taking full advantage of new e-science opportunities

EPOS PP Timeline

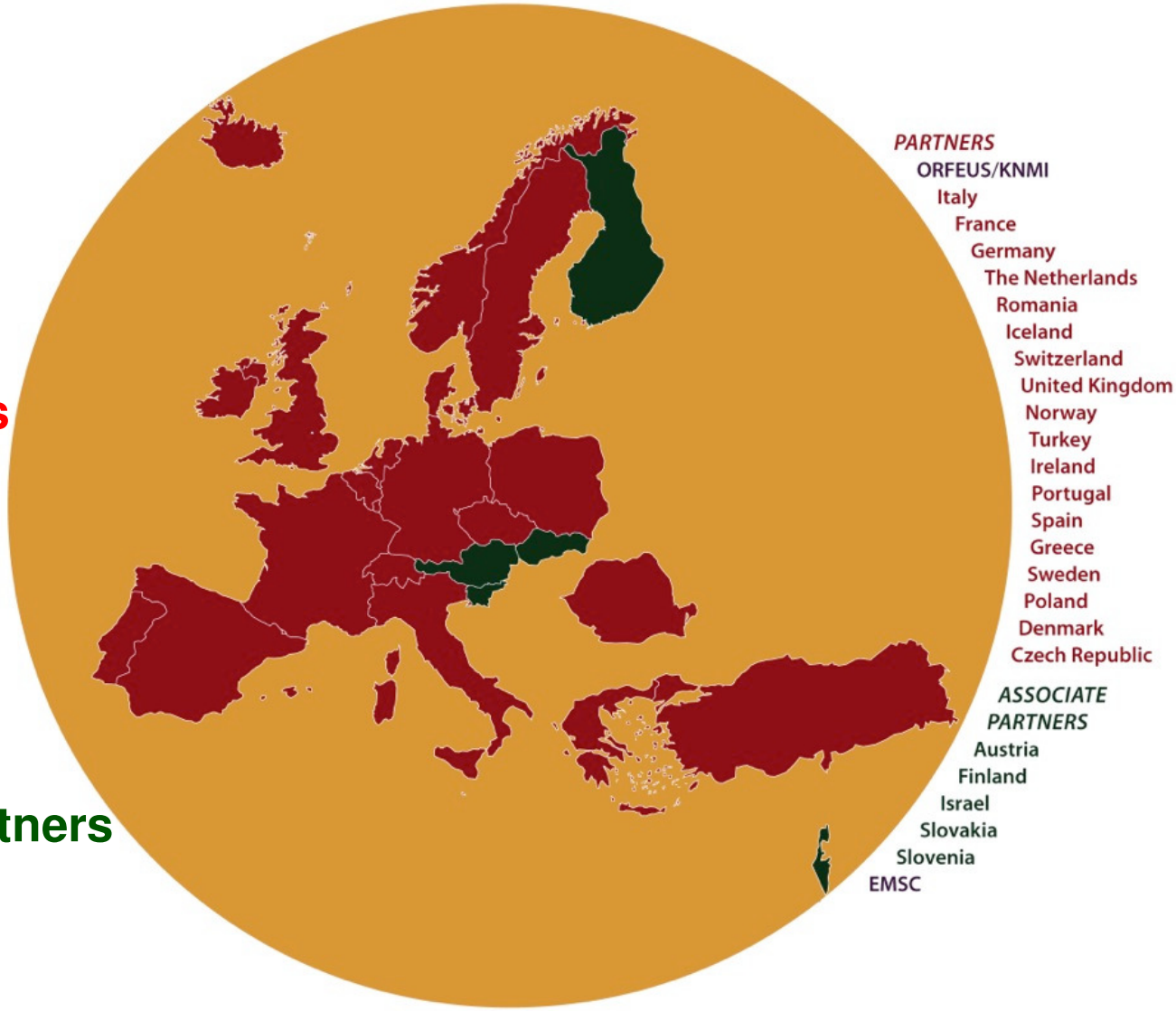
EPOS Components



EPOS: the Partnership

Who?

20 partners
for 18 countries



6 associate partners
for 5 countries

On going initiatives for integrating the partnership:
Bulgaria, Belgium, Russia, …..

Erice September 2011

Who makes EPOS?

- 20 partners + 6 assoc. partners (23 countries + ORFEUS & EMSC)
  - 146 institutes (38 universities)
- 271 people on the EPOS Collaborative Area
  - 230 people officially involved in WPs or WGs
  - The majority are researchers and top-level scientists
- 230 RIs declared so far
  - 195 RI contact persons

EPOS PP Objectives

Strategic objectives

- Establishing an efficient coordination and management of the infrastructure at European level that will govern the process of building the necessary components, the expenditure assessment and the outreach at the project level

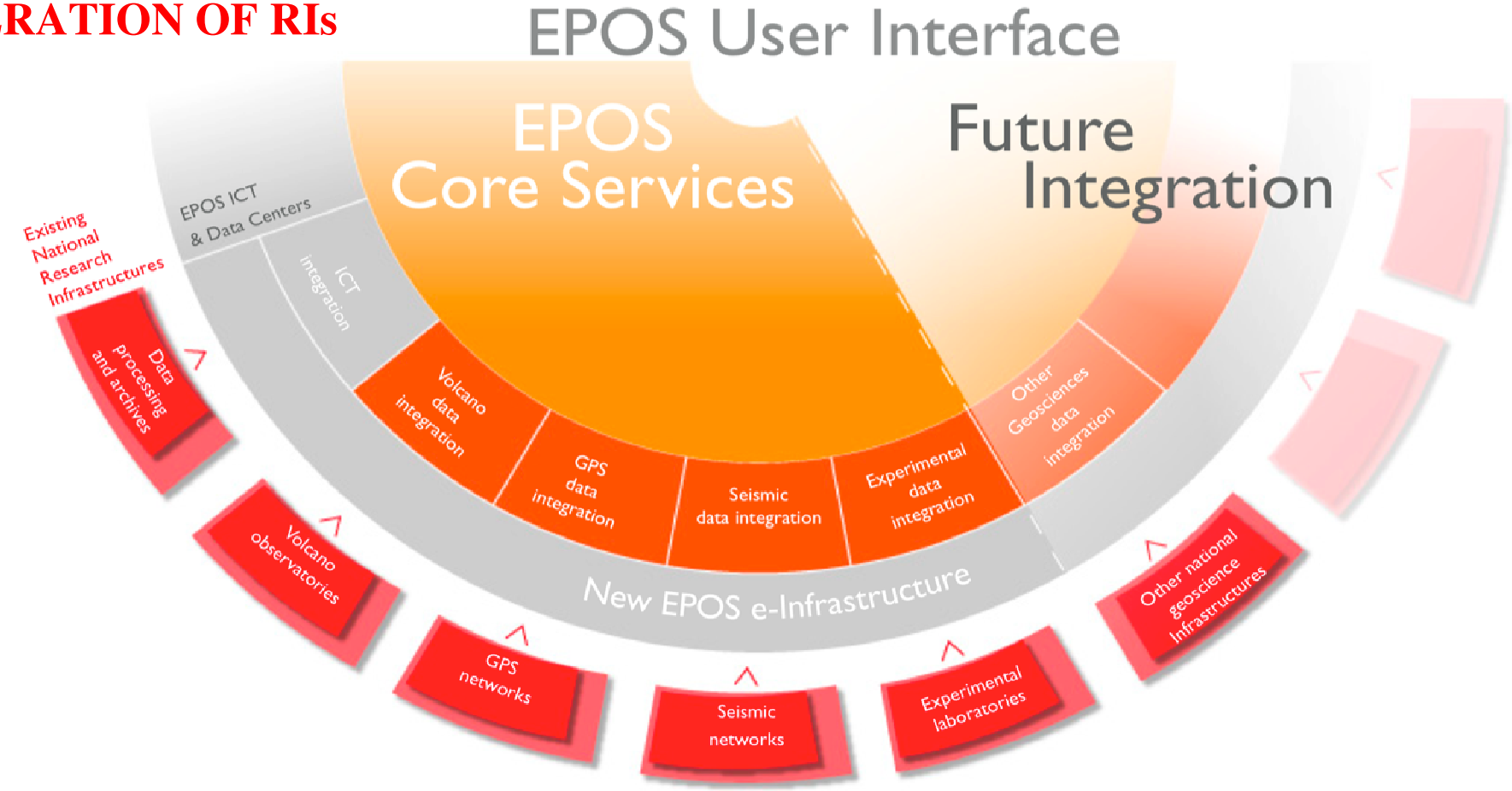
- Reaching mutual agreement among the countries involved regarding the core legal entity, its governance structure, and the commitments for long-term funding

EPOS PP Objectives

Technical Objectives

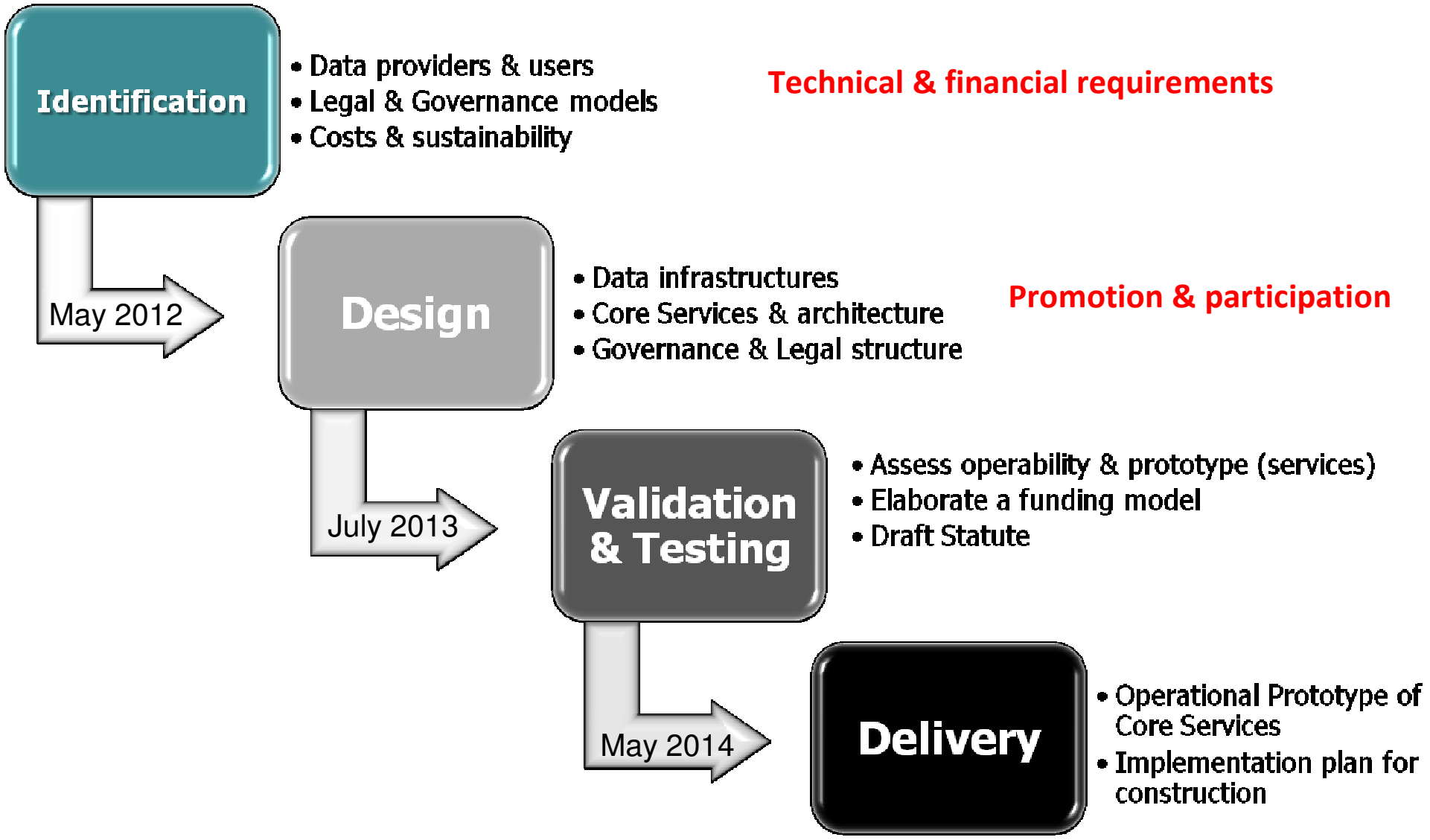
- Design of the EPOS Data Centers that each solid Earth science community is willing to develop or further integrate
- Design of the EPOS Core Services and create a prototype
- Linking EPOS with other international Earth Observing Systems
- Promoting coherent training, educational and dissemination programs and outreach

FEDERATION OF RIs



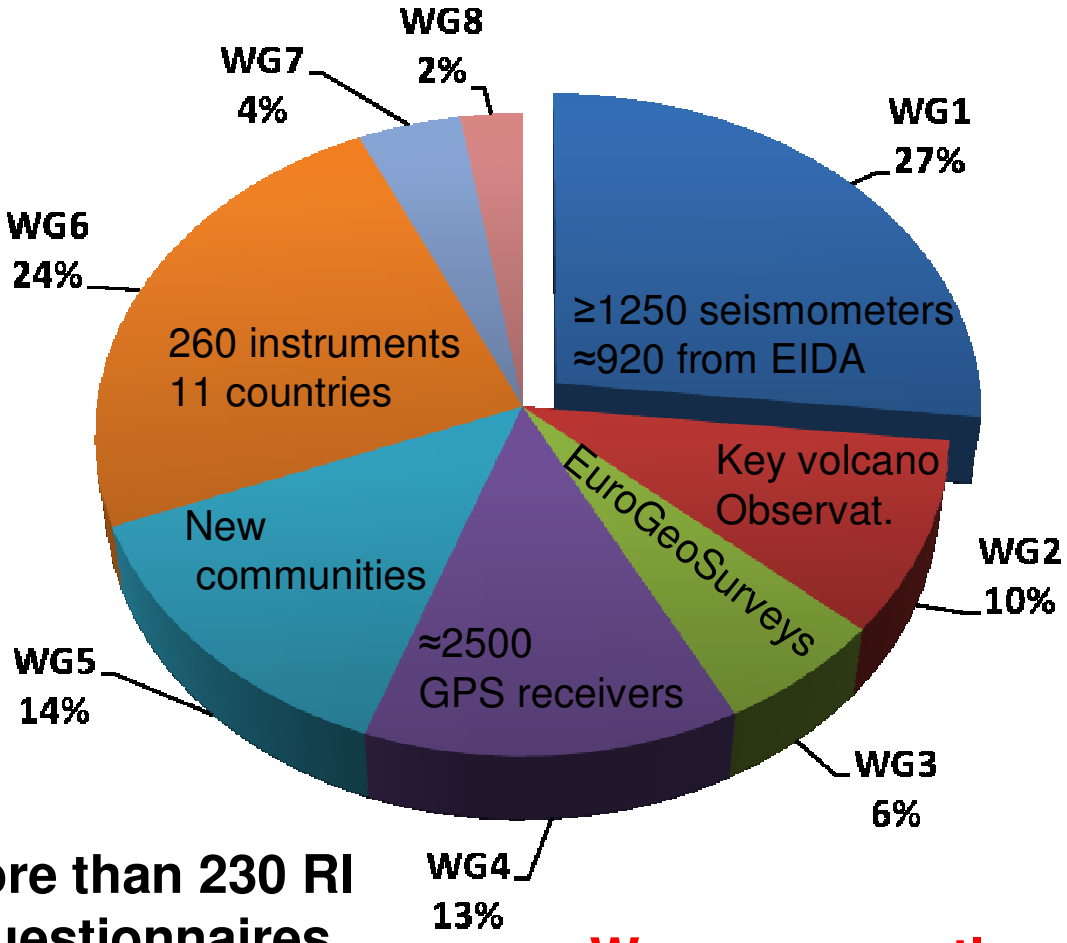
- The existing national research infrastructures are integrated into the EPOS Data Centres, which represent community specific services for data archiving and mining having their own computational resources.
- Community specific data centres are further integrated by the EPOS Core Services, representing the infrastructure layer consisting of common data services.
- EPOS data service infrastructure will be designed and established during the PP to serve multiple communities studying the solid Earth dynamics.

The EPOS Roadmap



Integrating data infrastructures

Response to RI - Questionnaires from the EPOS technical Working Groups (WGs)

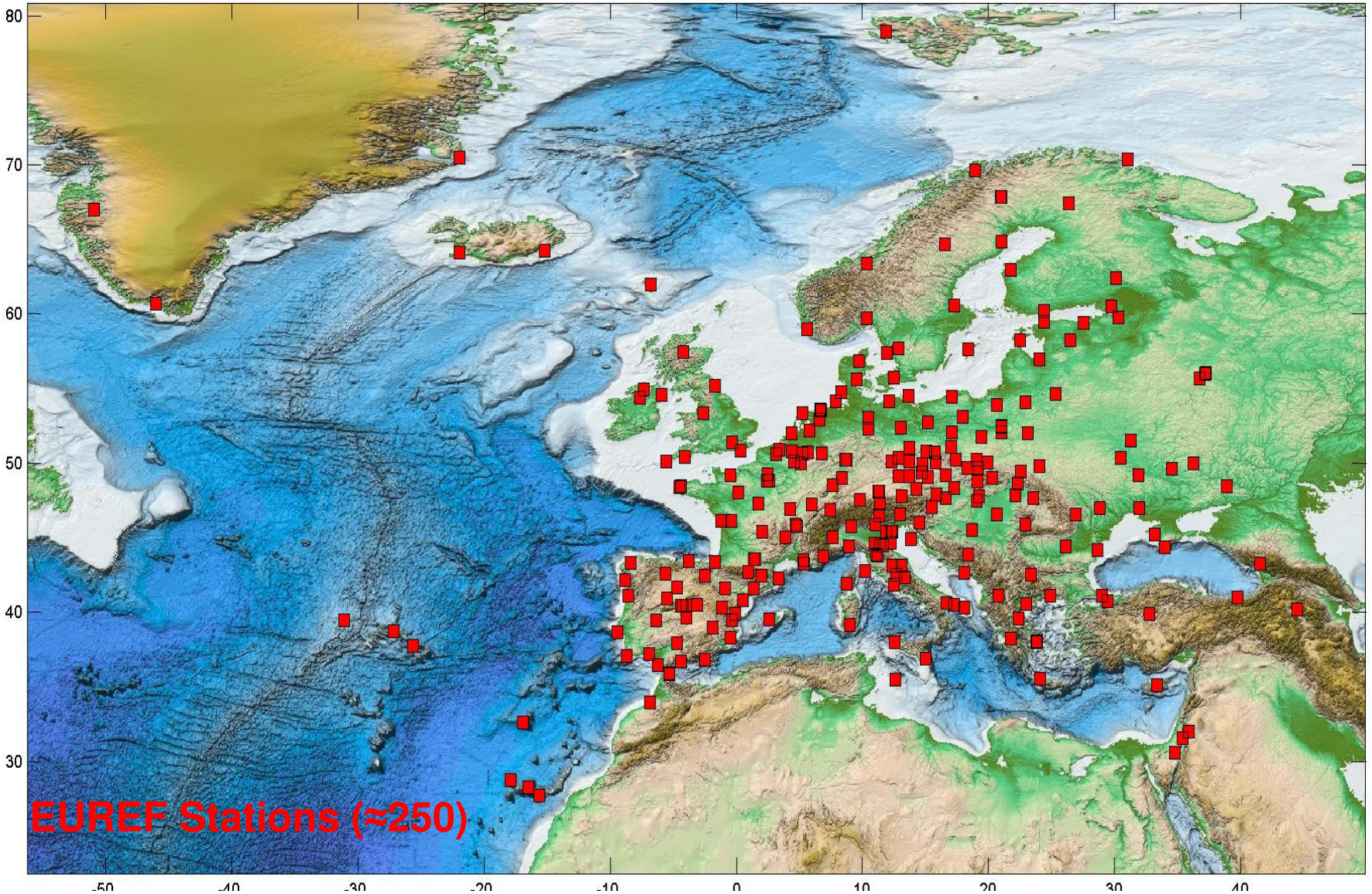


More than 230 RI questionnaires received until now

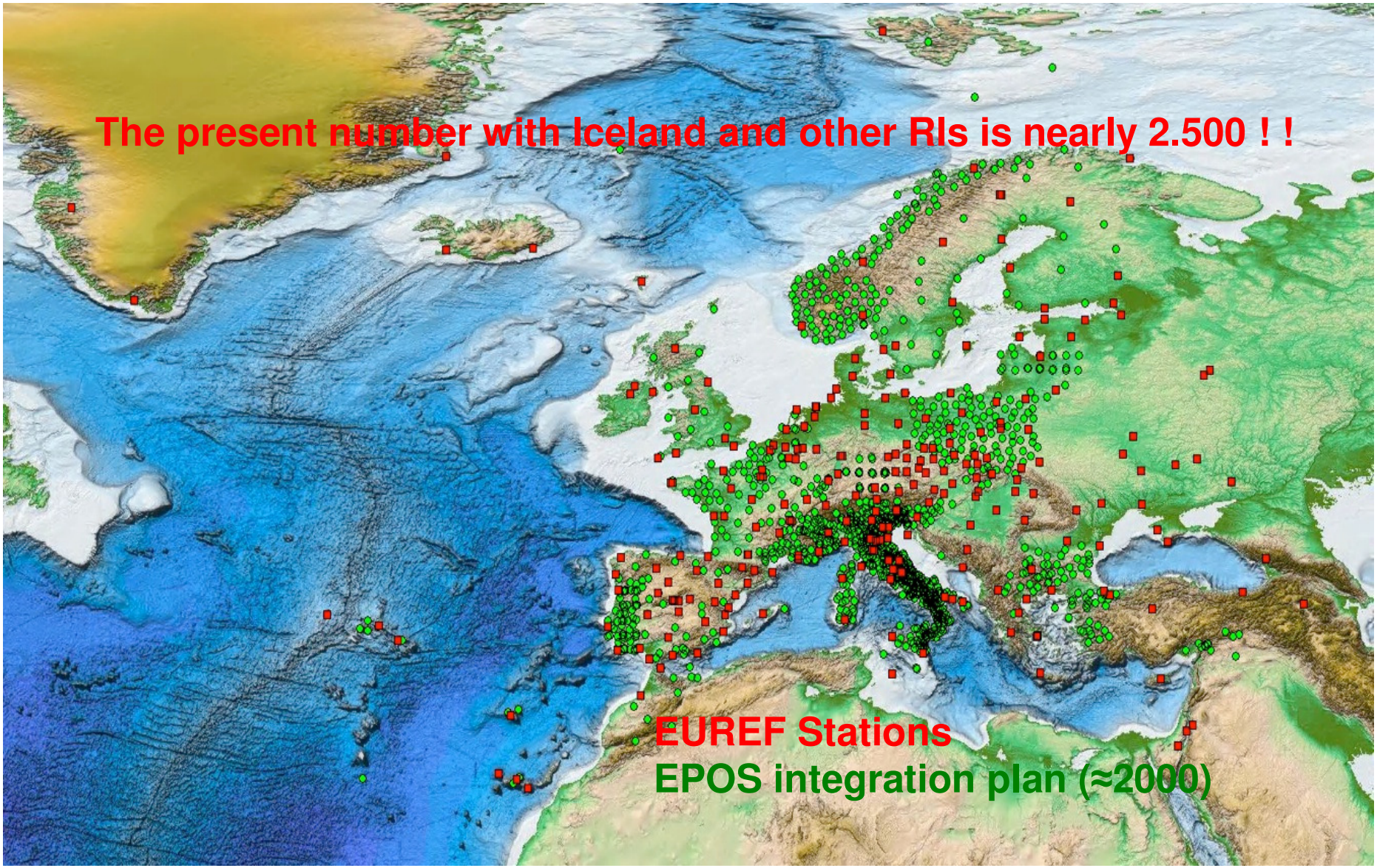
- ✓ **WG1 Seismological Observatories and RIs**
- ✓ **WG2 Volcano Observations**
- ✓ **WG3 Geological and Surface Dynamics Data**
- ✓ **WG4 Geodetic Data**
- ✓ **WG5 Other Geoscience Data**
  - ✓ **Magnetic Observatories**
  - ✓ **Infrastructures for geo-resources**
- ✓ **WG6 Analytical and Experimental Laboratories**
- ✓ **WG7 ITC and e-IR Facilities**
- ✓ **WG8 Satellite Information Data**

We are presently uploading all this information on an electronic data base (RIDE) and we plan to launch an implementation phase

EPOS: integrating GNSS networks



EPOS: integrating GNSS networks

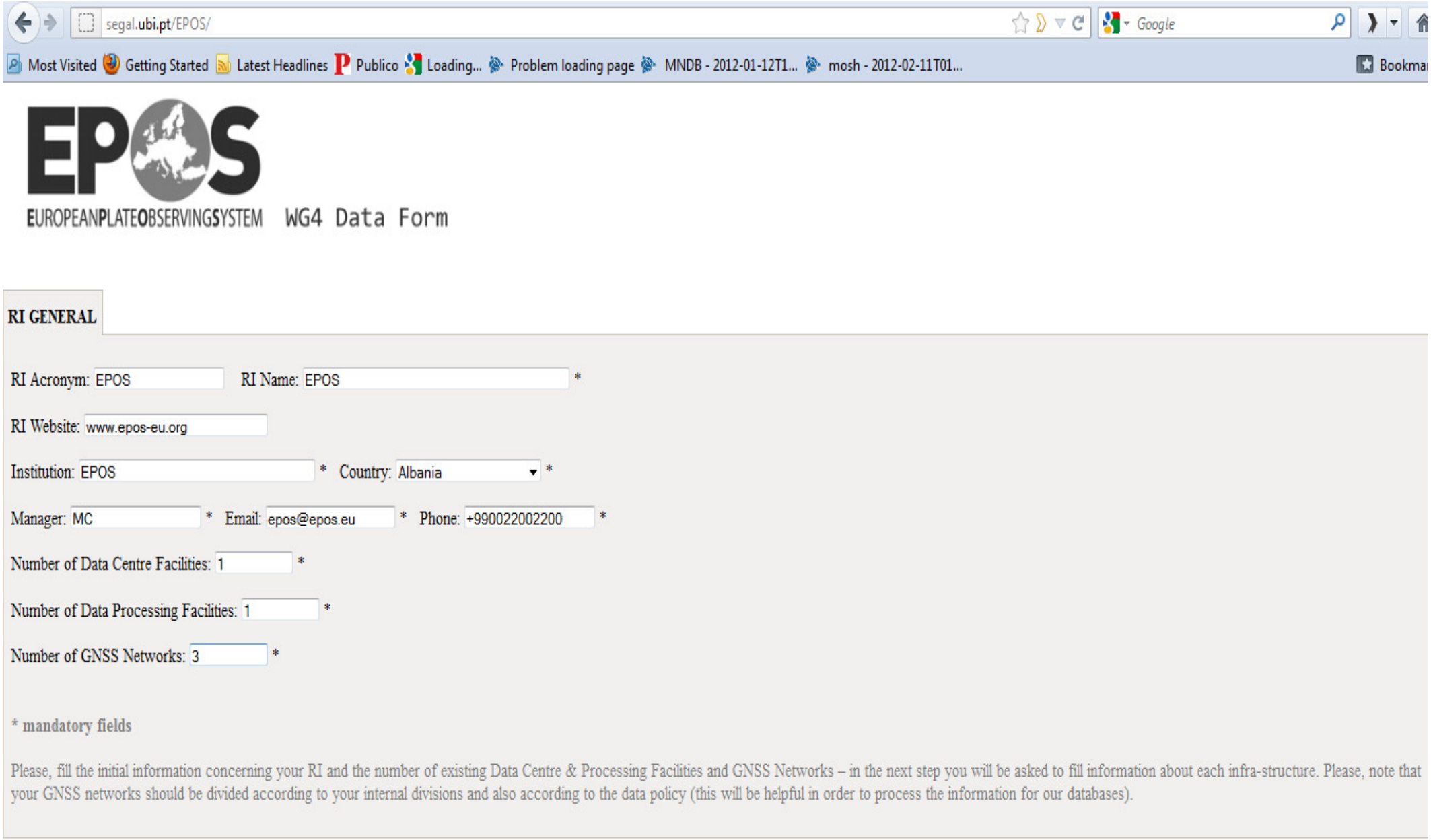


Working Group 4
GNSS data and other geodetic data

- **Main questions being addressed:**
  - **Types of data (GNSS or also others; permanent, monument, rate acquisition)?**
  - **Involvement of commercial partners?**
  - **Centralized or seamless storage? Data preservation!**
  - **Metadata handling.**
  - **Data provider or also solution provider?**
  - **Development of Tools (e.g., time-series computation)?**
  - **Cooperation with other European Projects (EUREF, E-GVAP, EUVN, etc.**

2nd Questionnaire – WG4

available at http://segal.ubi.pt/EPOS/



2nd Questionnaire – WG4

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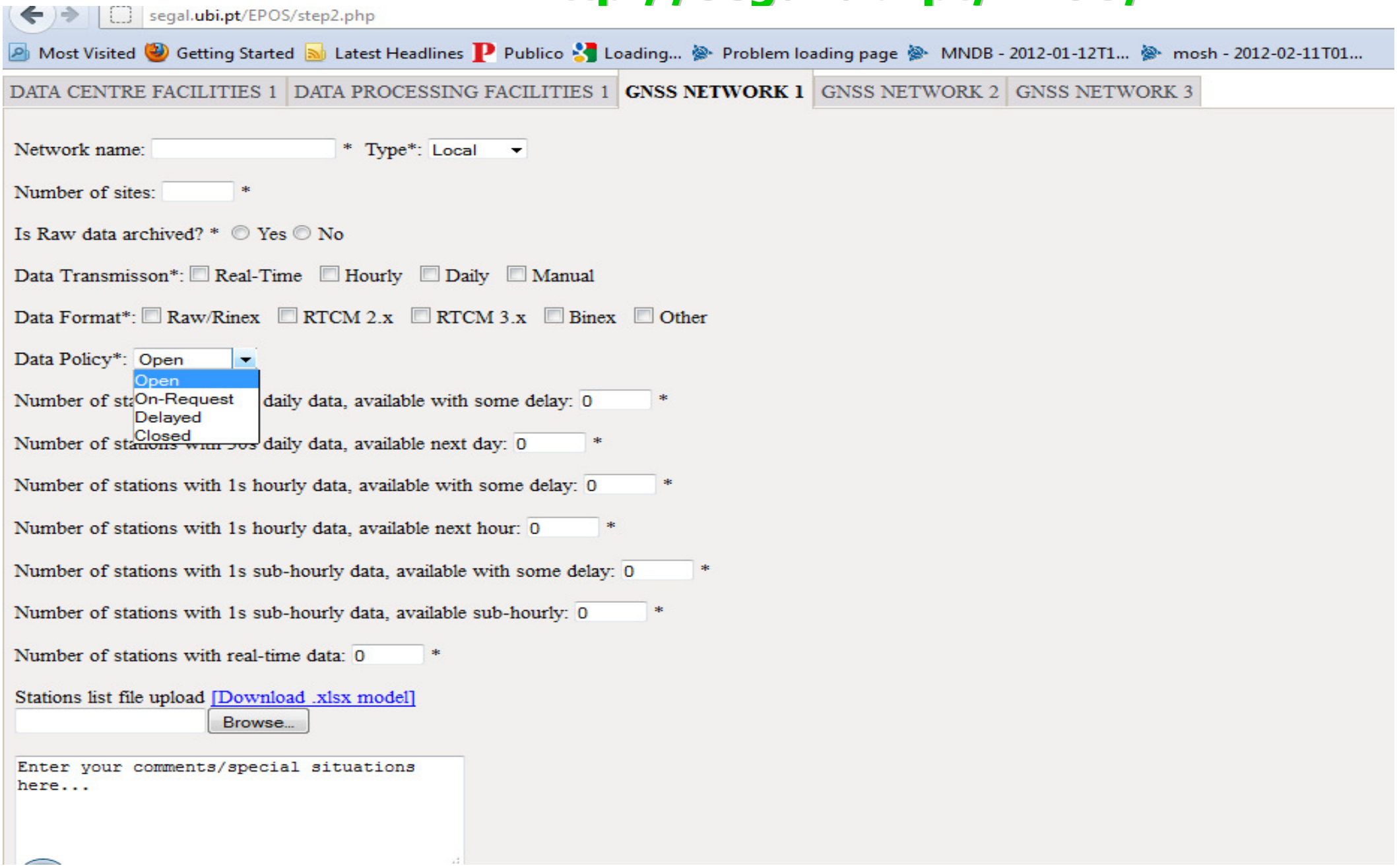
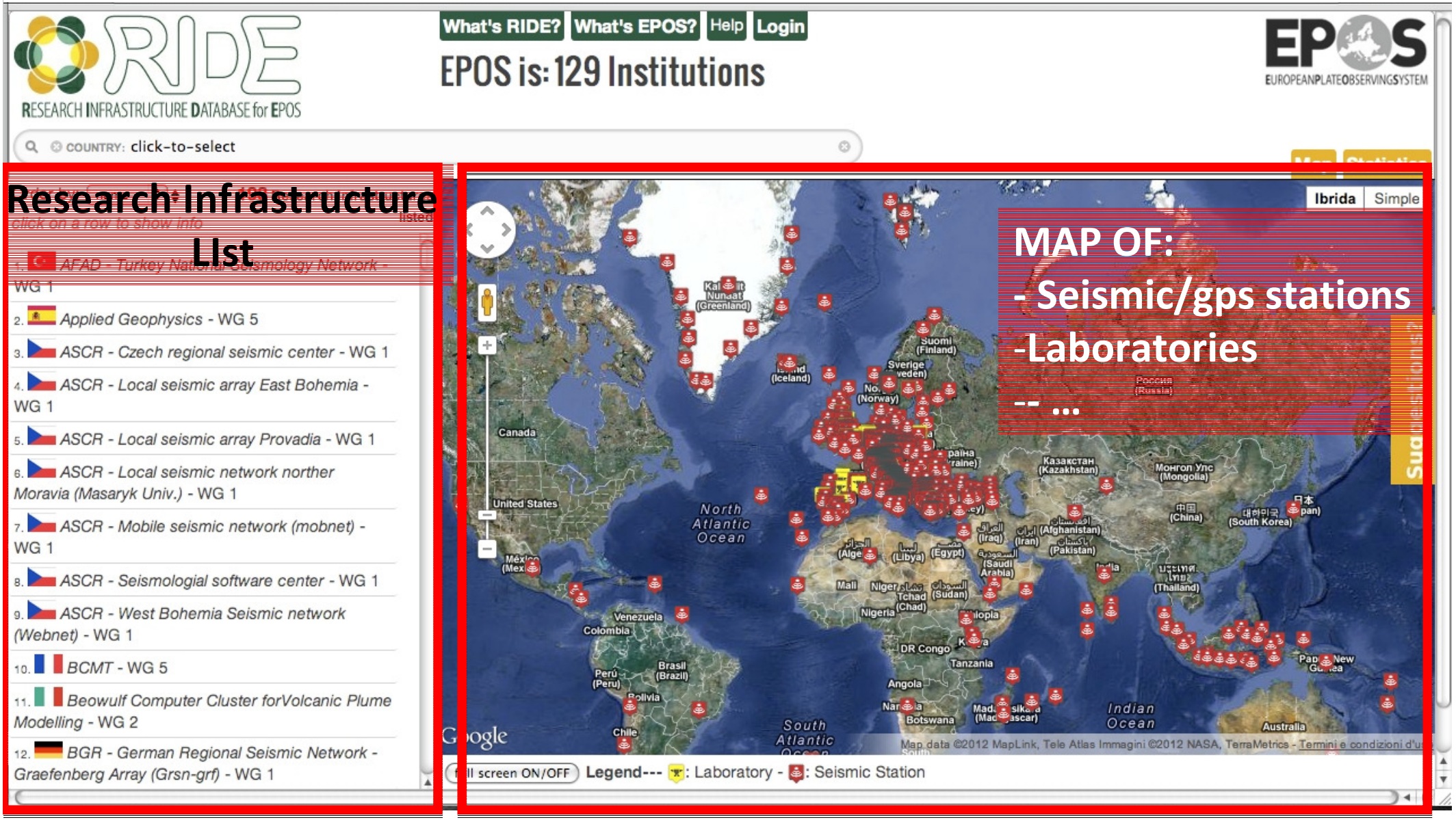


http://epos-couch.cloudant.com/epos-couch/_design/epos-couch/index.html



Thank you for attention

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