WHAT IT IS
HOW IT WORKS

ESFRI

ROAD MAP 2015 2016

Giorgio Rossi, e-IRG Workshop Roma November 10th 2014

Importance of Research Infrastructures

- Broad consensus that future competitiveness in a globalising knowledge economy depends on research capability
- Requires
  - Investment in higher education and research institutions
  - Access to first class research infrastructures
- Coordination on European (and global) scale increasingly needed because
  - Limited investment funds available
  - Increasing level of infrastructure investments (both financial and in human resources) needed to remain at the cutting edge
  - Problems require broad data sharing and networking between national nodes – distributed RIs
- RIs are Innovation and skills hubs, not (just) big machines or big datasets

today: ESFRI Roadmap 2010

Social and Cultural Innovation (5)	Health and Food (13)		Environmental Sciences (9)		Energy (7)	Analytical Facilities (6)	Physics Science and Engineering (10)		e-Infra-structures (1)
SHARE ✓	BBMRI	ELIXIR	ICOS	EURO-ARGO	ECCSEL	Euro-FEL	ELI	TIARA*	PRACE ✓
European Social Survey ✓	ECRIN	INFRA FRONTIER	LIFEWATCH	IAGOS	Wind-scanner	EMFL	SPIRAL2 ✓	CTA	
CESSDA ✓	INSTRUCT	EATRIS	EMSO	EPOS	EU-SOLARIS	European XFEL ✓	E-ELT** ✓	SKA	
CLARIN	EU-OPEN-SCREEN	EMBRC	SIOS	EISCAT_3D	JHR ✓	ESRF Upgrade ✓	KM3NeT	FAIR ✓	
DARIAH	Euro Bio-Imaging	ERINHA		COPAL	IFMIF	NEUTRON ESS	SLHC-PP*	ILC-HIGRADE*	
	ISBE	MIRRI			HiPER	ILL20/20 Upgrade ✓			
	ANAEE				MYRRHA				

*Projects from CERN's European Strategy for Particle Physics

Distributed research infrastructures

Single sited research infrastructures

Green: implemented*, *Red: 10-years expire on 2015*, *Black: stay on

New ESFRI Roadmap 2016

ESFRI mandate updated at Informal Competitiveness Council in Milano (July 2014) to complete a new Roadmap for 2016 with new criteria of selection and format

New Roadmap will contain fewer, more mature projects

It will also be more of a strategy document that analyses:

- the landscape of RIs in EU and internationally
- gaps in the EU RI ecosystem
- pan-European projects
- synergies with the national/regional projects
- synergies with existing RIs and strategies for optimal use, continuous upgrade, sustainability and end of life perspectives
- global research infrastructure opportunities

The Roadmap Process

RI proposal by Member State(s) or EIROforum organisations

ESFRI

SWG | SWG | SWG | SWG | SWG

E-IRG

Experts assigned to each SWG

- Pan-European
- Science case

IG

- Technical case
- Business case
- Overall maturity

Peer reviewers

External experts

Recommended projects and analysis of landscape

Rules for new Roadmap

- Much shorter – **only ~25 Projects** on the new Roadmap
- Projects that have been on the roadmap and not implemented will automatically roll off after 10 years
  - Any project that wants to be considered again after 10 years must reapply, either in a different form or with bottlenecks resolved
- **Room for 8-10 new projects** on the 2016 roadmap
- Entry level projects will be at a more mature level
  - conceptual design and feasibility done
  - supported by at least three MS
- Every 2-3 years audit of the project by ESFRI Implementation WG
- Opportunities to add more projects in 2018, 2020 as others roll off

Landscape Analysis: all RI offering open-access to European researchers

Drafting Groups active within the Strategy Work Groups

no-double nationalitiies in each DG

Consultation of ERANET and other relevant Roadmap

Special Expert Group(s)

experts from Europe

Preview 25/9/2014

Maps of the main RIs in the landscape

Role of ESFRI projects

Access to RI abroad

Full Landscape by end winter 2014-2015

Reference for the new projects to be selected

Final check, introduce EMERGING and PHASE-OUT project with impact

ROADMAP

ALL SWGs include an e-IRG expert

WORK IN PROGRESS

Status and Perspective of Astroparticle Physics in Europe

Astroparticle Physics Roadmap Phase I

OECD Global Science Forum

Large Research Infrastructures

Report on
Roadmapping of Large Research Infrastructures
(2008)

Report on
Establishing Large Interna
Infrastructures: Issues
(2010)

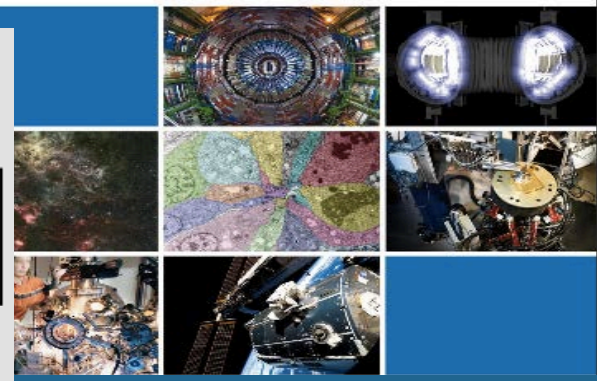
NuPECC HANDBOOK 2012

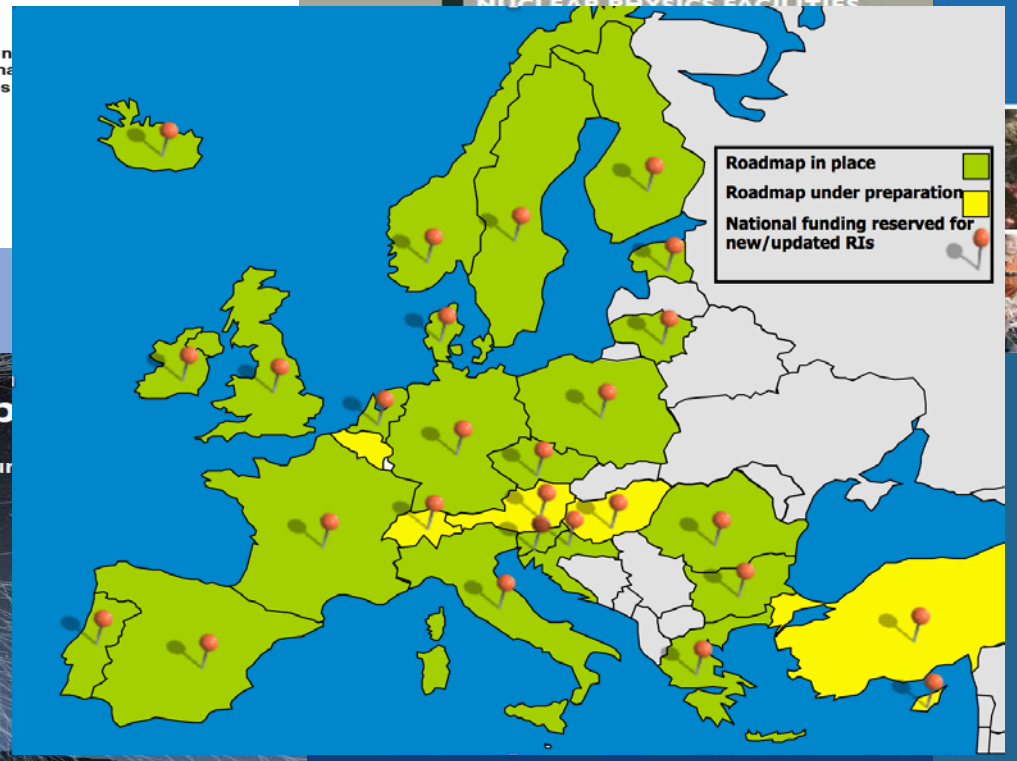
INTERNATIONAL ACCESS TO

Europe's Intergovernmental Research Organisations – a Key Pillar of the ERA

Establishing New Research Infrastructures in Europe – The EIROforum Experience

March 2010





EUROPEAN SCIENCE FOUNDATION
SETTING SCIENCE AGENDAS FOR EUROPE

FORWARD LOOK

Perspectives of Nuclear Physics in Europe

NuPECC Long Range Plan 2010

www.esf.org
www.nupecc.org

Astroparticle p

The Eur

www.aspera-eu.org

The CERN Roadmap

Frédérick Bordry

Future Circular Collider Kick-off Meeting

Geneva - 12th Febr

CERN
www.cern.ch

UNIVERSITÉ DE GENÈVE

EuCARD²

ECFA

Science Europe Roadmap

December 2013

SCIENCE EUROPE

BACKGROUND OF LA

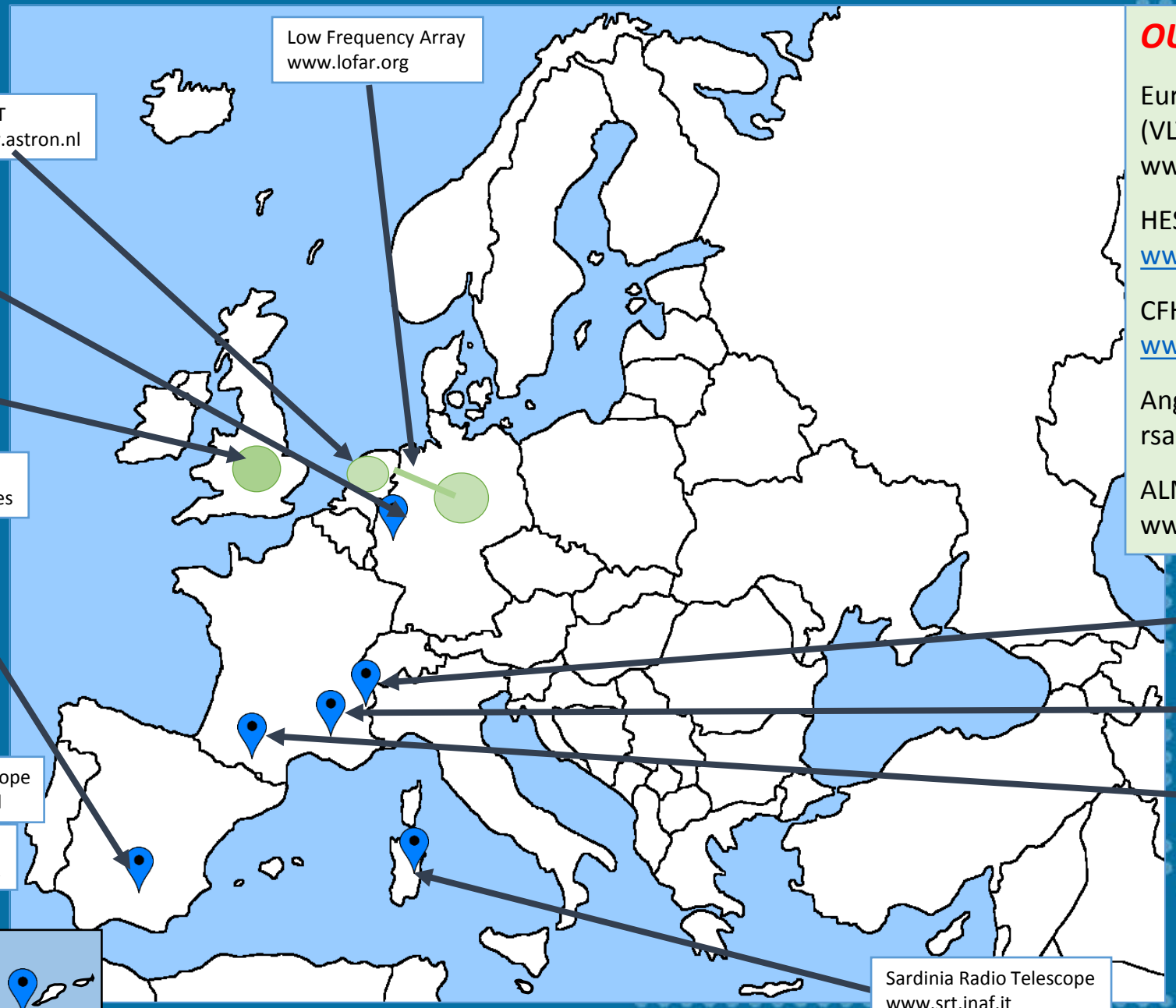
European Astronomy and Astroparticle Physics

ABELA
DONATH
GENOVA
MASIERO
HÖRANDEL
ROBSON
STARK

European astronomy and astroparticle physics remains very competitive on an international scale.

- Good long-term strategy and planning are enabled through stability of funding for ESA and ESO in particular.
- The research areas in both communities are merging together: from the investigation of solar properties up to gravity waves and the cosmic microwave background.
- There are research Infrastructures of very different scales ranging from local/national to the European/international scale, delivering breakthroughs and having a significant scientific impact with a special emphasis on the facilities on the present ESFRI roadmap.
- The Transnational Access programs have a great benefit on the scientific output in special in the astronomy community: well established access and re-use of scientific data.
- Europe must focus on continued technology development and ensure it is not reliant on outside suppliers for critical items.

European Astronomy



European VLBI Network
www.evlbi.org

WSRT
www.astron.nl

Low Frequency Array
www.lofar.org

Effelsberg
www.mpifr-bonn.mpg.de

E-MERLIN
www.e-merlin.ac.uk

IRAM Observatories
www.iram-institute.org

CAHA
www.caha.es

Gregor
www.kis.uni-freiburg.de

THEMIS
www.iac.es

Nordic Optical Telescope
www.not.iac.es

Obs. Del Teide
www.iac.es

Telescopio Nat. Galileo
www.tng.iac.es

W. Herschel Telescope
sci.esa.int/herschel

I. Newton Telescope
www.ling.iac.es

Liverpool Telescope
Telescope.livjm.ac.uk

SST/ SvST
www.solarphysics.kva.se

Gran Telescopio de Canarias
www.gtc.iac.es

OUTSIDE Europe:

Europ. Southern Obs. Chile
(VLT – E-ELT)
www.eso.org

HESS Namibia
www.mpi-hd.de/hfm/HESS

CFHT Hawaii
www.cfht.hawaii.edu

Anglo-Australian Obs.
rsaa.anu.edu.au

ALMA Chile
www.almaobservatory.org

IRAM Observatories
www.iram-institute.org

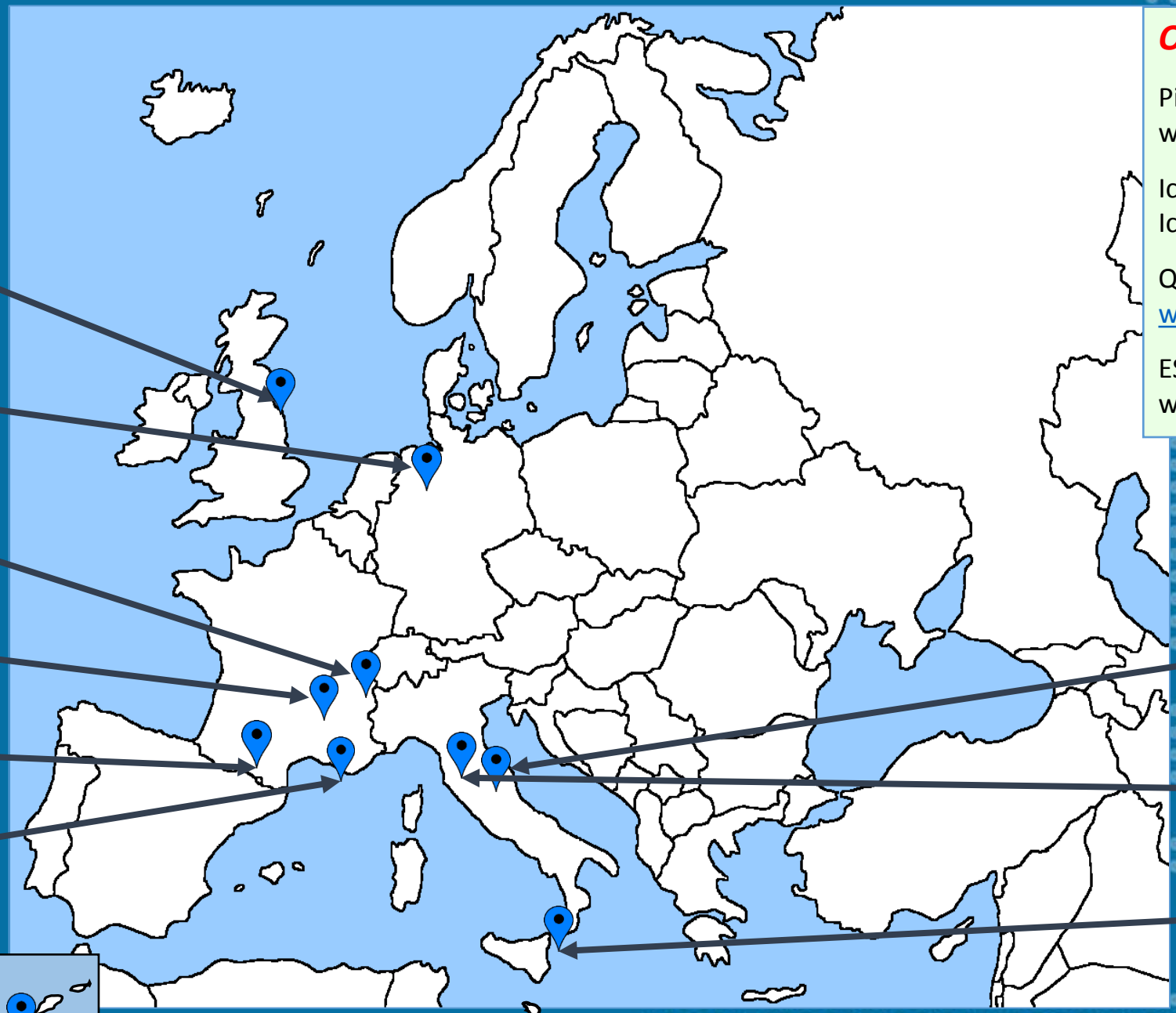
Obs. Haute Provence
www.obs-hp.fr

TBL
Spiptbl.bagn.obs-mip.fr

Sardinia Radio Telescope
www.srt.inaf.it

The map shows facilities offering TA

European Astroparticle Physics



Boulby Underground Lab.
www.stfc.ac.uk/boulby

GEO600
www.geo600.org

Lab. Sou. Modane
www-lsm.in2p3.fr

Lab. Sou. Bas Bruit
www.lscc.eu

Lab.Sub. Canfranc
www.lsc-canfranc.es

Antares
Antares.in2p3.fr

Quijote CMB
www.iac.es/proyecte/cmb

Lab. Nat. Gran Sasso
lngs.infn.it

Europ. Gravitational Obs.
www.ego-gw.it
wwwcascina.virgo.infn.it

KM3NET
www.km3net.org

OUTSIDE Europe:

Pierre Auger Lab. Argentina
www.auger.org

IceCUBE Antartica
Icecube.wisc.edu

QUBIC Antartica
www.qubic-experiment.org

ESO , Chile
www.eso.org

Analytical Facilities

DELBOURGO
PETRILLO
CLAUSEN
WECKERT
PALSTRA
HARRISON
CEH
CZITROVSZKY

- Rich set of RIs, synchrotrons, neutron sources, FELs in continuous evolution. Most national facilities fully open to transnational access, coordinated at EU level (Calipso, NMI3, Laserlab)

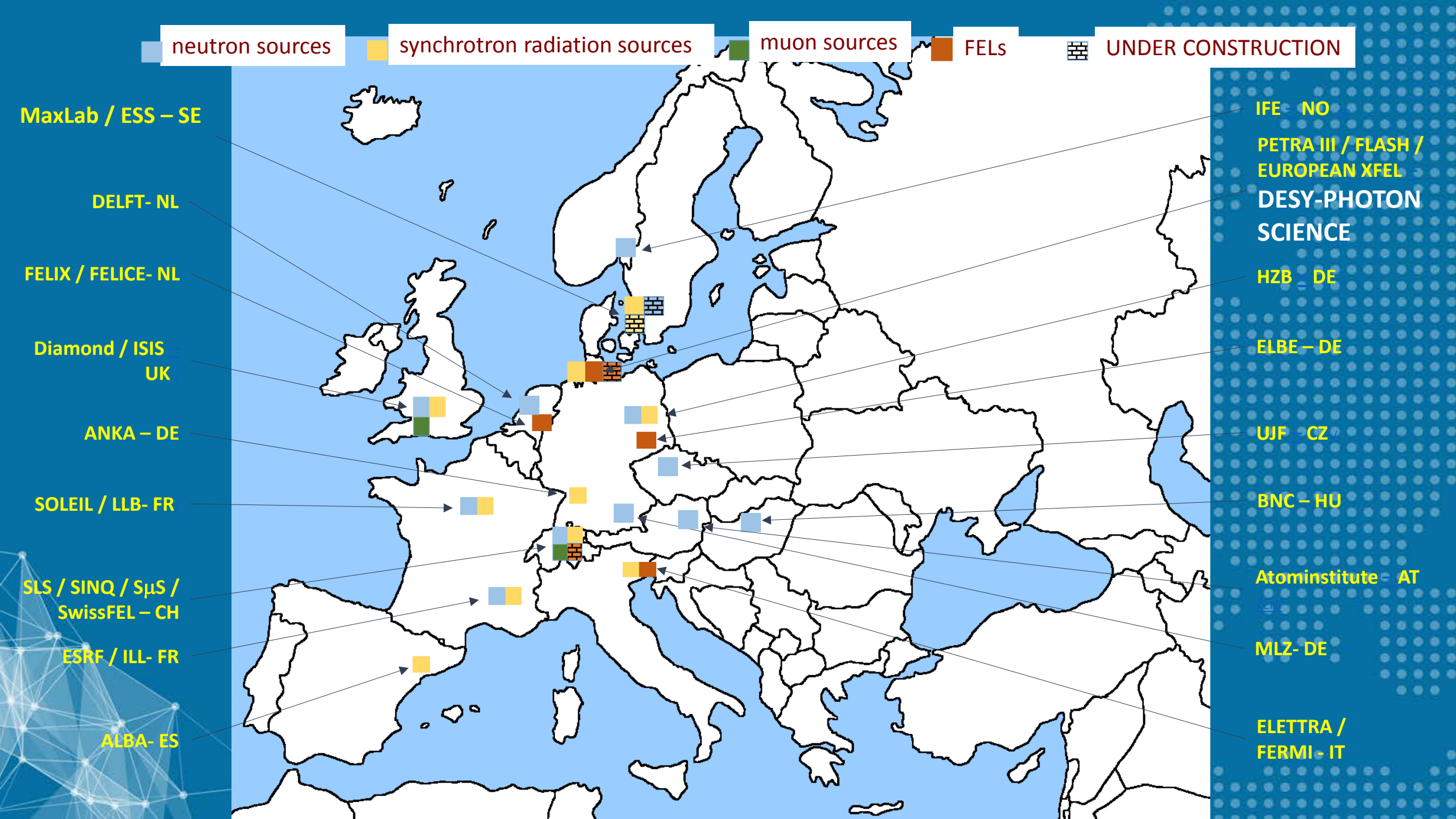
- ***Clustering*** of analytical facilities in ***large research campuses***: Grenoble, Harwell Campus, Hamburg, Trieste, Villigen, Lund, Saclay with impact on the research system and innovation.

- ***Conversion of High Energy Physics in Photon Science*** (PSI, DESY (SLAC))

- Start-up of new class of infrastructures focussing to a science programme (structural biology, nanoscience, …) based on ***complementary infrastructures well connected or co-located with Analytical Large Scale Facilites*** (PSB, BioStructX, NFFA, C-ERIC)

- Europe has a lead in the technology of accelerators and light sources, strenght in electron microscopy and laser science

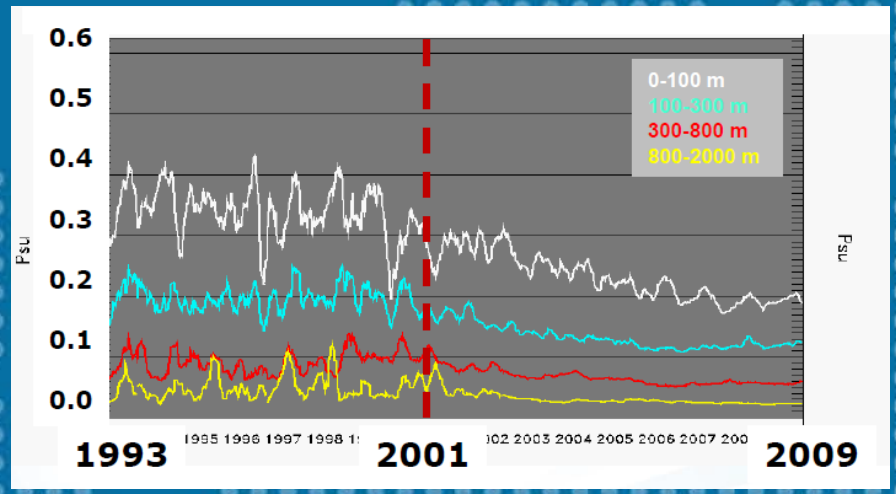
- Europe must develop a robust framework for sustainability and maximum return from investment

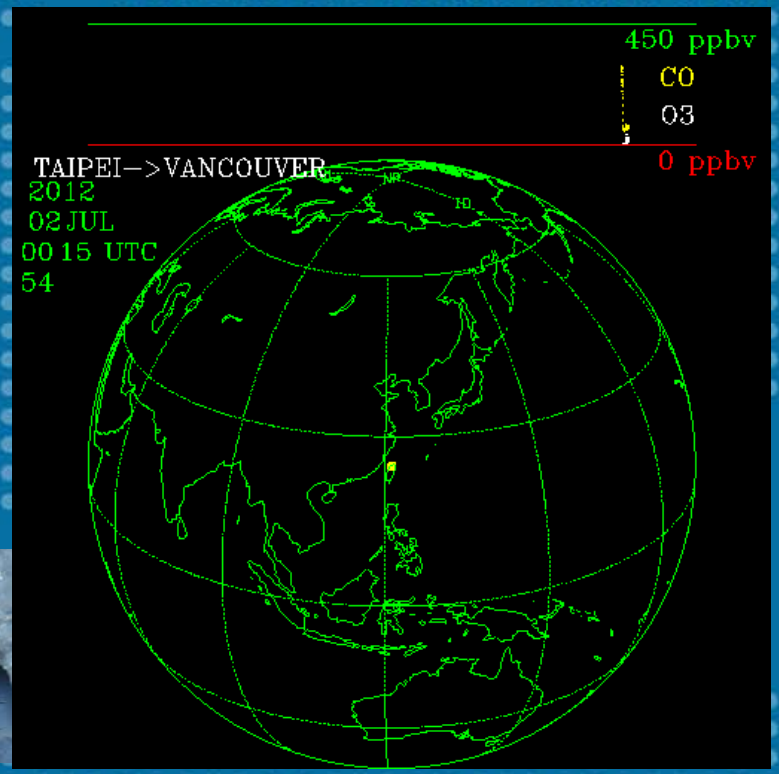

neutron sources
synchrotron radiation sources
muon sources
FELs
UNDER CONSTRUCTION
MaxLab / ESS – SE
DELFT- NL
FELIX / FELICE- NL
Diamond / ISIS – UK
ANKA – DE
SOLEIL / LLB- FR
SLS / SINQ / SμS / SwissFEL – CH
ESRF / ILL- FR
ALBA- ES
IFE – NO
PETRA III / FLASH / EUROPEAN XFEL – DESY-PHOTON SCIENCE
HZB – DE
ELBE – DE
UJF – CZ
BNC – HU
Atominstitute – AT
MLZ- DE
ELETTRA / FERMI - IT

gelsomina.pappalardo@cnr.it

ESFRI – ENV SWG

Argo has contributed to decrease by 70% the salinity 7-day error forecast in the top 100m of the ocean.





IAGOS-ERI deploys newly developed high-tech instruments for regular in-situ measurements of atmospheric chemical species (O3, CO, CO2, NOy, NOx, H2O), aerosols and cloud particles from commercial aircraft platforms.

Areas of planned EPOS expansion: infrastructures in georesources, raw materials & geohazards

- Geochemical labs
- Drilling equipment
- Underground labs
- Exploration data
- Modeling facilities
- Fault observatories

EPOS
EUROPEANPLATEOBSERVINGSYSTEM

Geological data ← OneGeology, EuroGeoSurveys, ICDP/IODP

Experimental labs

Georesources — GIGANTIS

Remote sensing ← ESA / ESRIN

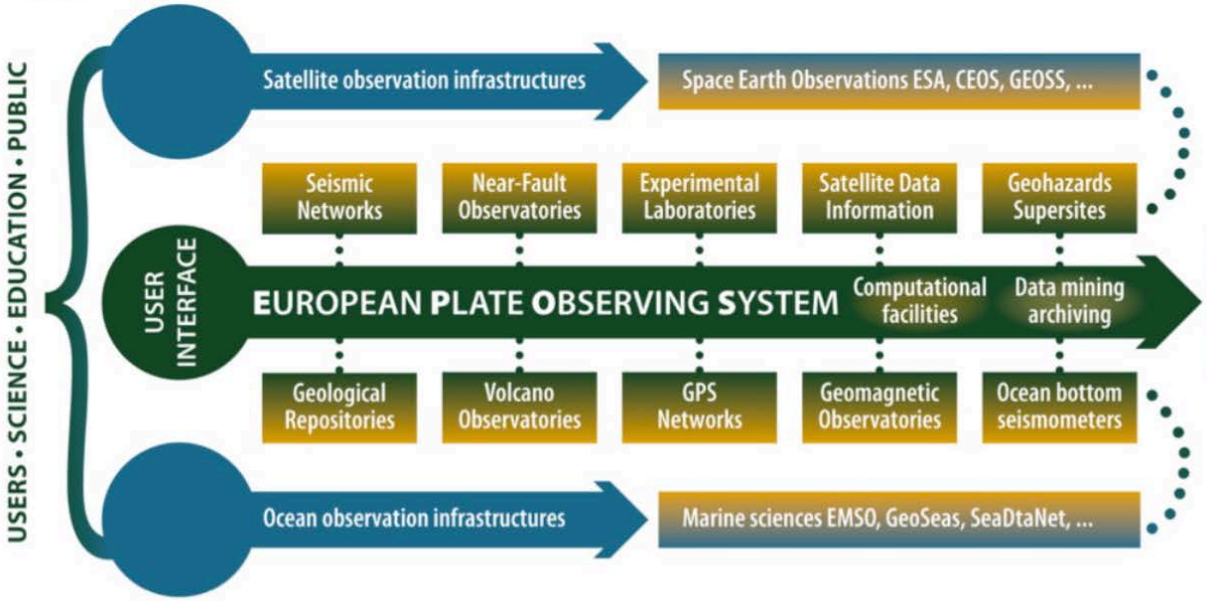
Geoagnetism ← InterMagnet

Geodesy — EUREF-GNSS

Seismology — EFEHR | EMSC | ORFEUS ← NERA

Volcanology — GEO SuperSites

EPOS integrates a large number of infrastructures and communities



23 countries involved: **20** partners,
6 associated partners,
10 Working Groups (>350 members)

Research Infrastructures involved in EPOS
RIDE database: http://www.epos-eu.org/ride/

244 RIs - value (>350M€)
annual running costs (84M€ / per year)

138 Institutions
2272 GPS receivers | **4939** seismic stations
464 TB Seismic data | **1,1** PB Storage capacity
828 instruments in **118** Laboratories

RIs for Solid Earth Science

EPOS Data, Access, and IPR policy

Guiding principles: – open access
– licensing
– no charges

Protect EPOS legally | Unrestricted use & access | Trace EPOS use & users

Balance: Legal risk : Openness : Traceability

Licensing
IPR
Terms & Conditions
Restrictions

Data & Service **Providers** → Open Access deposit terms → EPOS → Open Access license → Data & Service **Users**

Categorization
as needed for legal aspects

Data & Data Products
Level 0,1, 2, 3

Tools & Software

Open : Restricted : Embargoed

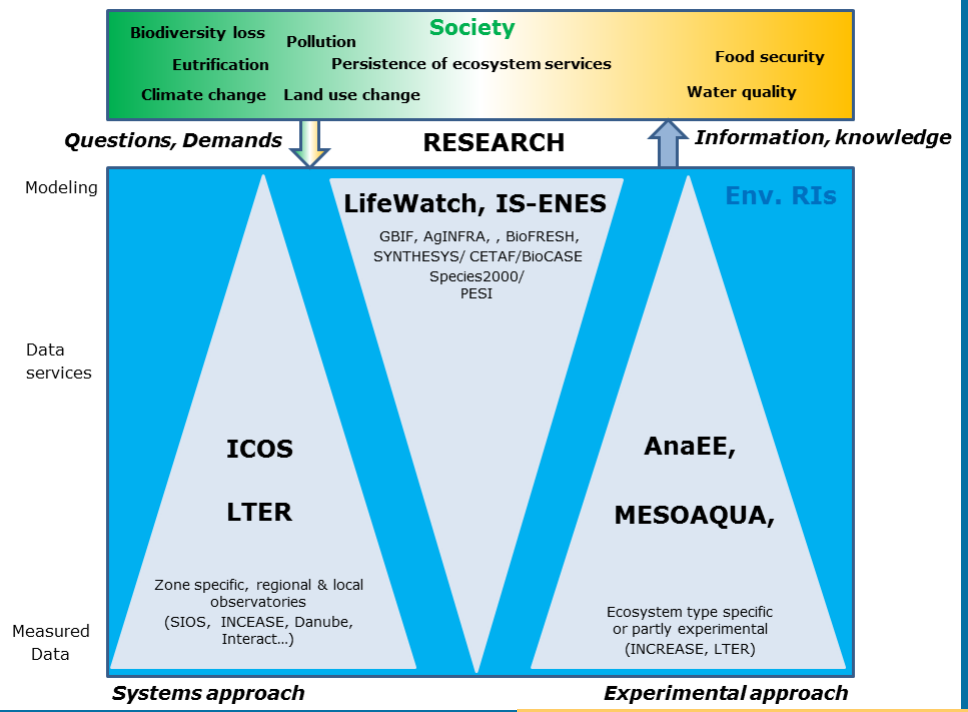
mix and match as required

Anonymous : Registered : Authorized

Users

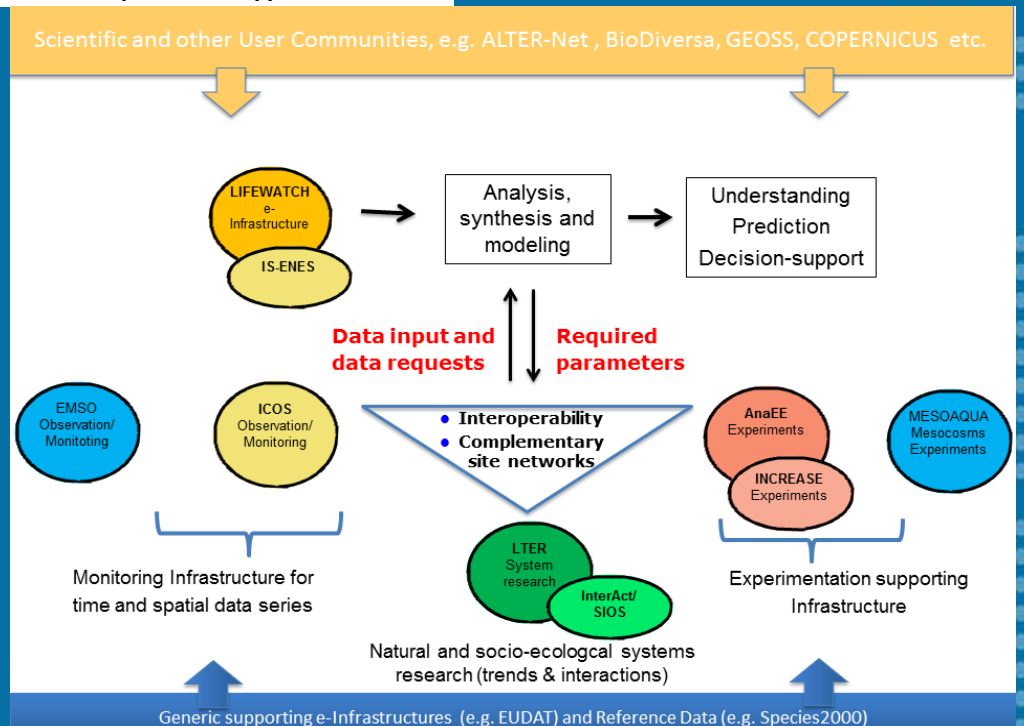
www.epos-eu.org

RIs for Biodiversity and Ecosystems



Environment RIs is a complex system with different components (atmosphere, ocean, land, solid-Earth, biodiversity and ecosystems; and all strongly linked and interdependent) and a multidisciplinary approach is needed.

All the RIs in the environmental domain are distributed, as expected by nature reflecting the diversity of the geographical areas.



It is therefore important to bring the existing RIs to work together, to cluster, and ensure that new RIs complete the existing ones in order to make efficient use of sparse resources.

Gabriela Pastori
Head European Relations
Biotechnology and Biological Sciences Research Council, UK

Health and Food Research Infrastructures

...are contributing to building the European Research Area:

- Pan-European **open access** to cutting-edge technology platforms for academia and industry
- Interdisciplinary research across Europe, **harmonising and standardising** the research landscape and reducing fragmentation
- Translating findings from **basic science to new applications** in health, food and bioeconomy sectors
- High **interoperability** of research processes, creating seamless value chains
- **Opportunities** to maximise the competitiveness of Europe's knowledge-based industry – e.g. the pharmaceutical and biotechnology industries
- **Training and education** to future professionals in the life sciences;
- Attracting and retaining **world-leading scientists**
- **International impact** and outreach
- Helping co-ordinate national RI **budgets and leveraging** additional MS investments

Biological Sciences

Biological Resources Production Systems

Medical Sciences

Bioinformatics

Functional Genomics in the Mouse

Clinical Research

Translational Medicine

Biobanking

Structural Biology

Marine Biology

High Security Labs

Imaging

Chemical Biology

Systems Biology

Agri-ecosystems

Biorepositories - Microorganisms

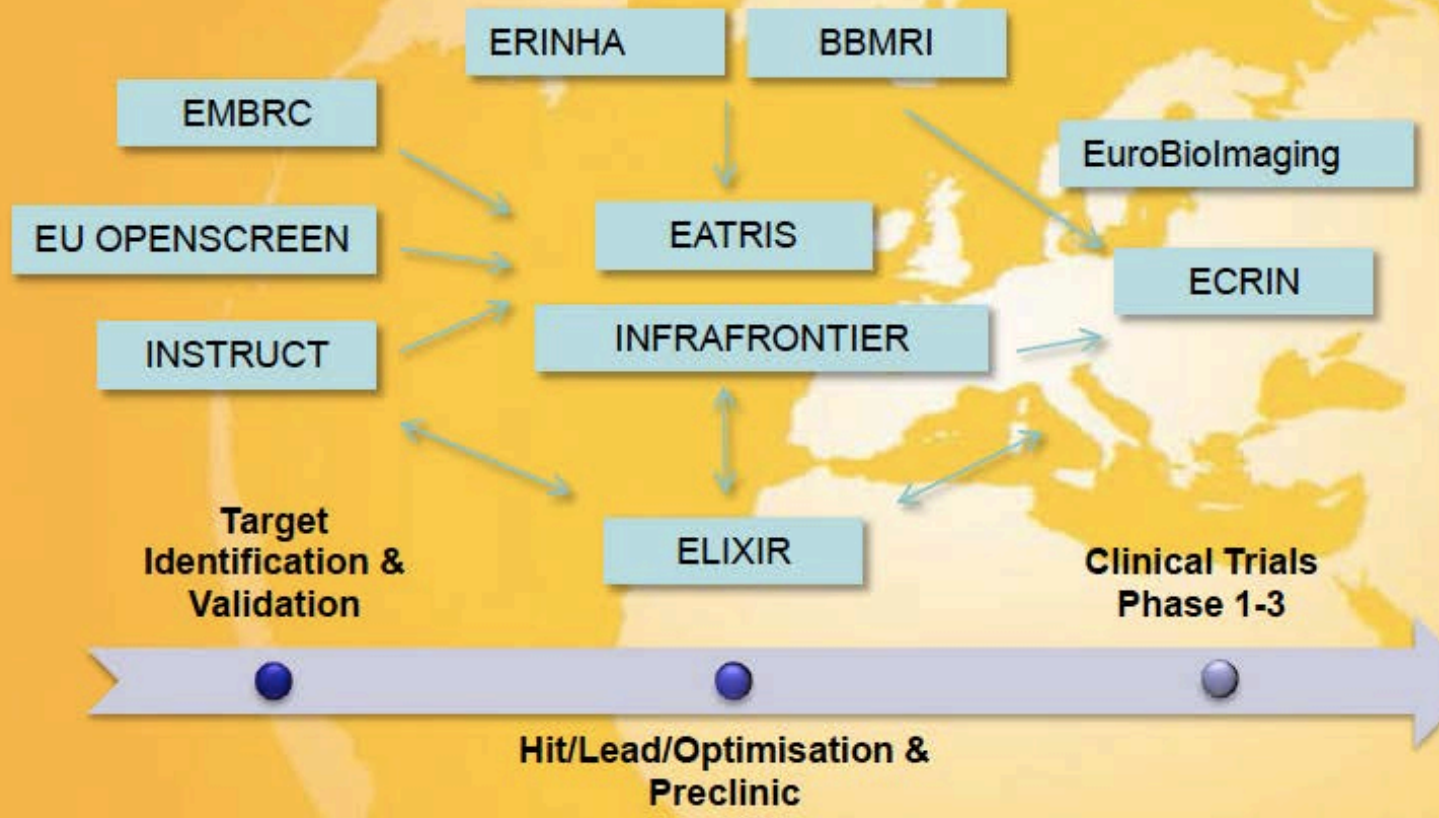
1st generation RI

2nd generation RI

3rd generation RI

Health and Food Research Infrastructures

Landscape in action – drug development as an example



Customized healthcare

Personalized medicine and healthy ageing

Transition phase: from a one-size-fits-all to tailoring the needs of the individual

Pharmacogenetics* - 250,000 admitted to hospital in UK per year due to adverse reactions to commonly prescribed drugs
- costs to NHS approx. £466 million annually

Driven by and relying on large and heterogeneous data
- laboratory and clinic, and by citizens and patients!

Already beginning to be met by **Health and Food RIs**

Increasingly tailored interventions will require effective, agile, integrated services throughout, e.g. new clinical trial designs shifting in focus from population to individuals.

BioMedBridges , a €10m project funded by the EC until December 2015, is a joint effort of twelve health and food RIs to develop shared e-infrastructure to allow data integration in the biological, medical, translational and clinical domain

Sustainable and healthy food

Global demand for food is predicted to increase **50% by 2030 and 100% by 2050**

Global food security crisis - direct impact on and by Europe's population and economy

Europe

- Crops yield declined in the past 20y
- Extreme climatic events (2003) led to 36 bn Euros in economic losses for the agriculture sector *
- Impact on environment - crops and livestock production increases CO_2 emissions in EU and elsewhere; impact on land.

We need to produce more food, using less water, energy and chemical inputs

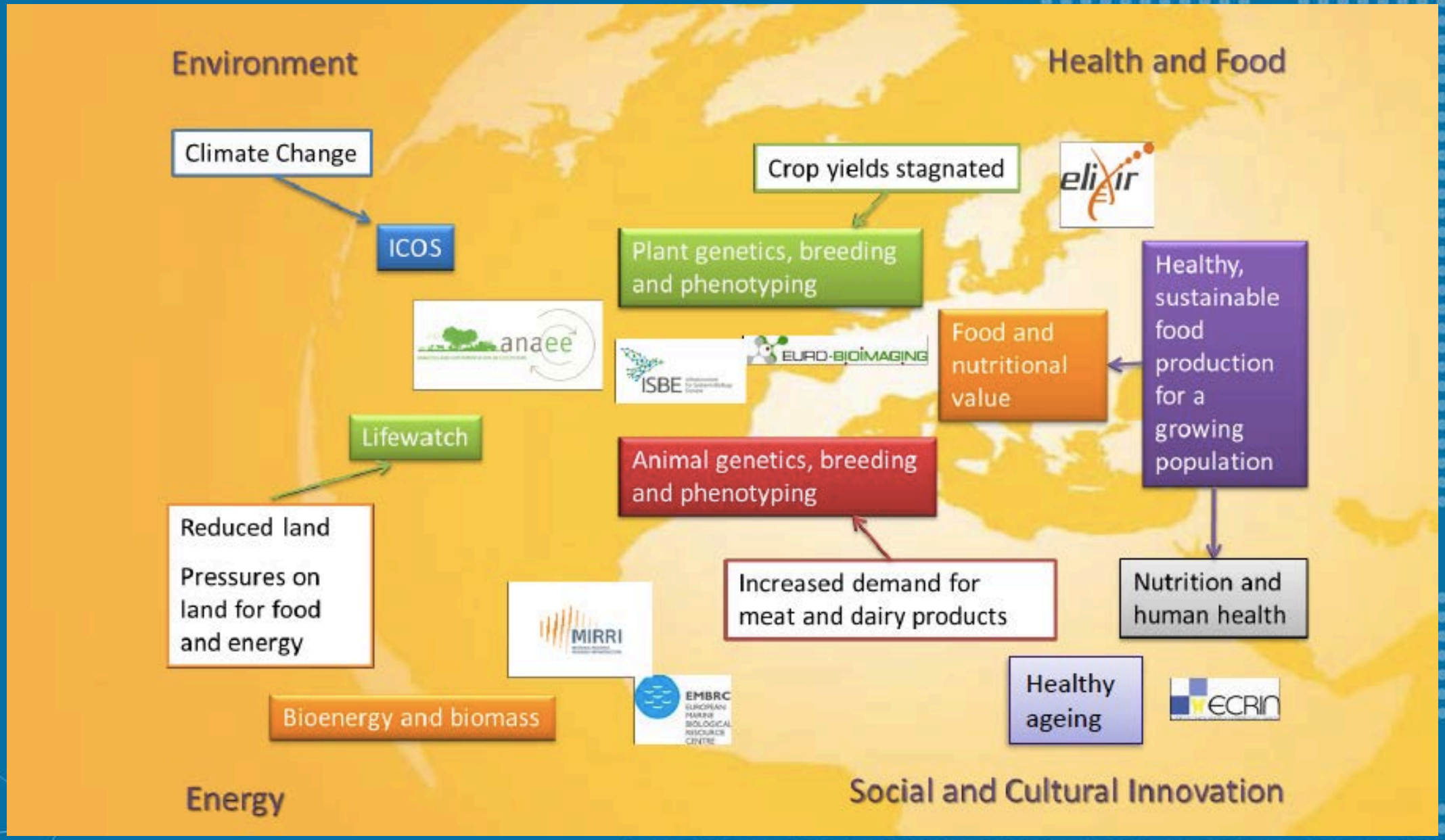
Food security is also about improving nutritional and health benefits of foods, and making it accessible and affordable, globally.

Europe is well placed to establish and integrate key European infrastructures

Integrating scenarios, observations, experiments and models for the development of food-value chain, agro-ecological and socio-economic projections with fewer uncertainties.

Unlocking non-food systems: biorenewables, bioenergy, bioeconomy

CONNECTIONS BETWEEN RIs



ENERGY Research Infrastructures

Ricardo Migueis

Chair, ESFRI ENERGY SWG

Foundation for Science and Technology, Portugal

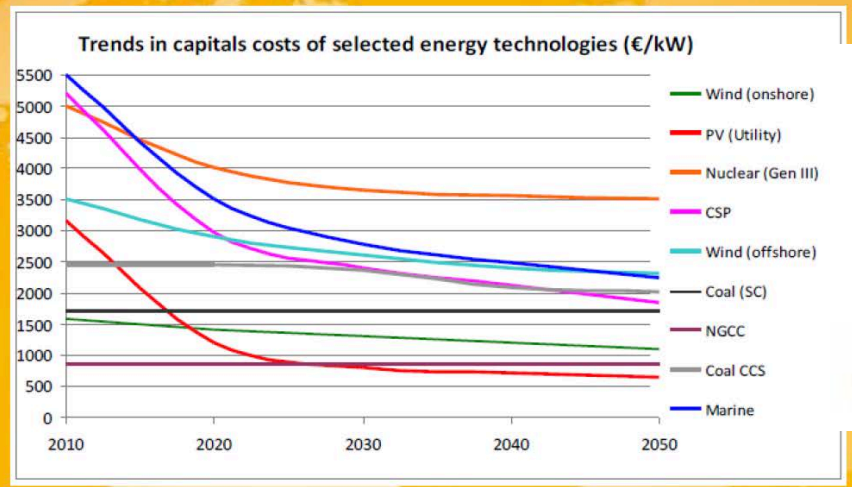
ricardo.migueis@fct.pt

SET-Plan – The European Strategic Energy Technology Plan
Establishes an energy technology policy for Europe

Focus on accelerating the development of cost effective low carbon technologies

Trends in capital costs of energy technologies are decreasing

Source: EC Coordination Group – SET-Plan Integrated Roadmap Meetings



SET-Plan Integrated Roadmap

(1) address energy system and innovation chain integration

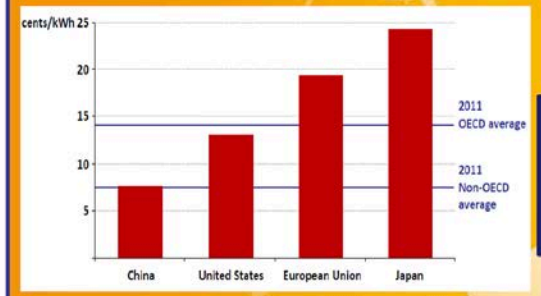
(2) consolidate the (up-dated) technology roadmaps of the SET Plan

(3) cover the entire research and innovation

(4) identify clear roles and tasks for the various stakeholders

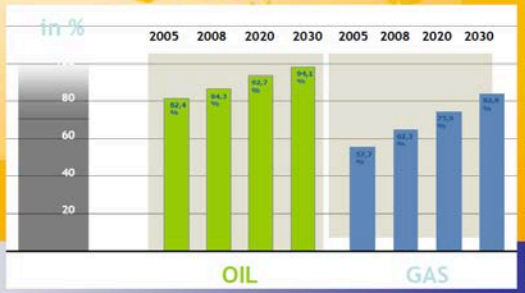
Impact of the economic crisis

Global supply – increased energy demand and competition



Energy prices set to increase with highest prices to persist in EU and Japan, well above China and US

Security of supply – import dependency of the EU as a whole is increasing



Under Construction

JHR – Jules Horowitz Reactor
Host country: France (Cadarache)

A new Material Testing Reactor (MTR) to support operation of existing power reactors fleets and qualification of future technologies systems.

JHR will also be used for nuclear medicine. It will supply hospitals with short-lived radioisotopes used for medical imaging or therapeutic purposes.

Research Institutes:
CIEMAT (Spain); SCK (Belgium); NRI (Czech Republic); VTT (Finland); the French Atomic Energy Commission (CEA) (France); IAEC (Israel); DAE (India); JAEA (Japan);NNL (United Kingdom)

Utilities and Industrial Partners: "Electricité de France" (EDF); AREVA; VATTENFALL

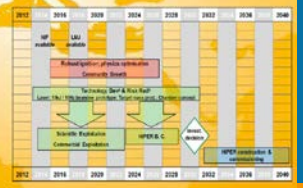
IFMIF

A multipurpose fast spectrum irradiation facility (using an Accelerator Driven reactor system) strongly embedded in EURATOM framework programme activities.

Addresses the SET-Plan European Sustainable Nuclear Industrial Initiative (ESNII).

HiPER

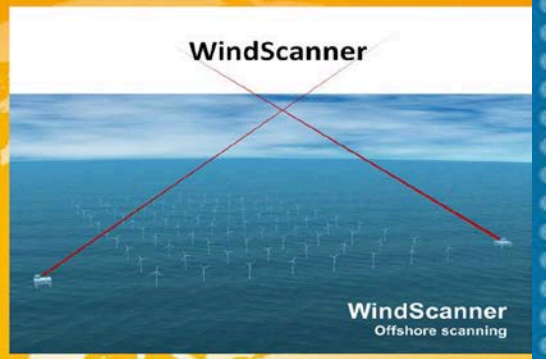
Finished its Preparatory Phase in April 2013. Main aim of the Preparatory Phase was building of the European Laser Energy community, definition of the path to a full Laser Energy system solution, leading to the construction of a machine capable of advanced ignition physics demonstrations in this decade. Project was re-scoped to pursue a programme of ignition physics investigations at existing facilities.

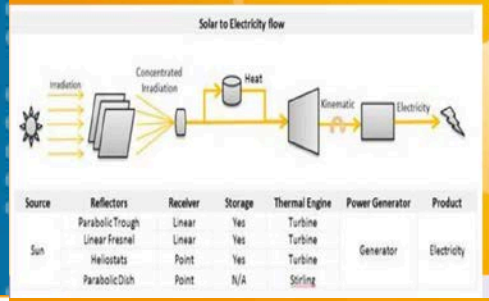


From 2010 Roadmap

WINDSCANNER

A network between distributed WindScanner research and demonstration nodes embedded within leading European energy research organisations. The participants are all partners of the European Energy Research Alliance (EERA) and the WindScanner vision is to develop a European RI that underpins the EERA Joint Programme on Wind Energy. The Preparatory Phase of the project began on 1 October 2012





Source	Reflectors	Receiver	Storage	Thermal Engine	Power Generator	Product
Sun	Parabolic Trough	Linear	Yes	Turbine	Generator	Electricity
	Linear Fresnel	Linear	Yes	Turbine		
	Heliostats	Point	Yes	Turbine		
	Parabolic Dish	Point	N/A	Stirling		

EU-SOLARIS

The project has only recently entered the EU funded Preparatory Phase (November 2012), and is funded through to 2016. The host institution is the Centro Tecnológico Avanzado de Energías Renovables (CTAER) of Spain and partner countries include Cyprus, Germany, France, Israel, Turkey, Italy, Greece, and Portugal. Addresses the concentrated solar thermal (CST) and Solar Chemistry technologies domain.

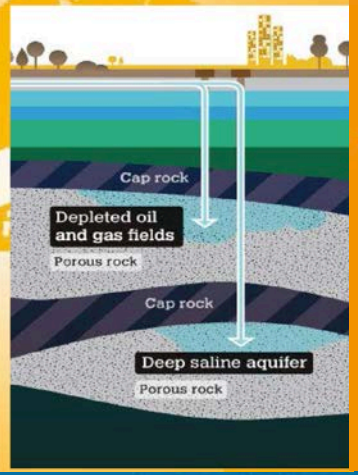
From 2008 Roadmap

ECCSEL

The European Carbon dioxide Capture and StoragE Laboratory. Carbon Capture, Transport and Storage (CCS) is a powerful tool in climate change mitigation and is an integral part of the SET Plan and the ongoing development of the SET Plan Integrated Roadmap.

The ECCSEL RI will be developed in two layers, one layer consisting of distributed complimentary laboratories and one layer of large pilots and demo sites.

ERIC is in preparation. ECCSEL was recommended for pre-implementation funding under the H2020 Infradev-2 call.



MYRRHA

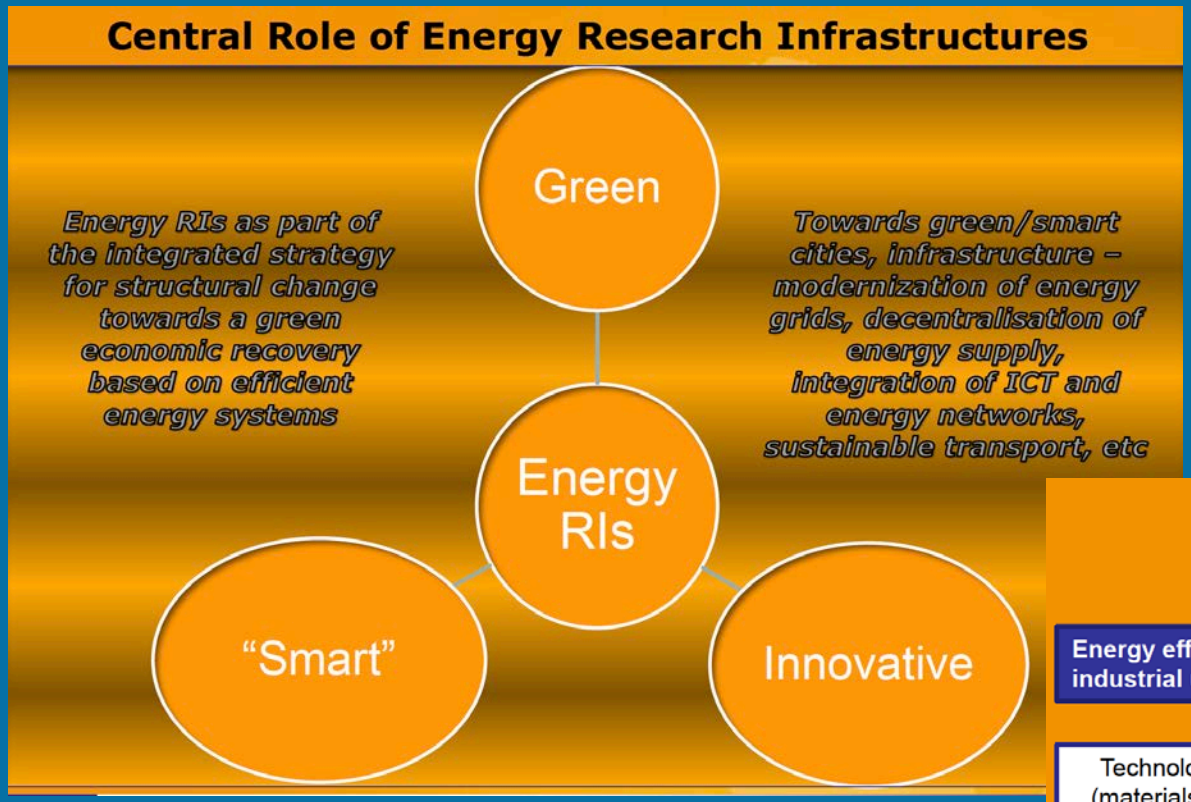
A multipurpose fast spectrum irradiation facility (using an Accelerator Driven reactor system) strongly embedded in EURATOM framework programme activities.

Serves across the whole innovation cycle, from research to high tech applications.

Addresses the SET-Plan European Sustainable Nuclear Industrial Initiative (ESNII).

The detailed engineering design of the facility should be completed in 2014 and the facility is expected to be operational by 2023.

Central Role of Energy Research Infrastructures



Landscape of RIs for Efficient Energy Conversion and Use

DIRECTIVE 2012/27/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC

Energy efficiency and industrial use of energy

Key objective of EU Energy and climate policy (Energy Efficiency Directive – increase energy efficiency by 30% - target for 2030)

EUROPEAN COMMISSION

Brussels, 8.3.2011 COM(2011) 109 final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

Energy Efficiency Plan 2011

Technology related issues (materials, products, waste, ICT)
&
Non-technology issues (market design, effective functioning)

Driver for secure, sustainable, cost-effective and low carbon energy system

Key topics include: Buildings, Heating and Cooling, Industry products and services

2013 SET-Plan Technology Map – cement, iron, steel, pulp and paper industries as crucial to help achieving EU's CO_2 emission reduction target

EU FP Programmes such as SPIRE PPP (Sustainable Process Industry through resource and energy efficiency) have an integrating effect in MS R&D programmes

SPIRE Sustainable Process Industry through Resource and Energy Efficiency

ICT - major role in supporting optimisation of energy consumption

Data is the tool of smart cities

Relate to energy use profiles in homes, hospitals, schools, swimming pools, industry - other metadata collected: occupancy rates, ambient temperatures, transport requirements, industrial heat demand, etc.

↔

Build on existing infrastructure, and this infrastructure must be made smarter and be intelligently connected through smart communications.

↔

Smart Cities and Communities

Some pilot and demonstration projects throughout Europe (BRE, UK; IERC, IE; ZEB, NO)

Research Infrastructures for Social and Cultural Innovation

Jacques Dubucs
SCI SWG

- Scope
  - Social, behavioral and economic sciences
  - Humanities
  - Cultural Heritage studies
- Objectives
  - Scientific research challenges in Human and Social Sciences
  - Socio-economic impact
  - Social innovation, e.g.
    - Improvement of social attitudes towards energy
    - Understanding of emerging behaviors w.r.t. aging

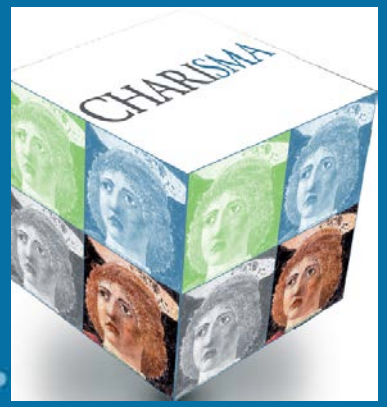
SHARE ERIC

cessda

- Distributed, not single-sited, infrastructures
- Data infrastructures
  - Administrative data (CESSDA)
  - Representational and ideological data (ESS)
  - Linguistic corpora (CLARIN)
  - Data arising from digitization of Cultural Heritage (historical archives, 3D-images of archeological monuments, textual and iconographic corpora, a.s.o) (DARIAH, ...)
  - Aging and retirement data (SHARE)
- Importance of dynamic data (longitudinal surveys) for evidence-based policy making

- Geographic coverage : European exhaustivity requested (contrast with RIs for physics)
- Multilingualism
  - Textual data in many languages
  - Conceptual calibration of surveys across Europe (e.g. SHARE : what do 'crisis' or 'well-being' mean in several countries)
- Sustainability
  - Funding
  - Human resources (importance of training)

- Need of *extending* existing SCI RIs
- Need of *connecting* existing SCI RIs
- Need of *cross-connecting* SCI RIs with RIs in other domains



SCI RIs - Emerging Dynamics

Crossing domains for RI's

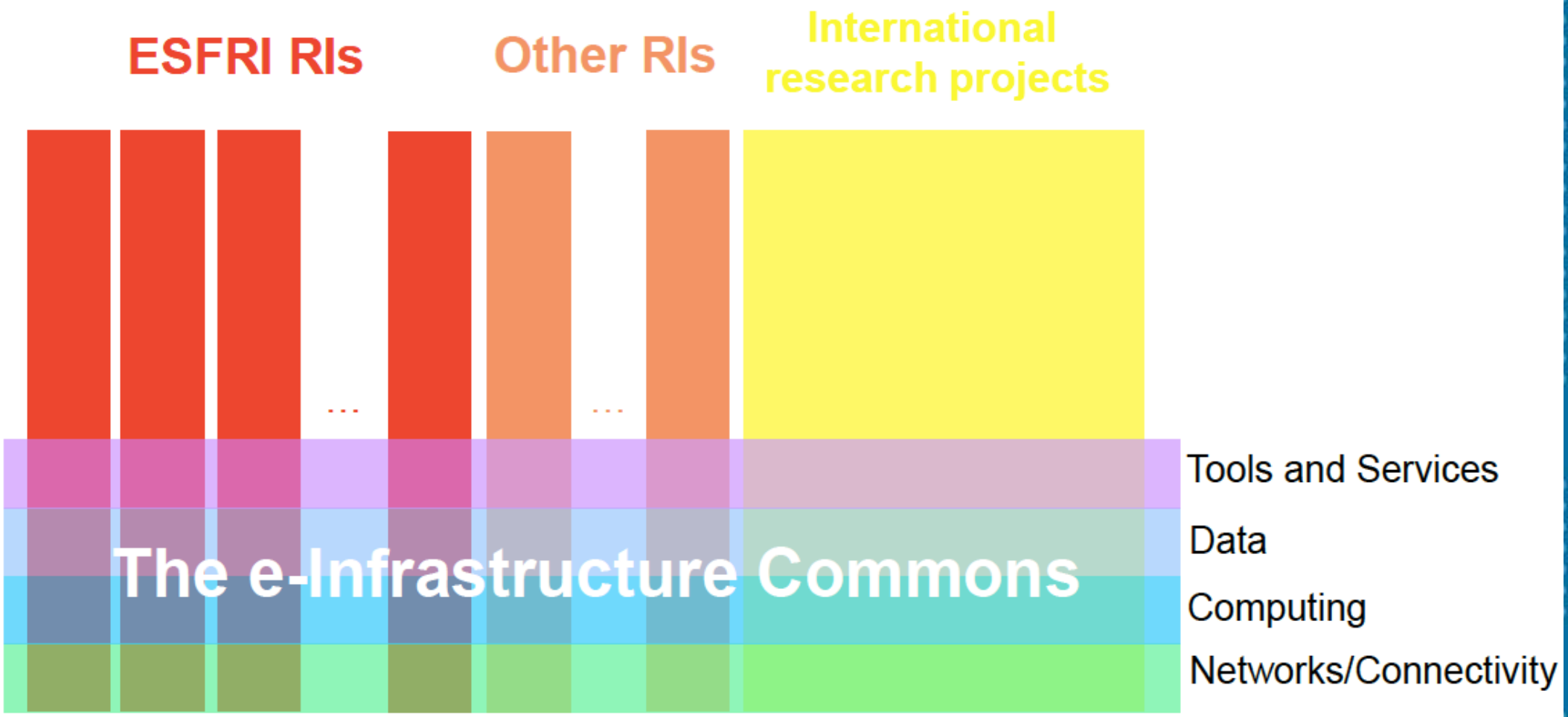
Main idea : Physics/SSH/Life and Environmental Sciences triangulation

Two possible perspectives in this mood

- **Physics/SSH** : Extending the SSH/Physics interaction beyond the domain of the cultural artifacts : "Natural Heritage" (fossils, etc) could be profitably included in the study of Heritage
- **Life Sciences/SSH** : Articulating data about health and data about social determinants of health, to put scientists in a position of dealing with *hybrid* causation (e.g. Obesity Challenge

The e-Infrastructure Commons (a simplified view…)

e-IRG



Integration of Research Infrastructures

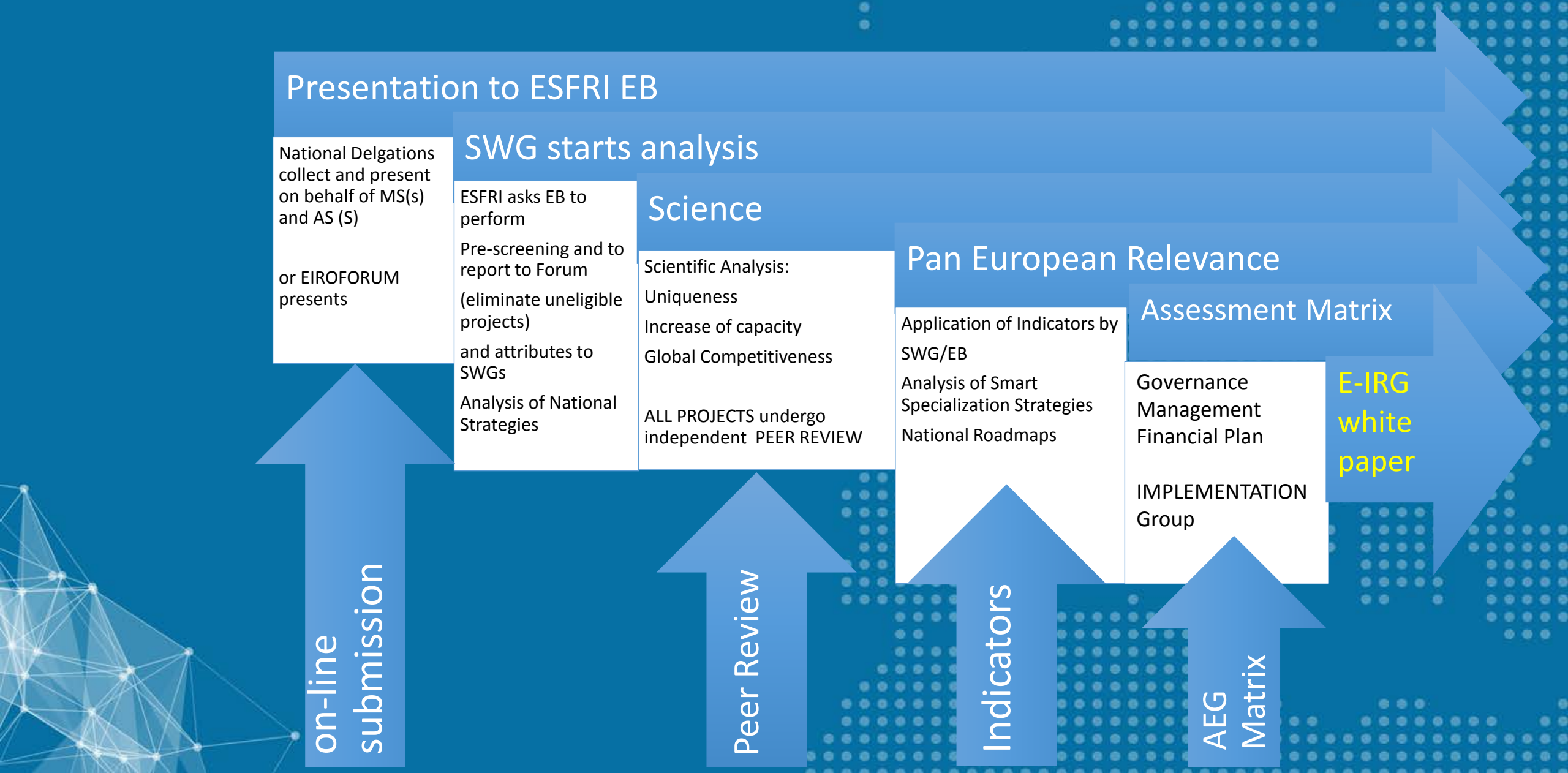
- As e-IRG and ESFRI move towards an integrated analysis of the new research infrastructure projects, including upgrades of existing research infrastructures, it has become urgent that EC programmes, like H2020, address the support of data- producers and data-managing infrastructures in an integrated way.

- The pressure to develop adequate IT solutions in the Research Infrastructure projects could be better served through a further integration of calls between the DG-RTD and DG-CONNECT in the field of Research Infrastructures.

- Sustainability of transversal e-infrastructure cannot be afforded by the data producing RIs that, on the other hand, must refine their efforts to be compliant with the best-accepted data formats and analysis protocols emerging in the field.

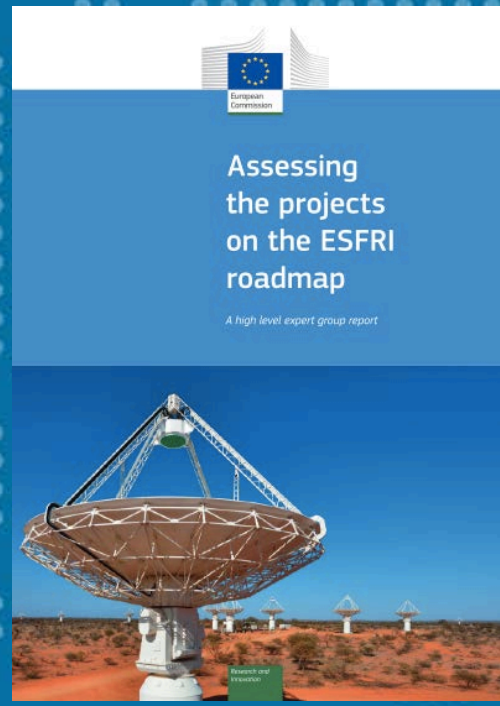
- Storing and retrieving scientific value is the goal and this requires a large effort in defining metadata, formats, appropriate semantic data mining tools, and advanced data analysis and computation facilities that should operate at the proper scale (local, cloud) for each scientific community or application. This requires a continuous dialogue between data producers, RI users, IT developers and legal/ethical issue administrators.

The Selection and Assessment Process of the Projects



The SWG presents an overall recommendation to the EB and Forum in the three categories:

- **candidate projects** for the 2016 ESFRI Roadmap (2-3 max. per SWG);
- **emerging projects** to be mentioned in a separate part of the final report, not yet ready to be included in the “LIST”;
- **rejected projects** - projects that shall not be considered further for the Roadmap 2016 with detailed explanation for this rejection



ASSESSMENT OF MATURITY BY THE IMPLEMENTATION GROUP USING THE METHOD OF THE AEG-2012:

Final check and proposal to Plenary Forum (step 5)

Based on the A) overall recommendation for strong candidate projects from each SWG and the B) maturity recommendation per project from the IG, the EB will execute a final check on the following criteria:

- balance between the thematic fields of the SWG;
- relevance of projects for EU policies;
- global dimension of projects.

The EB will present a recommendation per project to the Forum

Final decision (step 6)

The Plenary Forum in fall 2015 decides on the status of each proposed project by attributing:

'retained projects' resulting in appearance on the 2016 ESFRI Roadmap,

'emerging projects', resulting in a list of emerging projects complemented by 'gaps analysis',

'rejected projects'.

And decides the PUBLICATION OF THE

ESFRI

ROAD MAP 2015 2016

FOLLOW-UP:
According to the 10-year rule we know that:

There will be at least 10 projects phasing out in 2017 making room for a
ESFRI Roadmap 2018 update

There will be at least 6 projects phasing out in 2019, making room for a
ESFRI Roadmap 2020 update

ALL INFO on ESFRI web site, and for Italians on:

www.ESFRI.it

ESFRI

ROAD MAP 2015 2016

ESFRI
DELEGAZIONE ITALIANA

ROAD MAP 2015 2016

Presentazione dei Progetti Italiani per la Roadmap ESFRI:
Regole e Istruzioni

SITO DELLA DELEGAZIONE ITALIANA ESFRI PER LA ROADMAP ESFRI

Questo sito riflette informazioni e procedure reperibili sul sito ufficiale di ESFRI e rappresenta il canale per la pre-presentazione delle proposte alle Roadmap 2016 (e successivi aggiornamenti al 2018 e 2020).

ESFRI

ROAD MAP 2015 2016