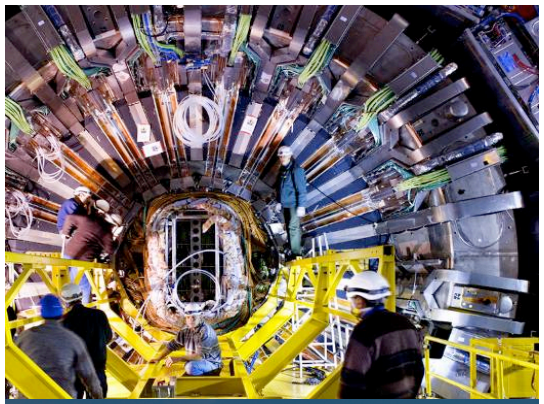


Research Infrastructures in Horizon 2020

Elena Righi-Steele
European Commission – DG Research & Innovation
Research Infrastructures

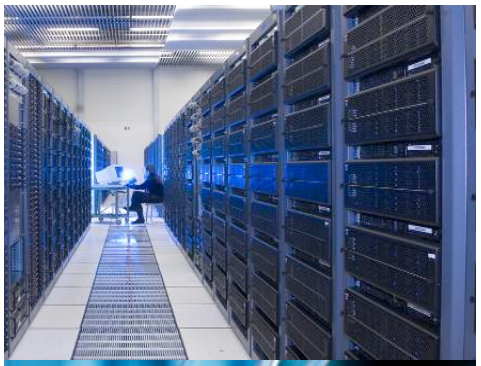
"The views expressed in this presentation are those of the author and do not necessarily reflect the views of the European Commission"

Research Infrastructures





Facilities, resources, organisational systems and services that are used by the research communities to conduct research and innovation in their fields





The Knowledge Triangle at Work

To be a genuinely competitive in the knowledge economy, one must be better:

- in producing knowledge through research
- in diffusing it through education
- in applying it through innovation



Global Virtual Research Community



Why an EU Approach for Research Infrastructures?

- To **open access** to the research infrastructures existing in the individual Member State to all European researchers
- To **avoid duplication of efforts** and to coordinate and **rationalise the use** of these research infrastructures
- To trigger the **exchange of best practice**, develop **interoperability** of facilities and resources, develop the **training** of the next generation of researchers
- To connect national research communities and **increase the overall quality of the research and innovation**
- To help **pooling resources** so that the Union can also acquire and operate research infrastructures **globally**

European Strategy Forum on Research Infrastructures - The Process

RI proposal by Member State

ESFRI

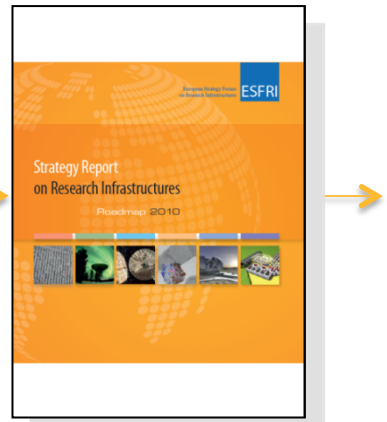
TWG1

TWG2

TWG3

- Pan-European
- Science case
- Technical case
- Business case
- Overall maturity

Recommended projects and analysis of landscape



ESFRI Roadmap 2010

Social Sc. & Hum. (5)	Life Sciences (13)		Environmental Sciences (9)		Energy (7)	Material and Analytical Facilities (6)	Physics and Astronomy (10)		e-Infra-structures (1)
SHARE	BBMRI	ELIXIR	ICOS	EURO-ARGO	ECCSEL	EUROFEL	ELI	TIARA	PRACE
European Social Survey	ECRIN	INFRA FRONTIER	LIFEWATCH	IAGOS	Windscanner	EMFL	SPIRAL2	CTA	
CESSDA	INSTRUCT	EATRIS	EMS	EPOS	EU-SOLARIS	European XFEL	E-ELT	SKA	
CLARIN	EU-OPENSCREEN	EMBRC	SIAEOS	EISCAT_3D	JHR	ESRF Upgrade	KM3NeT	FAIR	
DARIAH	Euro BioImaging	ERINHA BSL4 Lab		COPAL	IFMIF	NEUTRON ESS	SLHC-PP	ILC-HIGRADE	
	ISBE	MIRRI			HiPER	ILL20/20 Upgrade			
	ANAEE				MYRRHA				

Distributed research infrastructures

Single sited research infrastructures



Implementation of ESFRI projects

«A combination of resources from national budgets, Community programmes, EIB instruments and structural funds should lead to the development of excellent research infrastructures throughout Europe»

EU Council of Research Ministers

March 2009

The ESFRI Process cont.



EC
Funding of
Preparatory
Phase

- Finalise concept and design
- RI Organisation
- Legal framework
- Business plan
- Finance model

ESFRI
Incubator
Role

Member States
Funding of
Implementation Phase and **Operation**

Support from EC Structural Funds

Support from EC Horizon2020

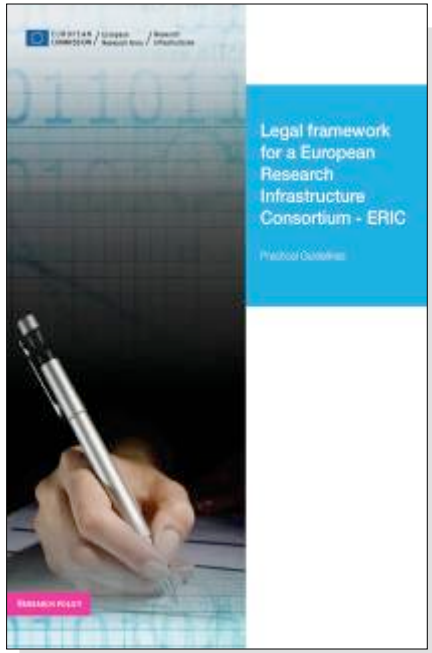
Status of implementation

- **Social Science and Humanities (SSH):** SHARE (ERIC); CLARIN (ERIC); ESSurvey (ERIC application)
- **Environmental Sciences (ENV):** EURO-ARGO (ERIC application)
- **Biological and Medical Sciences (BMS):** EATRIS (ERIC application); ECRIN (ERIC application); INSTRUCT (ICA, Ltd); ELIXIR (ICA, EMBL special project)
- **Energy:** JHR (ICA)
- **Engineering, Physical Sciences, Materials and Analytical Facilities (EPS):** ESRF upgrade (EIRO, société civile); European XFEL (EIRO, GmbH); ILL 20/20 upgrade (EIRO, société civile); FAIR (GmbH); SPIRAL2 (CNRS/CEA)
- **e-Infrastructures:** PRACE (AISBL)

Commitments within the Innovation Union

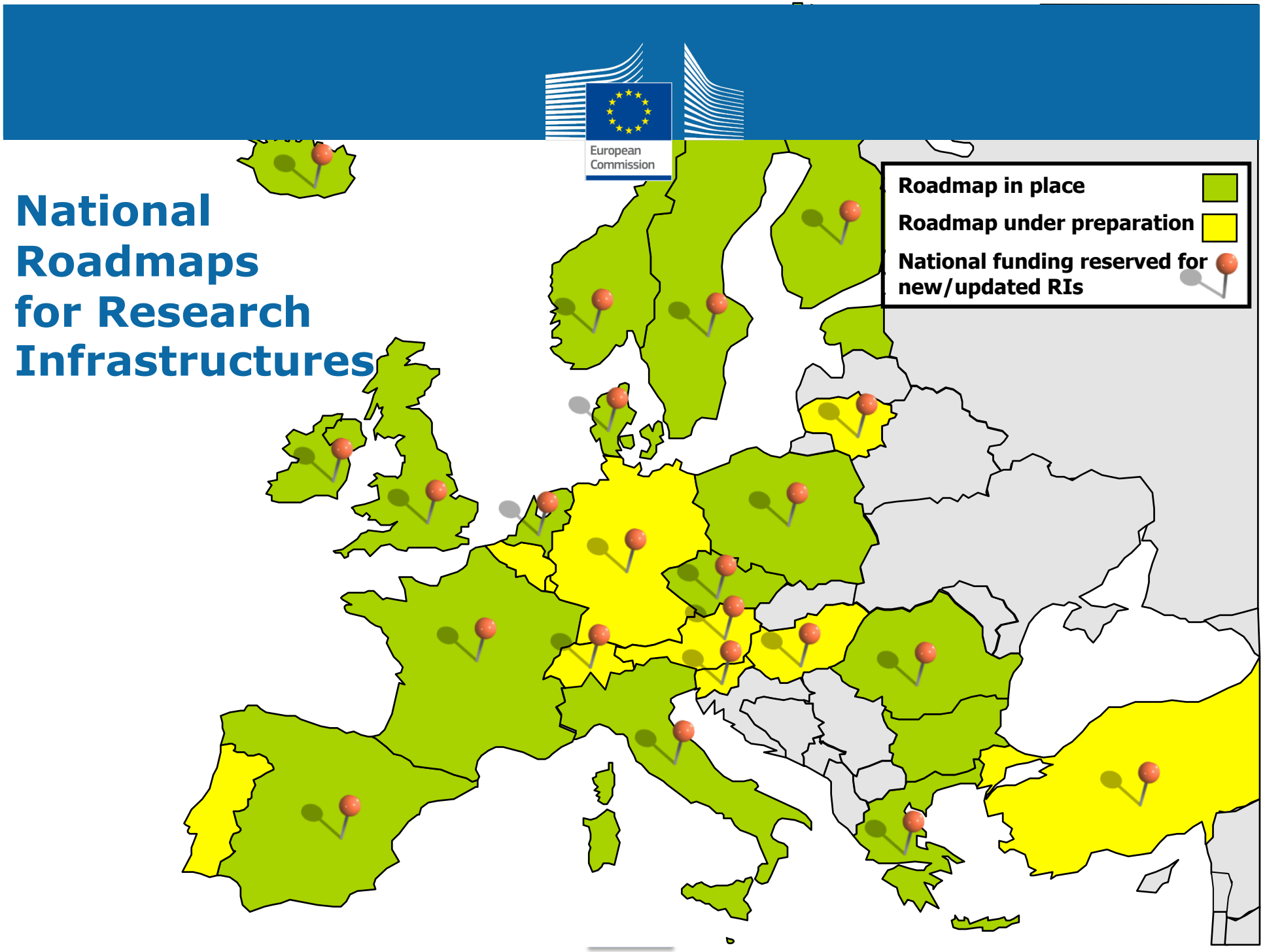
- *By 2015 (…) have completed or launched the construction of 60% of the priority European research infrastructures currently identified by ESFRI (…).*
- *… opening of Member State operated research infrastructures to the full European user community …*
- *The European Union should step up its cooperation on the roll-out of the global research infrastructures…*

ERIC: European Research Infrastructure Consortium



- **A new legal framework, at EU level, to facilitate the joint establishment and operation of Research Infrastructures of European interest among several countries**
- **A legal personality recognised in all EU Member States**
- **Current status:**
  - First ERIC status awarded to **SHARE** on 17 March 2011, hosted by NL
  - Second ERIC status awarded to **CLARIN** on 29 February 2012, hosted by NL

National Roadmaps for Research Infrastructures



Cohesion policy 2014-2020 & EU 2020

Commission adopted its proposals 6 October 2011:

- **Cohesion policy** (ERDF, CF & ESF) will focus on Europe 2020 objectives for smart, sustainable and inclusive growth, along with rural development policy (EAFRD) and maritime and fisheries policy (EMFF),
- **List of thematic objectives** developed around the Europe 2020 headline targets and flagship initiatives
- **Thematic concentration** for maximising impact: minimum shares for research and innovation through ERDF
- **Ex-ante conditionality**, e.g. existence of a Research and Innovation Strategy for Smart Specialisation (RIS3).

Commission has adopted "Elements for a Common Strategic Framework 2014 to 2020" for cohesion. Linkages have been clarified with Horizon 2020.

Research Infrastructures in Horizon 2020

Developing the European RIs for 2020 and beyond

- Developing **new world-class RIs** – ESFRI+
- **Integrating** and **opening national RIs** of **pan-European interest** – Integrating Activities
- Development, deployment and operation of ICT based **e-Infrastructures**

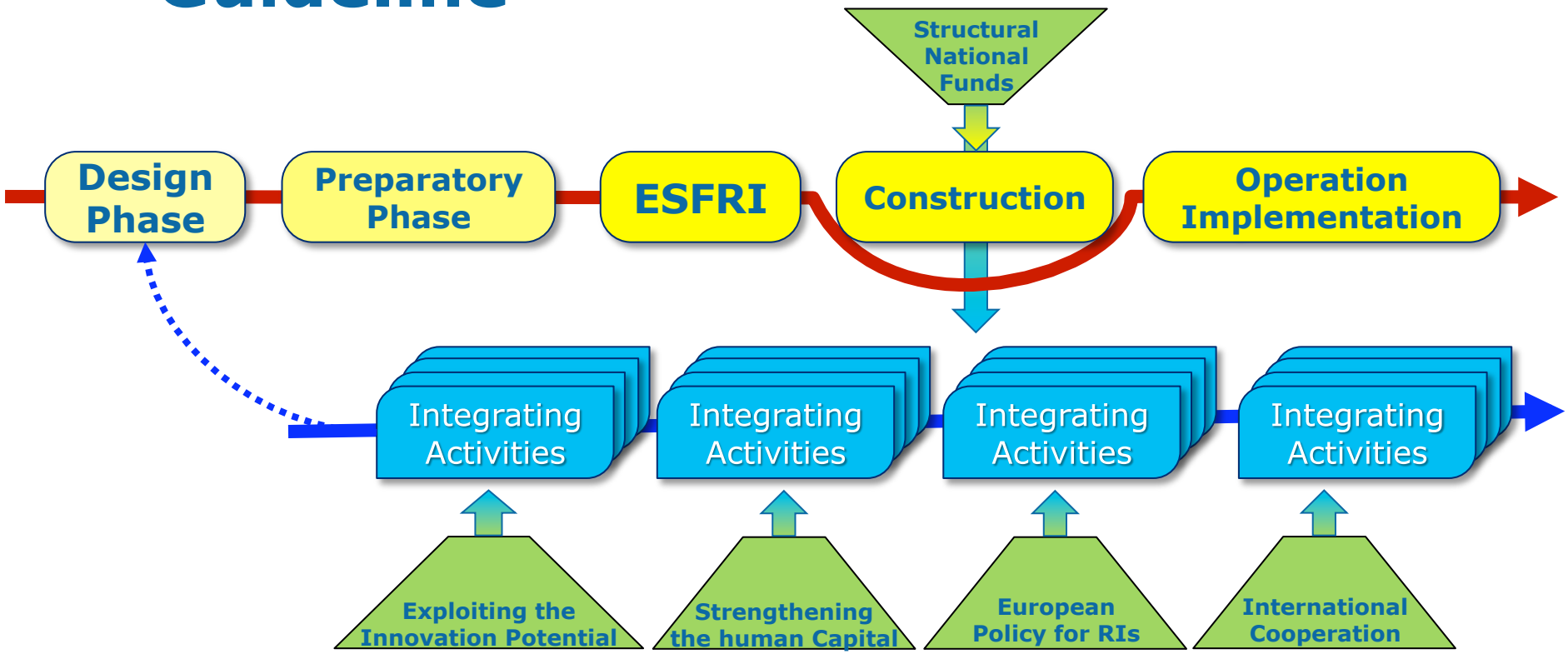
Fostering the **innovation** potential of RIs and their **human capital**

Reinforcing European RI **policy** and **international cooperation**

Specific Implementation Aspects



"Guideline"


Structural National Funds
Design Phase
Preparatory Phase
ESFRI
Construction
Operation Implementation
Integrating Activities
Integrating Activities
Integrating Activities
Integrating Activities
Exploiting the Innovation Potential
Strengthening the human Capital
European Policy for RIs
International Cooperation

Integrating and Opening existing National RIs of pan-European Interest

- To open up key national research infrastructures to all European researchers and to ensure their optimal use and joint development
- Support to "European Research Infrastructures Networks" bringing together infrastructures in a given field
- Continuation of the FP7 Integrating Activities and I3s

Activities will cover: Transnational and virtual access; Networking to foster a culture of cooperation; Joint research to improve the services provided by the infrastructures

Exploiting the innovation potential of research infrastructures

- **R&D partnerships with industry** to develop Union capacities and industrial supply in high-tech areas such as scientific instrumentation or ICT;
- Stimulate the **use of research infrastructures by industry**, e.g. as experimental test facilities, innovation hubs, knowledge-based centres;
- Encourage the integration of research infrastructures into local, regional and global **innovation systems**;
- **Pre-Commercial Procurement and Public Procurement of Innovation** by research infrastructure actors to drive forward innovation.

3. Reinforcing European RI policy and international cooperation

3.1 Reinforcing European policy for RIs

- To exploit synergies between national and Union activities:
  - ✓ Partnerships between relevant policymakers and funding bodies
  - ✓ Supporting synergies with other policies (e.g. REGIO, EMPL)
  - ✓ Surveys, monitoring and assessments of RIs at Union level
  - ✓ Policy studies and communication tasks

3.2 Facilitate strategic international cooperation

- To facilitate the development of global RIs
  - ✓ Cooperation of European RIs with their non-European counterparts
  - ✓ Ensuring their global interoperability and reach
  - ✓ Pursuing international agreements on the reciprocal use, openness or co-financing of RIs

Priorities and Vision for Horizon 2020

- Adopt adequate organizational and governance models
- Pool and reinforce regional capacities
- Consolidate RIs as a multi-disciplinary platform for regional/global collaborations
- Support international collaborations that are strategic for European scientific partnerships


Thank you for your Attention!
HORIZON 2020
Find out more:
www.ec.europa.eu/research/horizon2020