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European Research Infrastructures  
Roadmap 2016

**Launch of the 2016 ESFRI Roadmap  
Trieste, 24 September 2014**

**John Womersley**  
Chief Executive, Science and Technology Facilities Council (UK)  
Chair of ESFRI

# 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 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

# Role of ESFRI

- Set up by the EU Council of Research Ministers in 2002
- Brings together representatives of Ministers of the 28 Member States, 10 Associated States, and of the European Commission
- **Supports a coherent and strategy-led approach to policy making on Research Infrastructures in Europe**
- Mandate to develop a Roadmap and prioritise research infrastructures
- ESFRI provides a forum for coordination, information sharing, help and best practice, but **Member States must be the major source of funding, in variable geometry**
- Strong support for these principles

# ESFRI Roadmap

- Roadmap identifies new pan-European Research Infrastructures or major upgrades to existing ones, to meet the needs of European research communities in the next 10 to 20 years, in all fields of research
- First Roadmap published in 2006
  - Followed by two updates in 2008 and 2010
  - Now contains 48 projects
  - Requires major financial investment (~20 B€) and long term commitment for operation (~2 b€/year)



# Moving forward

Build on success:

- Go further in setting priorities
- A much more focused, shorter roadmap for 2016
- Look much more broadly at the research infrastructure landscape across Europe
  - Landscape Analysis in 2016 roadmap
  - Neutron scattering working group
  - Activities to promote coordination in specific areas e.g. PRACE, working with e-IRG

# ESFRI Setting Priorities

As approved at the Competitiveness Council of Ministers Meeting 16/5/14

*Three Priority Projects for implementation*

- **EPOS**: European Plate Observing System, **ELIXIR**: The European Life-Science Infrastructure for Biological Information, and **ESS**: The European Spallation Source

*Implementation Support for*

- **ECCSEL**: European Carbon dioxide Capture and Storage Laboratory Infrastructure; **EISCAT-3D**: The next generation incoherent scatter radar system; **EMSO**: European Multidisciplinary Seafloor & Water column Observatory; **BBMRI**: Biobanking and Biomolecular Resources Research Infrastructure; **ELI**: Extreme Light Infrastructure; **CTA**: Cherenkov Telescope Array; **SKA**: Square Kilometre Array; **CLARIN**: Common Language Resources and Technology Infrastructure; **DARIAH**: Digital Research Infrastructure for the Arts and Humanities

*Support for Sustainability and European Coverage*

- **CESSDA**: Council of European Social Science Data Archives; **SHARE**: Survey on Health, Ageing and Retirement in Europe; and **ESS ERIC**: European Social Survey

# 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

# 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

# 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

✓ Implemented according to AEG (2013) Red: 10-years expires in 2016

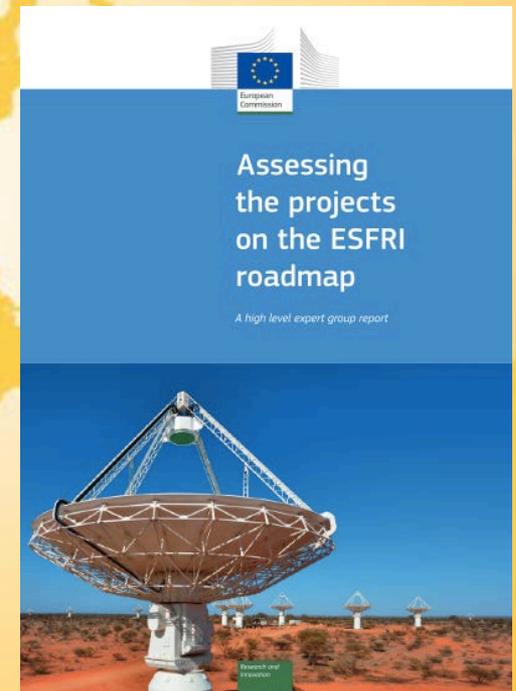
# Proposing projects for new roadmap

*The proposal process will be on-line (reserved to National Delegations and EIRO forum). Key questions will include:*

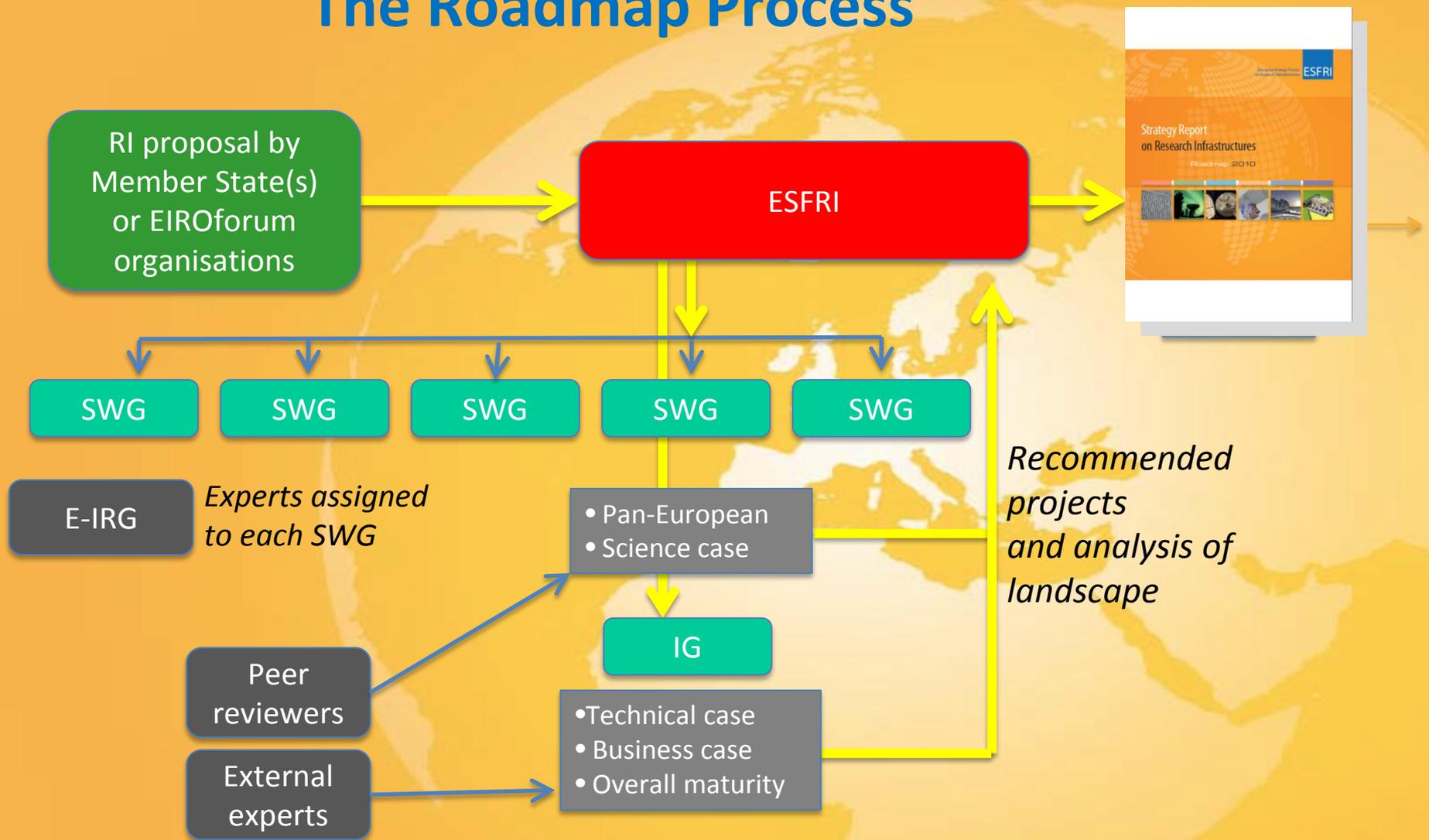
- What is the value for science? for innovation?
- Cost and Schedule?
- What is the strategy for siting? What is the governance model?  
What is the data management plan?
- How it is planned to be financed?
- Does it replace existing facilities?
- Is the project included on one or more national roadmaps?
- What is the intended user community? Will it be open access?
- What preparatory work has been done?
- Design Studies? Business case? Investment plan?
- Is it intended to apply for H2020 preparatory phase?

# Evaluation of Projects

- Proposals will be screened for eligibility and assigned to one of ESFRI's strategic working groups
- Scientific merit and pan European relevance (based on ESFRI criteria) will be assessed by the SWG, using the advice of independent peer reviewers
- e-science aspects will be coordinated with e-IRG
- Project and governance maturity will be assessed by the Implementation working group, again using advice from external experts, based on the approach used by the Assessment Expert group in 2012



# The Roadmap Process



# Key dates

- 25 September 2014:  
Open for applications from national delegations and EIROforum  
(Most countries will have their own internal selection process)
- 31 March 2015:  
Deadline for new project proposals
- January 2016:  
New roadmap presented

# Today's programme

- Giorgio Rossi – submission and selection procedures
- David Bohmert – assessment of state of implementation of the 2010 ESFRI Roadmap and evaluation of new proposals
- Landscape of RI and how ESFRI projects have contributed:
  - Environment – Gelsomina Pappalardo
  - Health and Food – Gabriela Pastori
  - Social and Cultural innovation – Jacques Dubucs
  - Energy – Ricardo Migueis
  - Physical Sciences and Engineering – Giorgio Rossi
- E-infrastructure Landscape – Sverker Holmgren
- Q&A with speakers

# Thank you!

A photograph of a modern building at dusk. In the foreground, a row of flags on tall poles is silhouetted against the bright orange and yellow sunset sky. A thin crescent moon is visible in the dark blue upper portion of the sky. The building on the right has a curved facade with large windows, some of which are illuminated from within, showing circular patterns.