

The logo for the European Strategy Forum on Research Infrastructures (ESFRI) is located in the top left corner. It consists of a blue square containing the white text 'ESFRI'.

**ESFRI**

European Strategy Forum  
on Research Infrastructures

# **ERF Workshop – The Socio-Economic Relevance of Research Infrastructures**

**Dr. Beatrix Vierkorn-Rudolph**

**ESFRI Chair**

# Mission of ESFRI

The European Strategy Forum on Research Infrastructures was founded in 2002 by the Research Ministers of the Member States and the European Commission

- To support a **coherent and strategy-led approach to policy-making** on new and existing pan-European and global Research Infrastructures (RI);
- To facilitate **multilateral initiatives** leading to **the better use and development of RI**, at EU and international level.

# The Roadmap Mandate

- **The Competitiveness Council of the EU mandated ESFRI on November 2004 to develop a strategic roadmap in the field of RI for Europe**
- **The ESFRI roadmap identifies new pan-European Research Infrastructures (RIs) or major up-grades to existing ones, corresponding to the needs of European research communities in the next 10 to 20 years, regardless of possible location**

**First Roadmap  
in 2006**

**Update in  
Dec 2008**

**Update in  
Dec 2010**

***A stimulation  
and incubator role***

- From more than **260** proposals, **50** projects have been identified through several review stages between 2006 and 2010
- Projects meeting the “grand challenges”
- Update in 2010 in the areas Energy and Biological and Medical Sciences (6 new projects)
- **10** of the projects are in the **implementation phase** and further **16** are proceeding towards the implementation phase until end of 2012

# Research Infrastructures

- RIs are **key instruments** in bringing together scientists, funding agencies, politicians and industry to act together and tackle the cross-disciplinary scientific and technical issues of critical importance for Europe
- RIs **contribute to the implementation** of the Europe 2020 strategy and its Innovation Union Flagship Initiative
- RIs **enable research** not realisable without them
- RIs provide unique opportunities **to train** young scientists and engineers

# The ESFRI roadmap process



ESFRI designed a **stage-gate process** to ensure that all proposals are assessed in a transparent and fair manner; each proposal needs support by at least 3 MS or associated countries

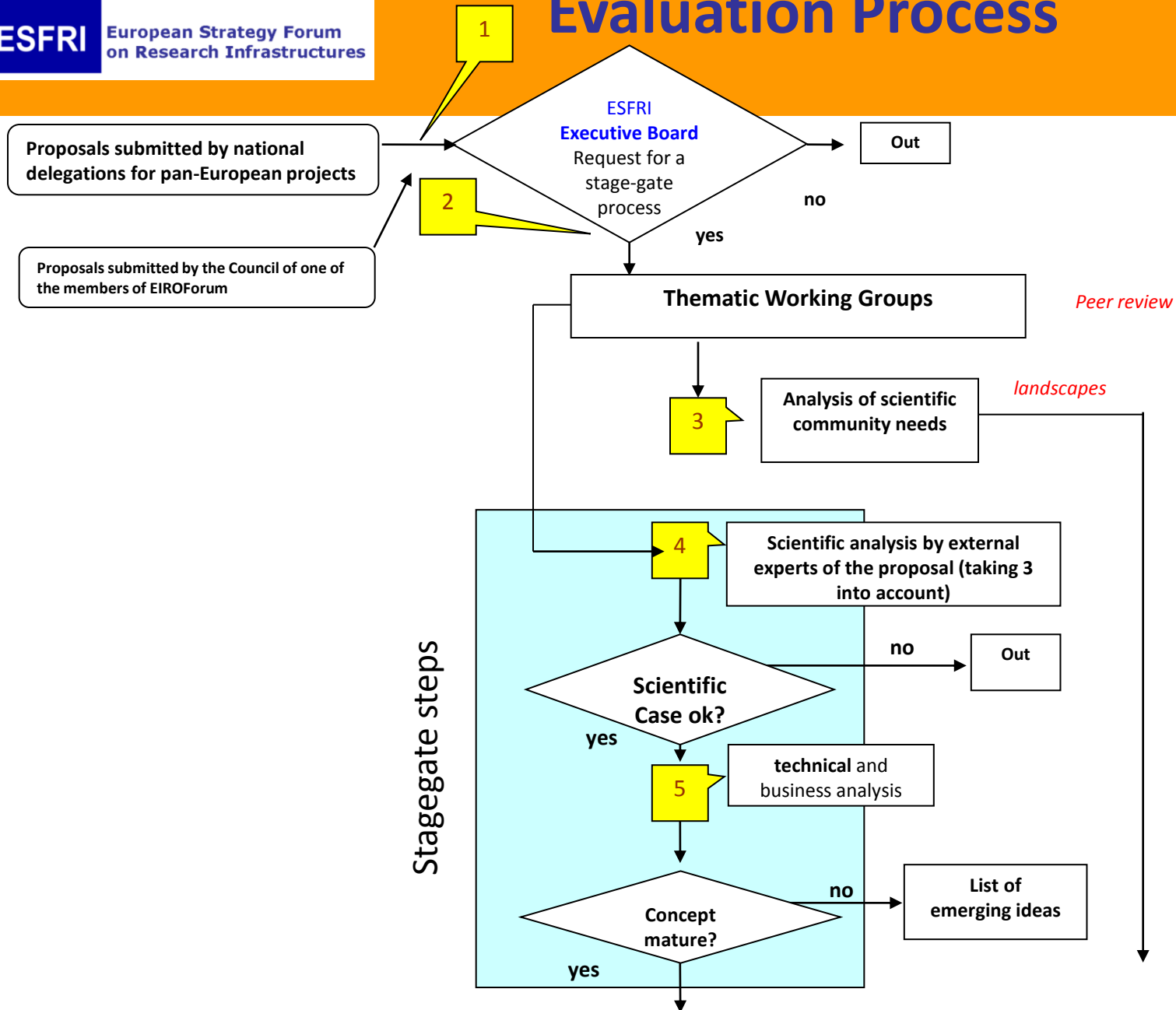
## Scientific case

- ✓ Corresponds to future needs of the scientific communities in Europe
- ✓ Demonstrates impacts on scientific developments
- ✓ Supports new ways of doing science
- ✓ Pan-European value, international context

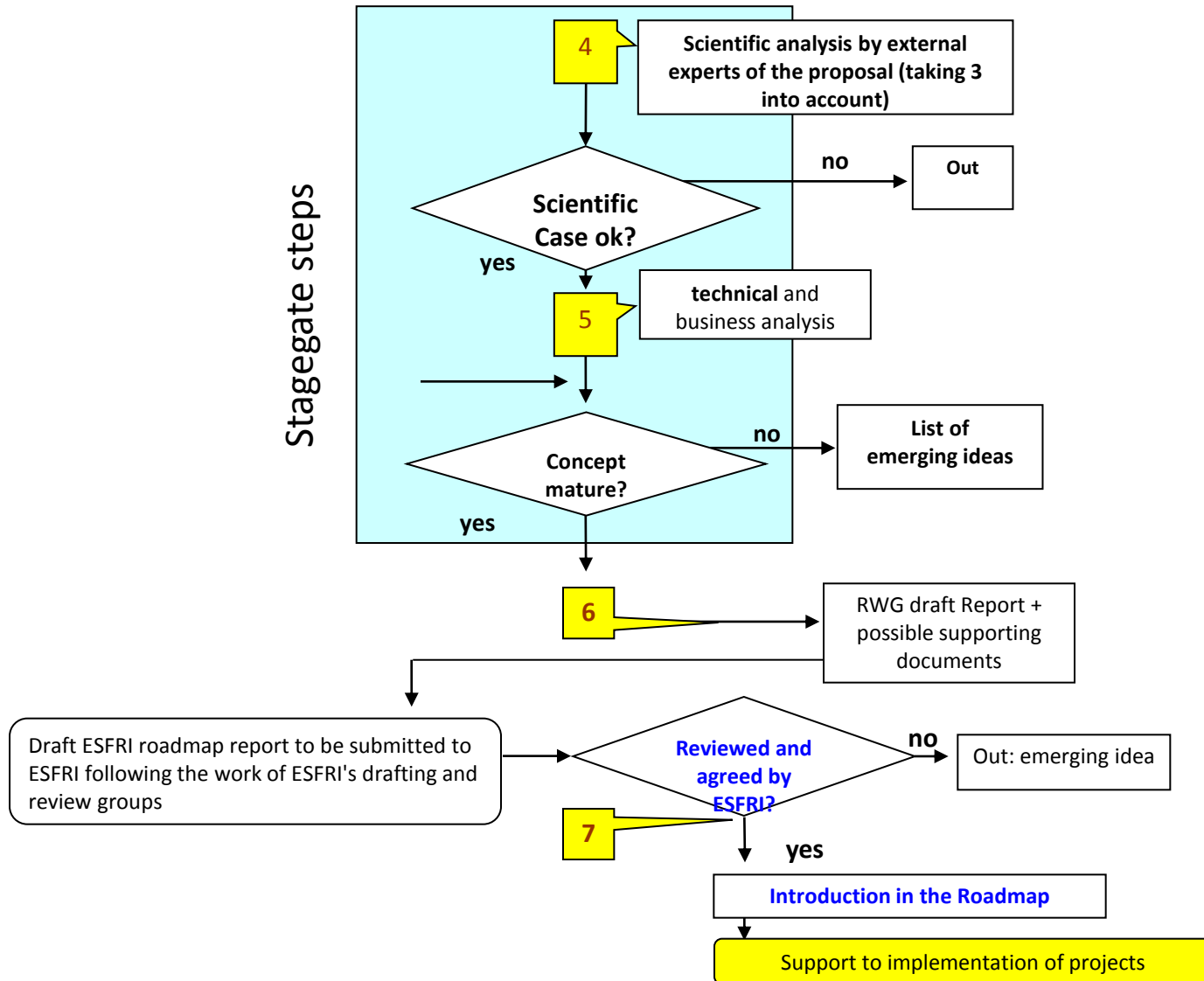
## Concept case

- ✓ Technologically and financially feasible proposals

# Evaluation Process



# Evaluation Process





# ESFRI ex-ante evaluation criteria for setting up the roadmap

- Providing scientific / technological cutting edge and managerial excellence
- Have a clear pan-European added value (at least 30% of users coming from non-host countries)
- Provide top-level services and training possibilities for young scientists
- Projects selected by peer review since demand exceeds supply
- Results published in the public domain

# ESFRI evaluation objectives of European Research Infrastructures

- 1. Scientific and technological excellence and impact**
- 2. Socio – economic impact and competitiveness**
- 3. Governance and financial management**

## 1. Scientific and technological excellence and impact

- Contribution to the advancement of science and technology
- Appropriateness of measures for the dissemination and/or exploitation of scientific and technological results
- Uniqueness (complementarity or competitiveness)
- Potential role in structuring the ERA
- The contribution, at the European/International level
  - knowledge generation in different areas,
  - knowledge transfer to industry and /or the wider society
  - mobility of researchers
- Quality and relevant experience of the individual participants and thus the overall quality of the research infrastructure

## 2. Socio – economic impact and competitiveness

### Capabilities to generate impacts

- Impact on European and/or regional competitiveness and economy
- Impact on society
- Impact on environment

## 3. Governance and financial management

- Appropriateness of the management structure and procedures
- Appropriateness of the allocation and justification of the resources to be committed
- Access management strategy

# Outlook

- Develop, together with other European organisations dealing with evaluation, a small set of criteria and corresponding indicators, which could be used in all countries
- Convince funding agencies /Ministries to use these criteria /indicators for their national evaluations
- In future: the ESFRI roadmap update could set up on the evaluations on the national level
- ESFRI will also use these criteria for setting up an evaluation process of the implemented projects

# Next steps

- Set up an Expert Group on indicators for pan-European relevance of RI
- To carry on the dialogue about evaluation criteria and procedures for the evaluation of RI with all relevant European organisations
- Preparing a document providing key findings and messages on the socio-economic dimension and added value of ESFRI Research Infrastructures within the scope of CoPoRi

# The Socio-Economic Relevance of Research Infrastructures

## Conclusions from the Workshop



<http://erf.desy.de/workshop>



# Conclusions

- This is the fourth workshop in series of the annually organized ERF workshops/seminars
  - Open Access (2009 in Lund),
  - Mobility (2010 at PSI),
  - Sustainable Energy (2011 in Lund)
  - ⇒ Socio-economic impacts (2012 at DESY)
- about 100 participants
- Broad audience from RIs, funding agencies, science organizations, industry, ...
- ~40 contributions in plenaries and parallel sessions
- Vivid discussions ...

# Conclusions

- **Many dimensions of socio-economic impacts of RIs**
  - Scientific achievements, increasing knowledge pool but also driving the development
  - Technology, Innovation, Industry, Economic but also Environmental impacts
  - Human Capital, Education, Learning, Training, Skills and Mobility
  - Societal benefits, Public and Cultural Values, Outreach to and from Science
  - Social Capital, Networks, Trust, Cooperation, ...
  - Some of them can be planned, some of them are not (but substantial)
- **Workshop has covered a large number of aspects**

# Conclusions

- **Questions remain:**
  - How do we ensure that we are capable to distinguish and capture all impacts?
  - How do we describe some of them in methodological frameworks?
  - How do we arrive at comparable methods for all different types and flavors of RIs (centralized, distributed, limited/unlimited access resource)?
  - Which impacts are quantifiable and which are not?
  - How do we improve existing methodology (which certainly has some limitations)

# Conclusions

- All agree on importance of impact analysis
- Need to evolve from single case studies to quantifying impacts and evidences
  - Specific examples and case studies are illustrative, but do not give the full picture
  - Improve documented evidence of impacts, provide better empirical data basis
- Disentangle different stakeholders and their particular demands
- Communication to stakeholders is important
  - communication should be always coherent but needs different languages for different stakeholders

# Conclusions

- Improve understanding of returns and status of play at national and EU level: i.e Horizon 2020 (ERF declaration, ESFRI position)
- Improve capability to increase positive impacts and avoid negative impacts (e.g. environmental)
- Strengthen exchange of best practices, setting up an ERF task force?