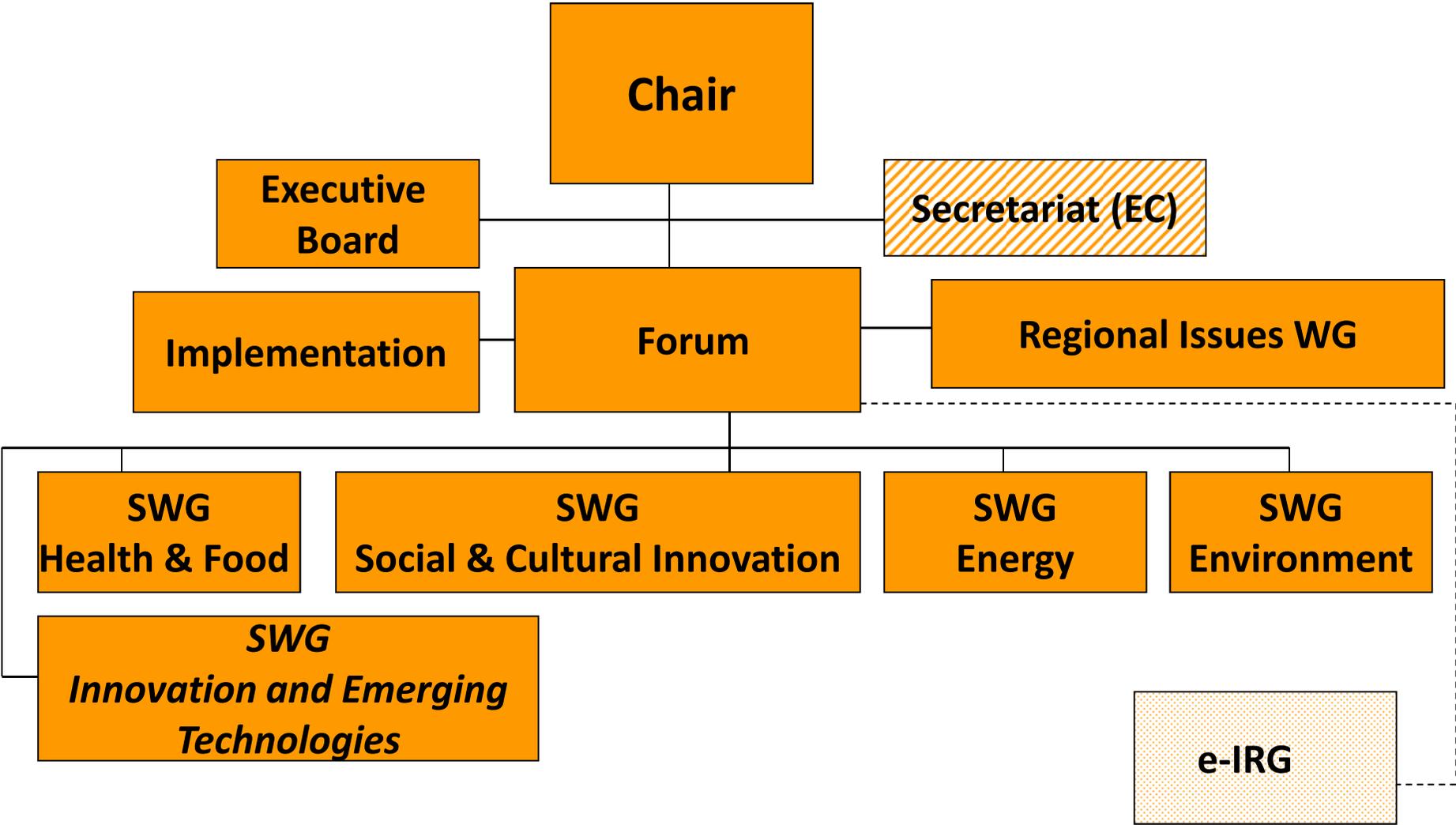




# RI activities in the context of Horizon 2020: ESFRI perspective

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# Structure of ESFRI



# Strategic Working Groups

<b>SWG</b> Energy	ex TWG ENE	<b>Chair:</b> Gabriele Fioni, FR
<b>SWG</b> Health and Food	ex TWG BMS	<b>Chair:</b> Dr. Murat Ozgoren, TR
<b>SWG</b> Social and Cultural Innovation	ex TWG SSH	<b>Chair:</b> Adrian Dusa, RO
<b>SWG</b> Environment	ex TWG ENV	<b>Chair:</b> <i>NN</i>
<b>SWG</b> Innovation and Emerging Technologies	ex TWG EPS	<b>Chair:</b> Jean Moulin

# Further Working Groups

<b>Implementation</b>	<b>Chair:</b> Leo Le Duc, NL
<b>Regional Issues</b>	<b>Chair:</b> Jacek Gierlinski, PL
Ad-hoc Expert Group on Indicators	Giorgio Rossi

# Role of ESFRI

- Reflecting on the development of strategic *policies* for pan-European Research Infrastructures
- Exchanging views and exploring common and integrated initiatives
- Contributing to the implementation of ERA (European Research Area)
- Responding to the needs of the scientific community to address the rapidly evolving science frontiers

# European Roadmap for RI

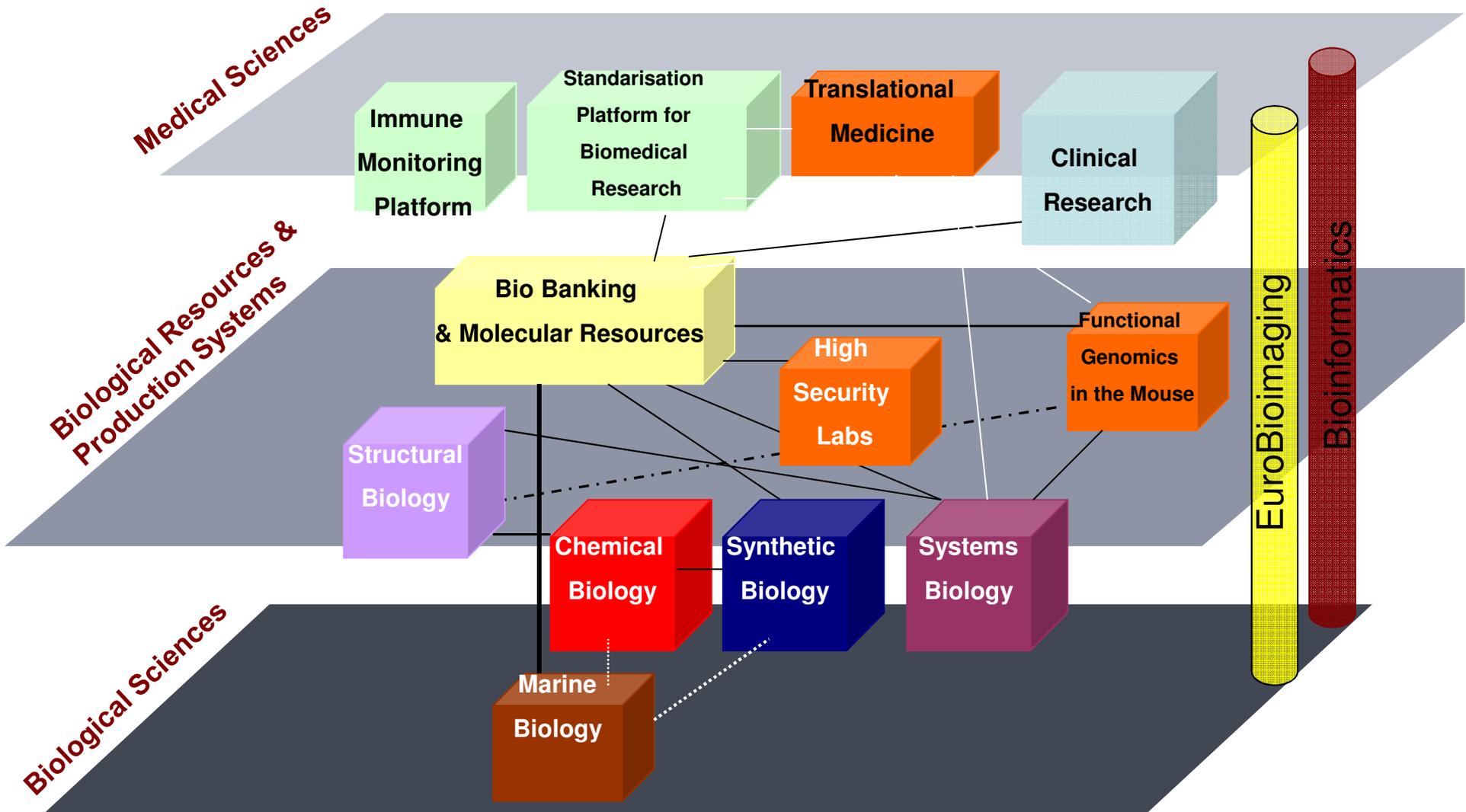
- ESFRI has identified new pan-European RI or major upgrades, **corresponding to the needs of EU research communities in the next 10 to 20 years**, regardless of possible location
- From more than 260 proposals, 50 projects have been identified through several review stages between 2006 and 2010
- Update of the Roadmap in 2010 in the areas Energy and Biological and Medical Sciences
- **10** of the projects are in the **implementation phase**; up to 18 projects could reach the implementation phase until end of 2012

# Goals

- Homogenous growth across ERA
- Competitiveness
- Regional (thematic & geographic)

# ESFRI Health & Food SWG RIs

## *Implementation of a landscape*



- 
- International entry points
  - National Roadmaps,
  - International Roadmaps (OECD etc)
  - Roadmap update

# Coordinators answered the following questions related to the **implementation** of 'their' research infrastructure:

- 1. Which % of the construction costs have been by now committed by interested (legal) entities?
- 2. What is the present picture of the foreseen Governance structure? In case of a distributed facility: are the plans in line with the ESFRI definition on page 8 of the roadmap?
- 3. What are at present major bottle necks in point 1 and 2?
- 4. Is there a site issue?
- 5. Are there major technical problems foreseen for the construction phase?
- 6. What kind of assistance would you appreciate from the world of ESFRI?



# Implementation

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on Research  
Infrastructures

# Shared characteristics

- **Structure:** RIs are typically distributed and will use a Hub and Nodes structure
- **Governance:** A range of legal models will be used or are being considered – ranging from ERIC, to limited liability company, to EMBL Special Project
- Many build on previous I3 activities, or integrate existing service provision organisations

- Room for Potential synergies between RI (Gap and redundancy analysis pending).

## Definitions

- When agreed statutes or other legal provisions for the construction and operation of the RI are present;
- when a stable legal governance structure is in place and;
- when there is budget commitment for the different stages of the RI (the construction, operation and winding-upstage).
- **preparatory phase**, when it has an official allocated budget of the European Commission for a specific period of time, in order to arrange the legal, governance and financial conditions to start the implementation of the project.
- **interim phase** for projects that ended the official period for the preparatory phase, but that do not yet meet all legal, governance and financial conditions to be considered as under implementation.

- 
- **‘Governance’** of Research Infrastructures corresponds to the sets of institutional structures, principles, rules and procedures through which the interests of the various stakeholders as well as the lines of authority, responsibility, and accountability between them find their expression.

# ‘Legal aspects’

- There are currently a variety of legal instruments under consideration for RIs, varying from European Research Infrastructure Consortium (ERIC) to special projects under EMBL, international associations (e.g. AISBL) and national limited companies (e.g. GmbH). The choice for a certain legal instrument is very much dependent on the membership of the RI (states or research organisations), the importance of exemption of VAT (substantial central procurements during construction and operation)

# financial dimension

- considered in this report deals mainly with the capacity of the Research Infrastructure projects of the ESFRI Roadmap to create the conditions of their financial sustainability. For most Research Infrastructures, financial sustainability cannot be completely achieved from the outset as the funding model of RIs usually implies the combination of various types of resources.

# Transnational Access policy.

- The objective of transnational access is to support new opportunities for research teams (including individual researchers) to obtain access to specific major research infrastructures they require for their work

# Summary of progress

- Good progress is being made overall
- One RI has International Consortium Agreement signed
- Other first generation RIs are working towards this
- More recent RIs benefit from being able to learn from the first generation RIs
- Some RIs already have scientific output, ie, training, conferences, applications for access
- Many have funding commitments in place, but the levels can vary from country to country
- Global positioning is still a pending challenges for some RIs

# Bottlenecks to implementation

- Most RIs **don't** face insurmountable scientific or technical challenges
- Rather, financial investment is the primary bottleneck
- Imbalance in participation between scientists and research performing organisations and Govs. Govs should be actively involved in the preparatory phase too. Securing Member State investment for the costs of Hub **and sustainability** is a challenge. Being able to utilise EU Structural Funds adequately is also difficult
- Agreeing the appropriate governance structure takes time

# ACROSS ALL DOMAINS



ESFRI

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# RIs Interactions with other RI

- Mapping of RI capacities to match synergies,
  - Inventory of the RIs capability
  - Room for Potential scientific and structure funding synergies between RI (Gap and redundancy analysis pending).
  - Arguments or obstructions for not working together.
  - Timely common and shared strategic planning,
  - potential of human resources' bi-directional attraction between relevant
  - pilot experiences and case studies (proof of working)

# RI Interactions with JPI and FET

- Inventory of the RIs capabilities and expertise relevant to meet each JPI or FET.
- Identification of a potential overarching grand European ambition for RI capacities, JPI's (and if possible FET's)
- Arguments or obstructions for not working together an RI capacity and each relevant JPI (and if possible FETs).

# Interactions with JPI and FET



- Timely common and shared strategic planning,
- potential of human resources' bi-directional attraction between relevant RIs to/ from JPI and FET.
- pilot experiences and case studies (proof of working)

# What to look for

- securing the necessary financial investment from Member States
- developing a suitable (sustainable and realistic) funding model,
- investment for the coordinating activities of the central Hub. to remain a single, coherent infrastructure

- Demonstrating the full construction and operation costs
- trying to synchronise their operational deployment. (varying timescale by which Member States make financial commitments
- Governance
- bridging the gap between the end of Preparatory Phase and the formal implementation of the project

# What next?



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- 
- **Consultation on possible topics for future activities for integrating and opening existing national research infrastructures (EC, Jean Emmanuel Faure)**
  - **CoPoRI stands for “Communication and Policy development for Research Infrastructures in Europe”**

# Workshop “Evaluation of research infrastructures by national authorities in Europe - best practices of national roadmaps”

- -
- Long term funding decisions of research infrastructures - regardless of whether they are of regional, national, more than national or pan-European relevance - are taken by the National Governments based on national evaluation procedures.
- 
- A vision 2020 of ESFRI is to evolve better governance and sustainability, by shared evaluation and prioritization of pan-European Research Infrastructures, based on national and international and ESFRI’s best practices. This vision could base on national evaluation schemes of European countries– which are harmonised by using the same criteria/ indicators on a best practice basis. In 2010 ESFRI set up a WG on evaluation of research infrastructures. Their first report, published in 2011, summarized a criteria table with important evaluation criteria for research infrastructures that construct the ERA.

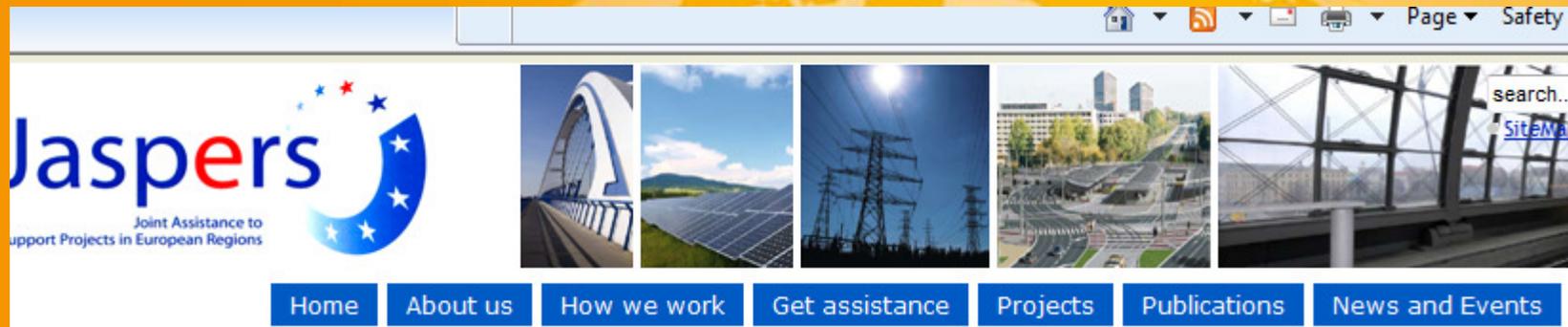
- Date: September 2013
- 
- Duration: 2 days
- 
- Participants: ESFRI EB, delegates, Science Europe, evaluation bodies of European countries
- 
- Outcome: Best practice guidelines for long term funding decisions on research infrastructures in Europe

# Why now a better atmosphere for NCP & ESFRI interaction?

- Firstly because we are here today
- Secondly now the IMPLEMENTATION forces this
- HUB&NODE model
- **R&I Strategies for Smart Specialisation (RIS3) (Cohesion Policy)**



# Support for R&I infrastructure – large projects (above 50 million EUR)



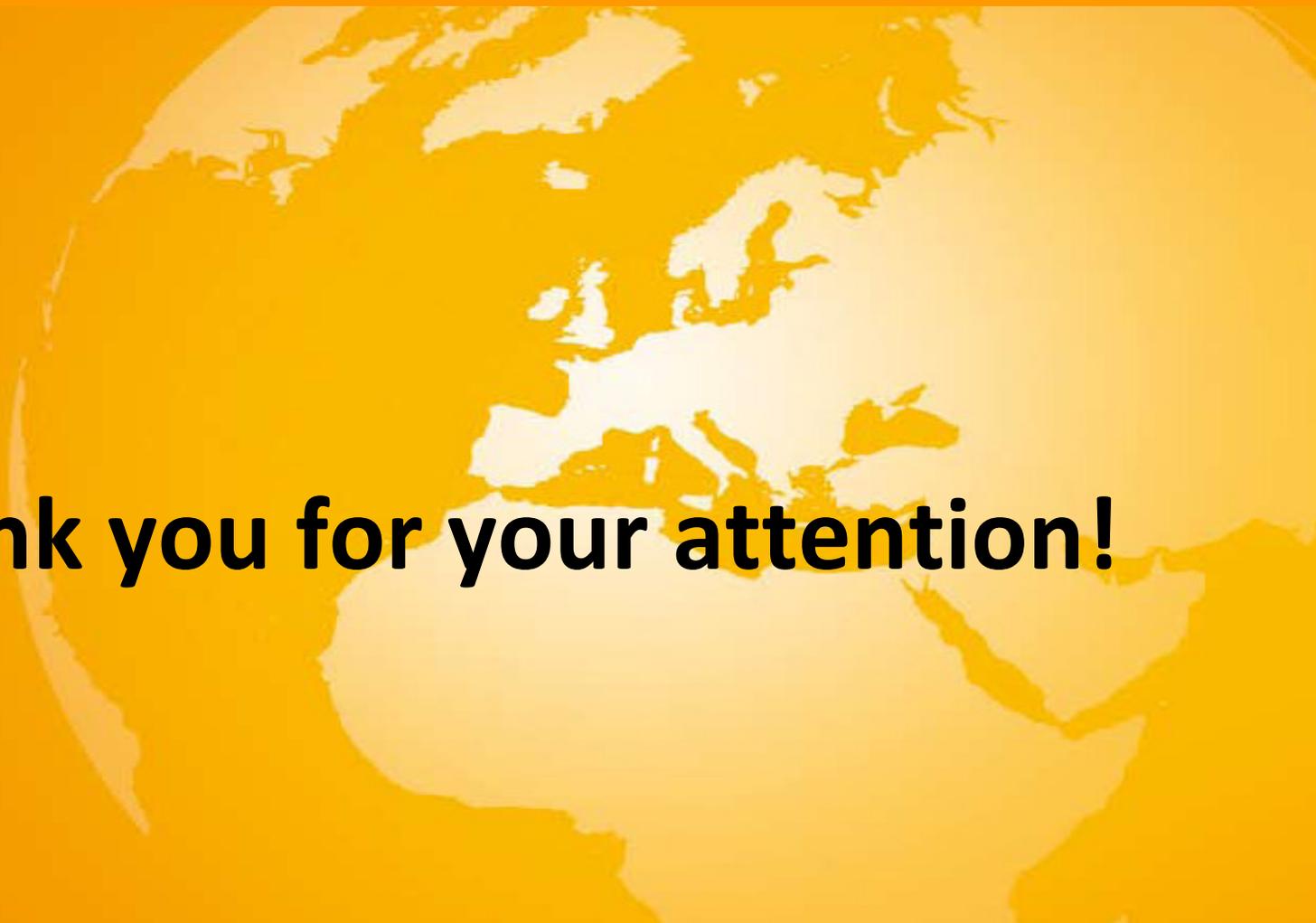
JASPERS (Joint Assistance to Support Projects in European Regions) provides advice to the 12 Central and Eastern EU Member States and Croatia during project preparation to help improve the quality of the major projects to be submitted for grant financing under the Structural and Cohesion Funds. The assistance is provided free of charge and is geared towards accelerating the absorption of the available funds.

<http://www.jaspers-europa-info.org/>

# Some final remarks

- Associated countries
- Horizontal issues
- Industry
- Education and science
- Society
- International partnership
- RAMIRI etc
- IPRs

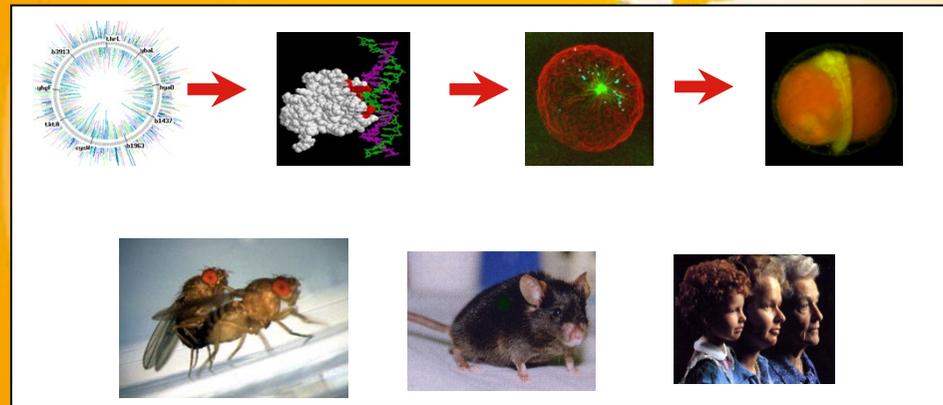




**Thank you for your attention!**

## A revolution in biology

- New / High-Throughput Technologies
- Comprehensive data, also for individuals
- Emphasis on systems, not reductionism



- Growth of translational biology – molecular medicine, agriculture, food, environmental sciences...



# ESFRI – Health and Food Domain

## Roadmap 2006

- **BBMRI** - Biobanking and Biomolecular Resources Research Infrastructure
- **EATRIS** - Translational research facilities
- **ECRIN** - Clinical trial platform
- **ELIXIR** – Data repositories
- **Infrafrontier** - Mouse archives and clinics
- **INSTRUCT** - Structural biology facilities

## + Update 2008

- **EMBRC** - Marine biology resources
- **ERINHA** - High-security labs
- **EuroBioImaging** – Imaging facilities
- **EU-Openscreen** - Chemical libraries

## + Update 2010

- **ANAEE** - Analysis and experimentation on ecosystems
- **ISBE** – Infrastructure for systems biology
- **MIRRI** – Microbial resources





Example: Healthy Ageing

# e.g. Novel Alzheimer's Drug

## Discovery

## Development

Target  
Discovery

Drug  
Discovery

Drug  
Validation

Clinical  
Testing

ELIXIR  
EATRIS  
EMBRC  
ISBE

**EATRIS**  
European  
Advanced Translational  
Research Infrastructure in Medicine



EU-OPENSREEN  
INSTRUCT  
MIRRI

**instruct**  
Integrating  
Biology



INFRAFRONTIER  
Euro-Biolmaging  
ERINHA

**erinha**  
European Research Infrastructure  
for Neuroimaging



ECRIN  
BBMRI

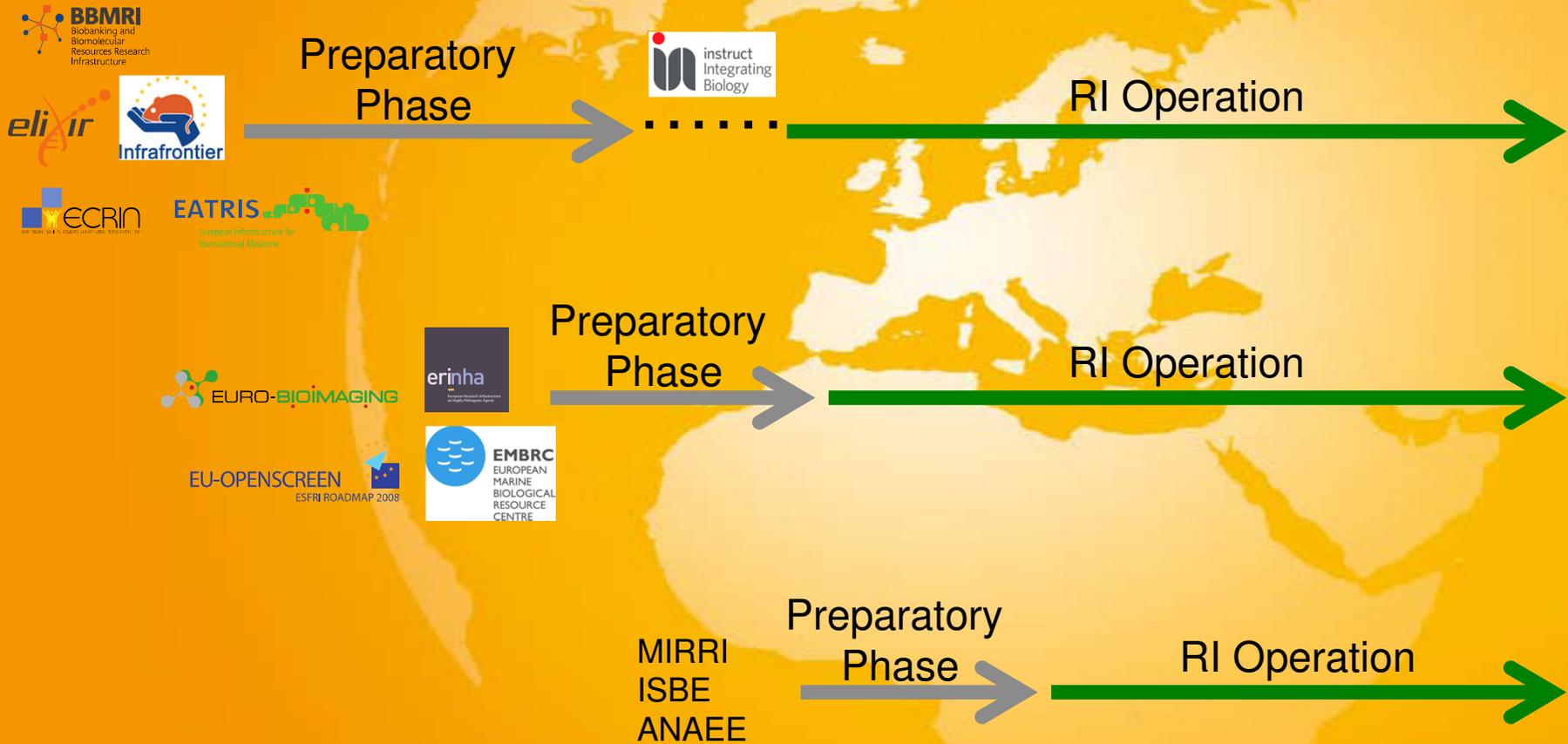
**ECRIN**  
EUROPEAN CLINICAL RESEARCH INFRASTRUCTURE NETWORK

# Timeline of implementation

2006\* '07 '08\* '09 '10\* '11 '12 '13 '14 '15 '16 '17 '18 '19 2020

FP7

Horizon 2020



# Status of projects

*CURRENT IMPLEMENTATION STATUS REPORT of Health and Food Domain Projects (BMS) was sent to Implmentation Group by August 1st 2012*

<b>Acronym</b>	<b>Title</b>	<b>Status</b>	<b>Other information</b>
<b>1. ANAEE</b>	Infrastructure for Analysis and Experimentation on Ecosystems	Will enter Preparatory Phase before end of 2012	Roadmap 2010
<b>2. BBMRI</b>	Bio-banking and Biomolecular resources Research Infrastructure	Under Implementation Phase	Roadmap 2006. ERIC application received on 3 August 2012 (AT-host, BG, CZ, EE, FI, FR, GR, IT, LV, MT, NL, NO, ES, SE)
<b>3. EATRIS</b>	European Advanced Translational Research Infrastructure in medicine	Under Implementation Phase	Roadmap 2006. ERIC application received on 1 June 2012 (NL-host, CZ, DK, FI, IT, NO, ES)
<b>4. ECRIN</b>	European Clinical Research Infrastructures Network	Under Implementation Phase	Roadmap 2006. ERIC application received on 13 July 2011 (FR-host, DE, ES, IT)
<b>5. ELIXIR</b>	European Life-Science Infrastructure for Biological Information	Under Implementation Phase	Roadmap 2006. Negotiations for an International Consortium Agreement (as Special Project of the EMBL)
<b>6. EMBRC</b>	European Marine Biological Resource Centre	Under Preparatory Phase	Roadmap 2008
<b>7. EU-Openscreen</b>	European Infrastructure of Open Screening Platforms for Chemical Biology	Under Preparatory Phase	Roadmap 2008
<b>8. Euro-Biolmaging</b>	European Research Infrastructure for Biomedical Imaging	Under Preparatory Phase	Roadmap 2008
<b>9. ERINHA</b>	European Research Infrastructure on Highly Pathogenic Agents	Under Preparatory Phase	Roadmap 2008
<b>10. Infrafrontier</b>	European Infrastructure for phenotyping and archiving of model mammalian genomes	Under Implementation Phase	Roadmap 2006. Will start as a German GmbH, will then apply for ERIC with DE as host
<b>11. INSTRUCT</b>	Integrated Structural Biology Infrastructure	Under Implementation Phase	Roadmap 2006. International Consortium Agreement signed, Instruct established as a UK Ltd. company
<b>12. ISBE</b>	Infrastructure for Systems Biology – Europe	Will enter Preparatory Phase before end of 2012	Roadmap 2010
<b>13. MIRRI</b>	Microbial Resource Research Infrastructure	Will enter Preparatory Phase before end of 2012	Roadmap 2010

# BioMedBridges

*Building data bridges between biological and medical infrastructures*

- EC funded project, €10.6M over 4 years, 21 participating organisations
- ESFRI projects: **ELIXIR (coordination), BBMRI, EATRIS, ECRIN, Infrafrontier, INSTRUMENT**
- aims at implementing a common e-infrastructure for the ESFRI BMS Research Infrastructures to allow interoperability of data and services

# Horizontal Project: EUDAT

Final report of High Level Expert Group „*Riding the Waves*“ on scientific data has shown the urgent need to deal with data management:

First consequence: Creation of a „*European Data Infrastructure*“

- Started *on 1 Oct. 2011*; coordinated by CSC - IT Center for Science, Finland, and co-funded in FP 7, 23 partners, 5 user communities from **different disciplines** (Biomed, Earth Science, Climate, SSH; ESFRI projects up to now: **ELIXIR, CLARIN, Lifewatch, EPOS** )
- aims at contributing to the **production of a Collaborative Data** Infrastructure driven by researchers' needs

# ESFRI's relation to e-IRG

- Close cooperation between e-IRG and ESFRI
- No need to have an own ESFRI Working Group e-infrastructures because of the existence of e-IRG.
- E-Infrastructure Reflection Group (e-IRG) prepared Blue Paper for ESFRI to examine how ESFRI RI and their users can exploit common e-Infrastructure service to satisfy requirements.

# Contribution of e-IRG to implementation of projects

- EU Cluster projects as candidates for developing common e-Infrastructure layer, combined with a horizontal layer e-Infrastructure project (such as EUDAT)
- Follow up of the projects „as best practises“ by new „ESFRI Implementation group“