

Managing resources  
for biomedical research



# **The European Research Infrastructure for Biobanking and Biomolecular Resources (BBMRI): Role and possible impacts of an Austria Biobank infrastructure**

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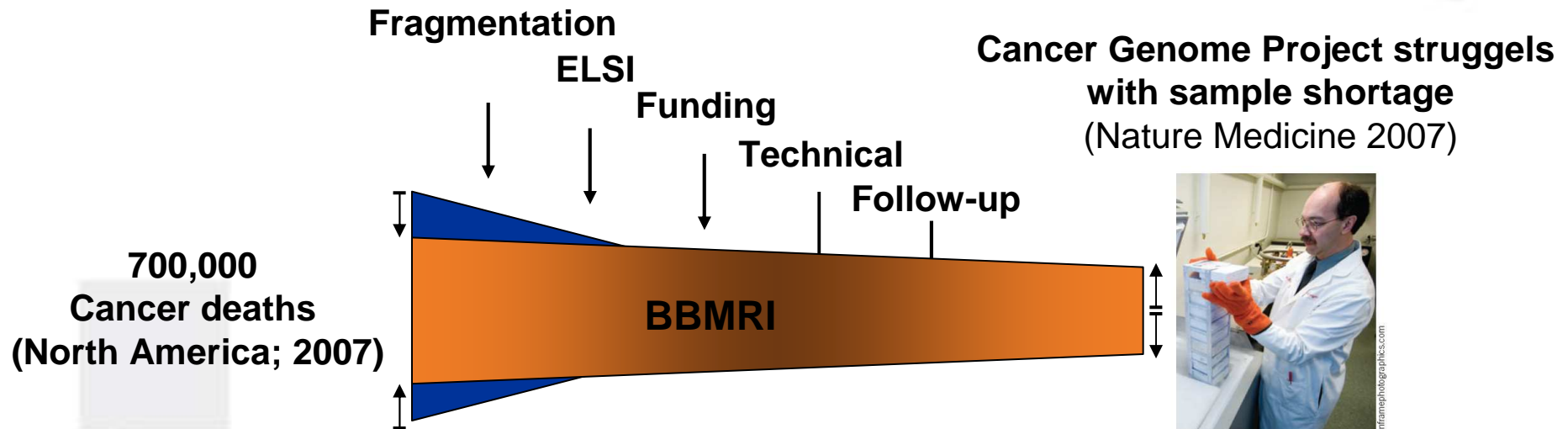
Joint Biobanking Symposium,  
Graz July 9th 2009



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Biobanking and  
Biomolecular  
Resources Research  
Infrastructure



## Biobanks in Medical Research



Long haul: The Lung Cancer  
Tissue Bank has only 20 of the 500  
samples required.

**NCI:** Biological samples are #1 roadblock

**OECD:** Global Biological Resource Centre Network

**WHO/IARC:** Standards for biological resource centres

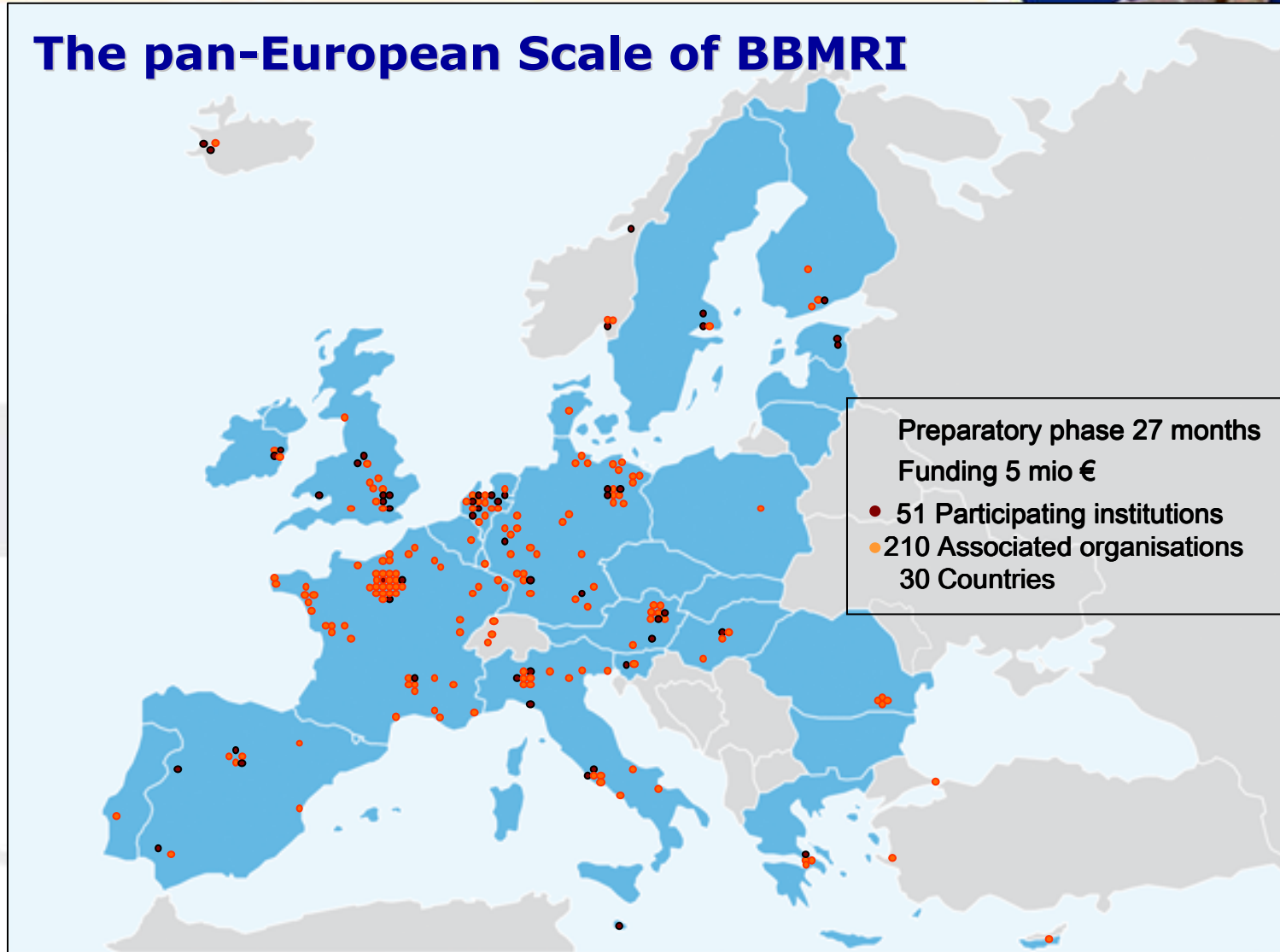
**ESF:** Science Policy Briefing: Need for integration

**EU/ESFRI:** Research infrastructure for Biobanks and  
Biomolecular Resources (BBMRI)

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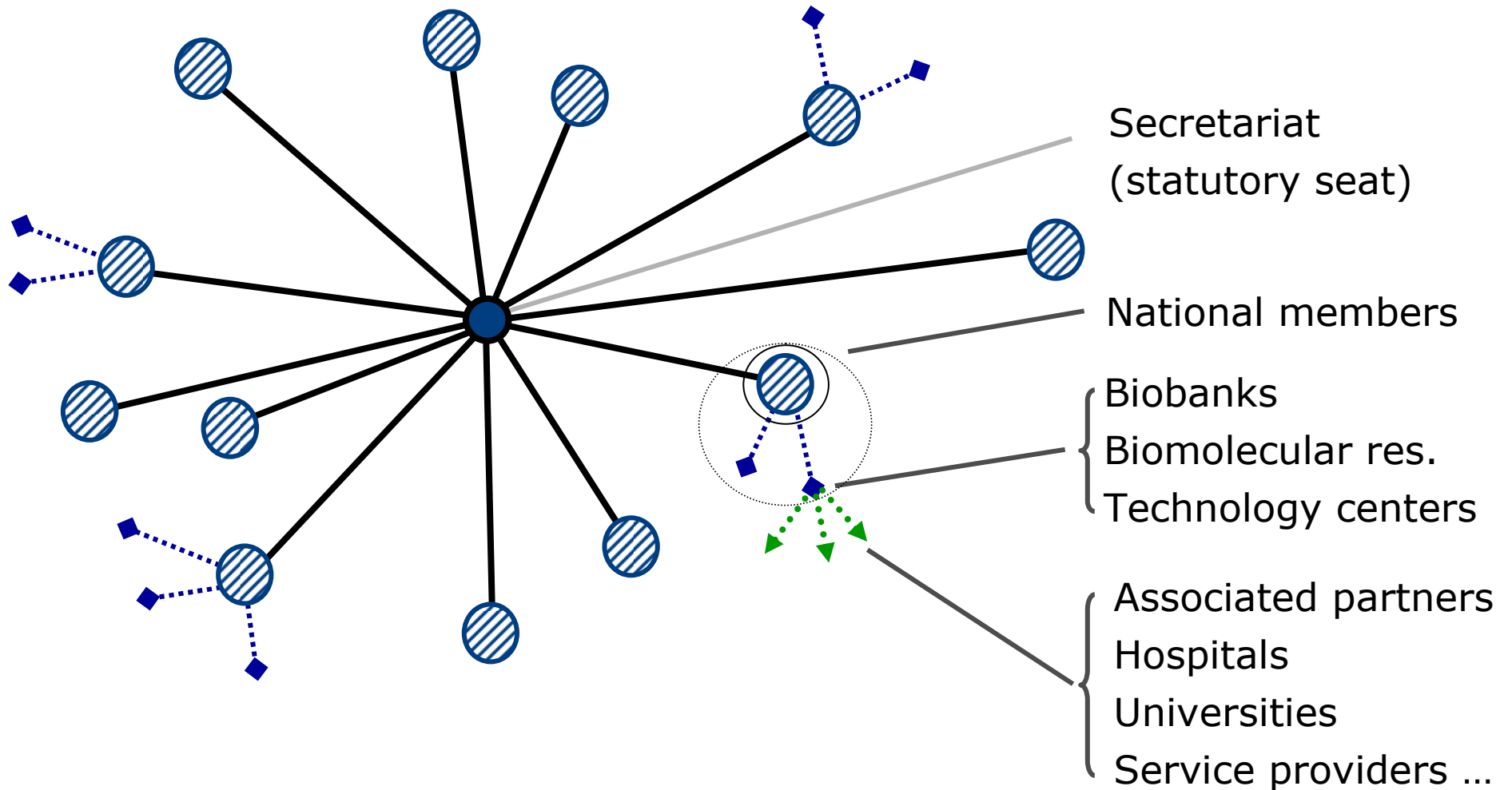


### The pan-European Scale of BBMRI

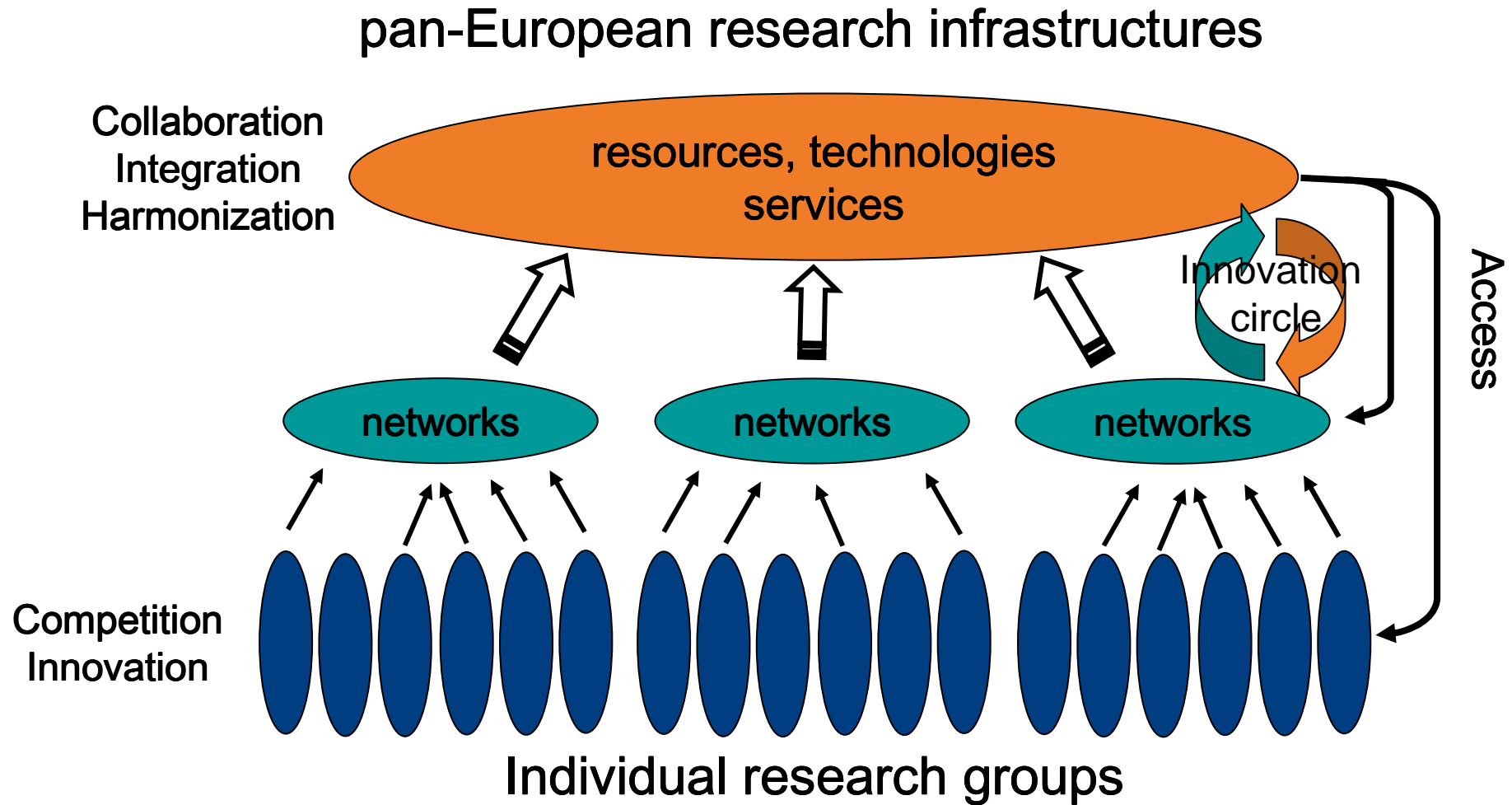


# ERIC: The Preferred Legal Structure of BBMRI

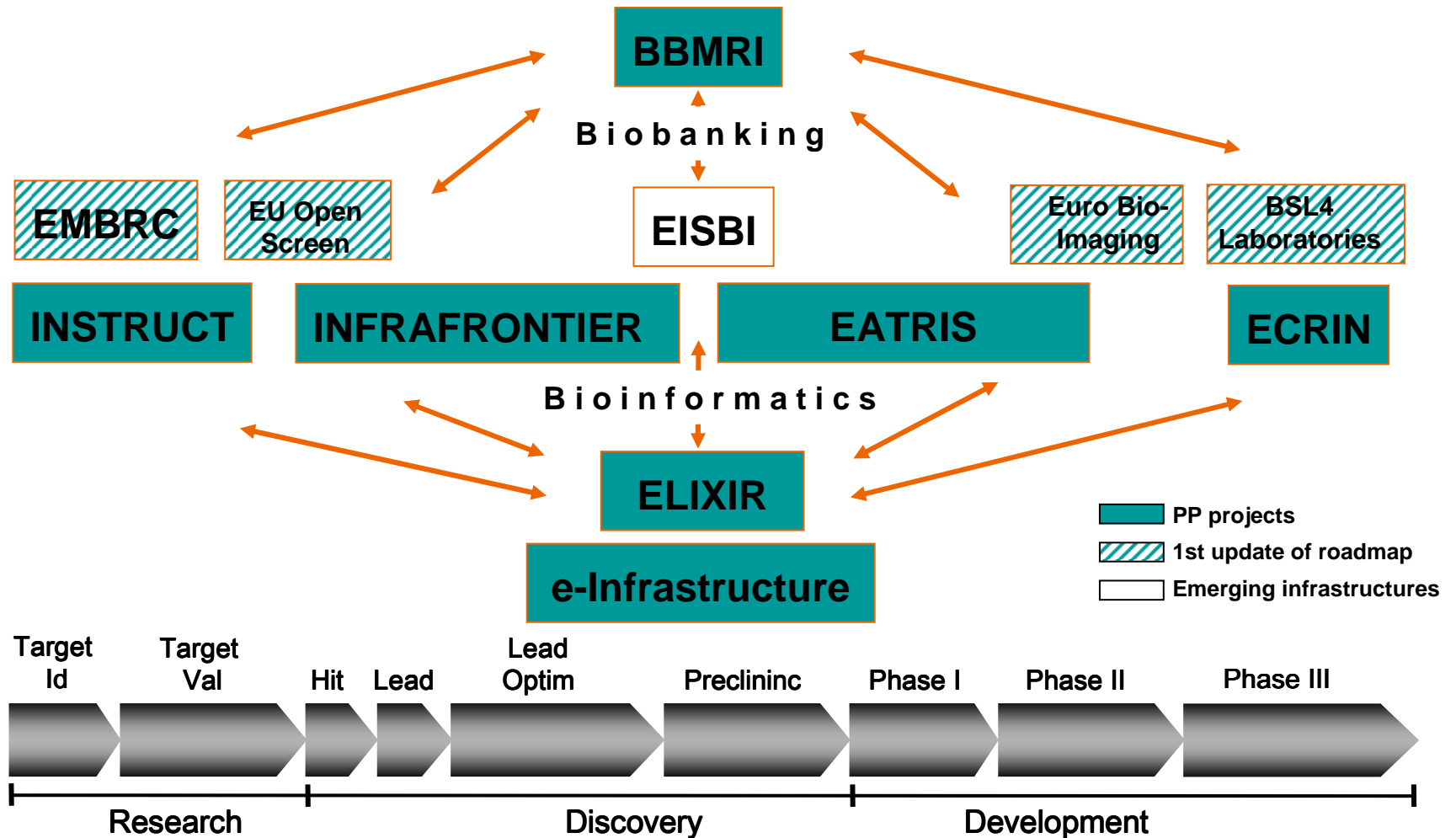
## *Distributed hub and spoke structure*



# RI: The New Dimension in Life Sciences Research



# Synergies of BMS Research Infrastructures







## What are the Big Changes?

- Elimination of bottlenecks in biomedical research
- Generation of value for society by collaboration
- Establishment of a new innovation cycle
- Generation of a homogenous legal landscape for research
- Great flexibility to address Member States needs
- Direkt positive stimulus on regional development in all participating Member States
- Facilitated participation of Southern and Eastern European Countries
- BMS research infrastructures generate an unprecedented momentum and joint forces
- Establishment of a complete value generating chain without gaps





## The Preparatory Phase of BBMRI

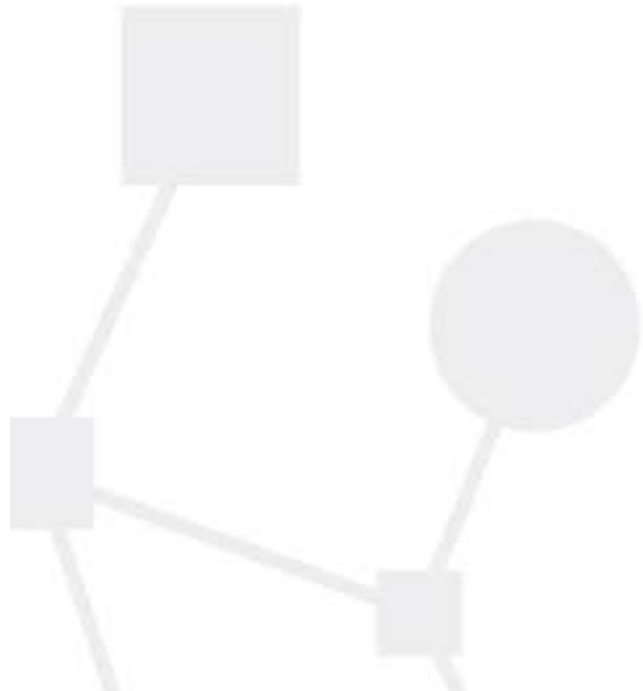
- Assessment of existing resources and technologies
- Concept for integration
- Prototype
- Infrastructure



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## Towards Implementation



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## Differences and Similarities of the OECD GBRCN and HBGRD Documents

### GBRCN

- Facility
- Personnel
- Biosecurity
- Traceability
- MDS,RDS
- Data protection
- Certification
- (Old collections)

### HBGRD

- Informed consent
- Governance
- Stakeholder
- Involvement of donors
- Data protection
- Change of scope
- (Old collections)





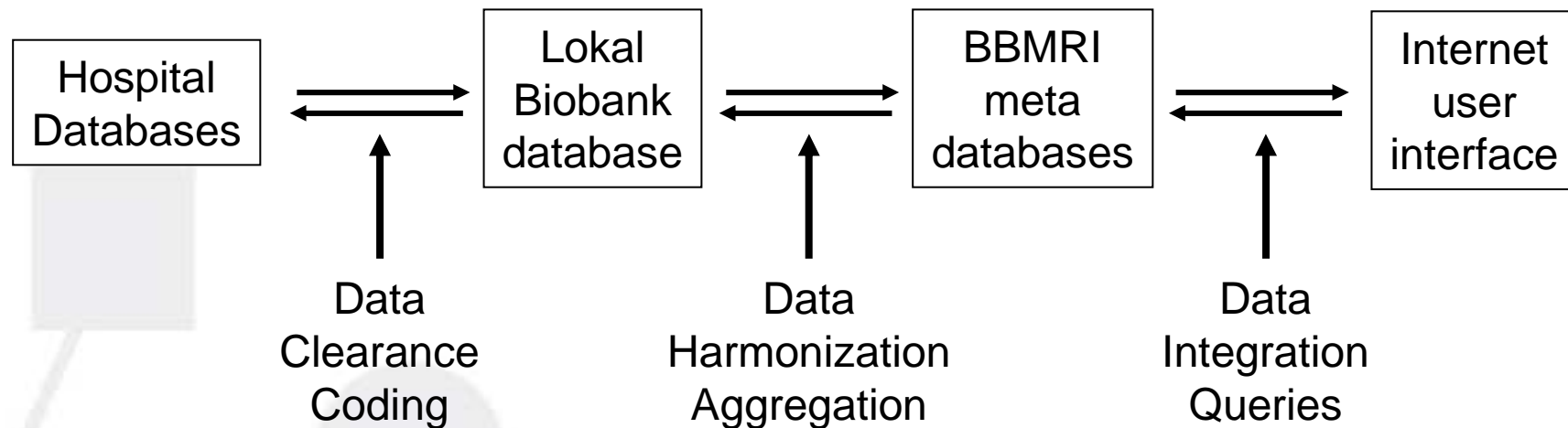
# WHO/IARC Common Minimal Technical Standards and Protocols for Biological Resource Centers dedicated to Cancer Research

- **5. SELECTED PROTOCOLS**
- **5.1. Processing of blood specimens**
- **5.1.1. Filter papers**
- **5.1. 2. Blood pellets (white cells)**
- **5.1.3. Plasma**
- **5.1.4. Platelet Poor Plasma**
- **5.1.5. Serum**
- **5.1.6. White Blood Cells**
- **5.1.7. Buffy coat cells**
- **5.1.8. Whole Blood**
- **5.2. Processing of Solid Tissue Specimens**
- **5.2.1. Snap-freezing**
- **5.2.3. Formalin Fixation**
- **5.2.4. RNA<sub>later</sub>**
- **5.3. Processing of urine and buccal cells**
- **5.3.1. Urine**
- **5.3.2. Buccal Cell**
- **5.3.2. Saliva**
- **5.4. Processing of cervical cells**
- **5.5. Processing of hair and nails**
- **5.5.1. Hair**
- **5.5.2. Nails**





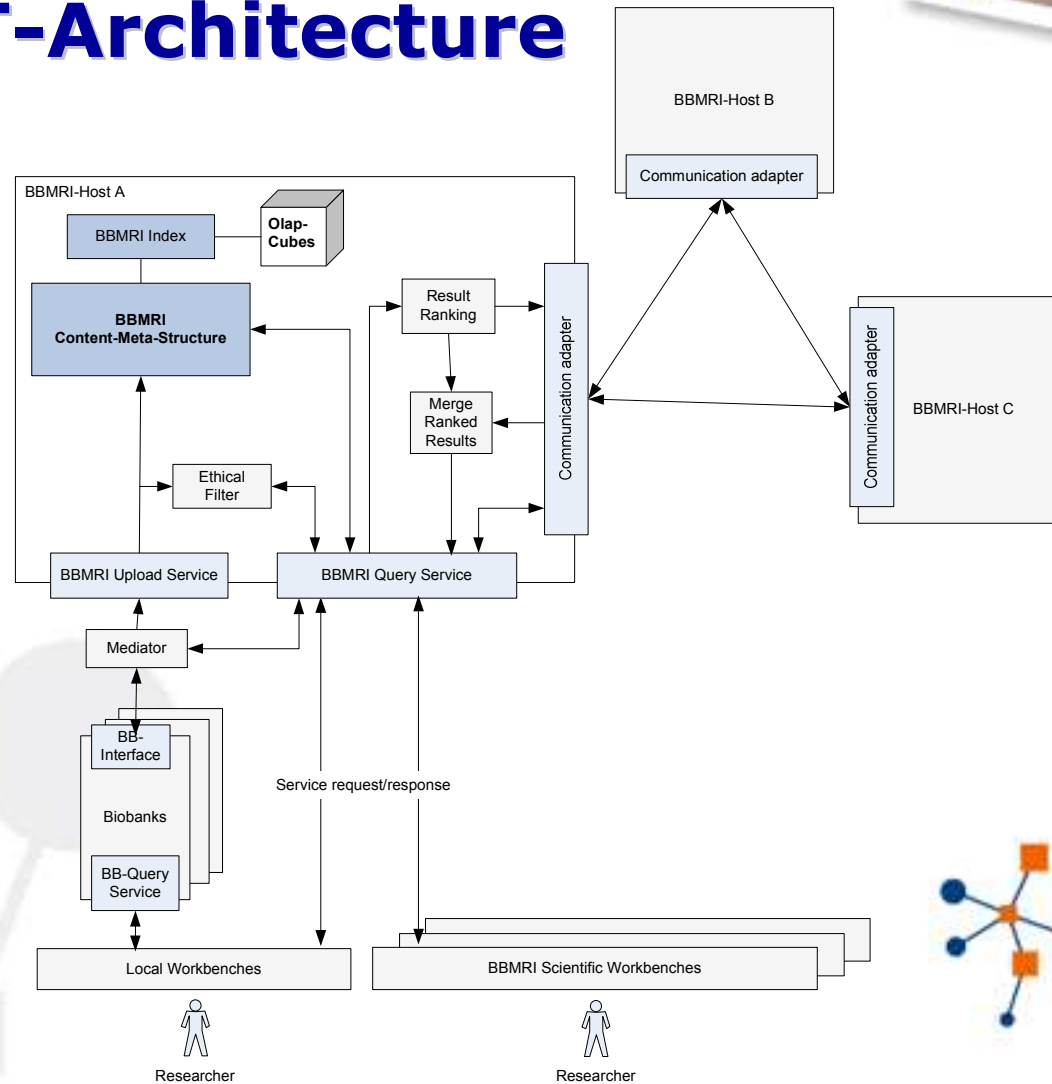
## Different Levels of Data Processing



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## BBMRI IT-Architecture



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# The Prototype

## Aims

- The prototype should fulfil the role of proof-of principle for BBMRI. After being implemented under the final legal entity of BBMRI the prototype should be scaled up to the fully working infrastructure in the construction phase of BBMRI.
- Since the construction of a prototype of BBMRI is not part of the BBMRI PP, no funding from the BBMRI PP project is available and all activities along these lines have to be on a voluntary basis.
- All activities should be well coordinated with the BBMRI-PP and results should be made available for the construction of BBMRI







## Involvement of the Biobanking Community

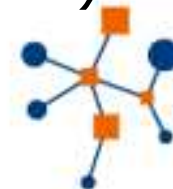
- ESF workshop, Amsterdam Dec. 06
- Establishment of FIBO, Paris, Dec. 06
- Stakeholder meeting Vienna, Feb. 07
- Presentation at EU Parliament , May 08
- Joint workshop DG Research, BBMRI, PHOEBE; Brussels, November 08
- Joint conference, Brussels, March 09
- Secretariat for OECD GBRCN, Mid 09





## Involvement of Patients

- 1st Stakeholder meeting: Brussels, March 20th 09 (Chair: M. Griffith)
  - European Cancer Coalition (H. Sundseth)
  - Heart EU (M. Livingston)
  - Europ. Fed. of Crohn's and Ulcerative Colitis Associations (R. Mitchell)
  - EURORDIS (V. Bottarelli)
  - Internatl. Alliance of Patients' Organizations (S. McMahon)
  - Europ. Genetic Alliance Network (A. Kent)
- 2nd Stakeholder meeting: Brussels, September 16th 09





## Involvement of Industry

- Specific issues
  - Quality management
- Projects: Proof-of-concept
- Strategic issues
  - Long-term strategy for PPP (EFIPA, EDMA)
    - Joint analyses centers
    - Biomarker centers
    - Biobanking service

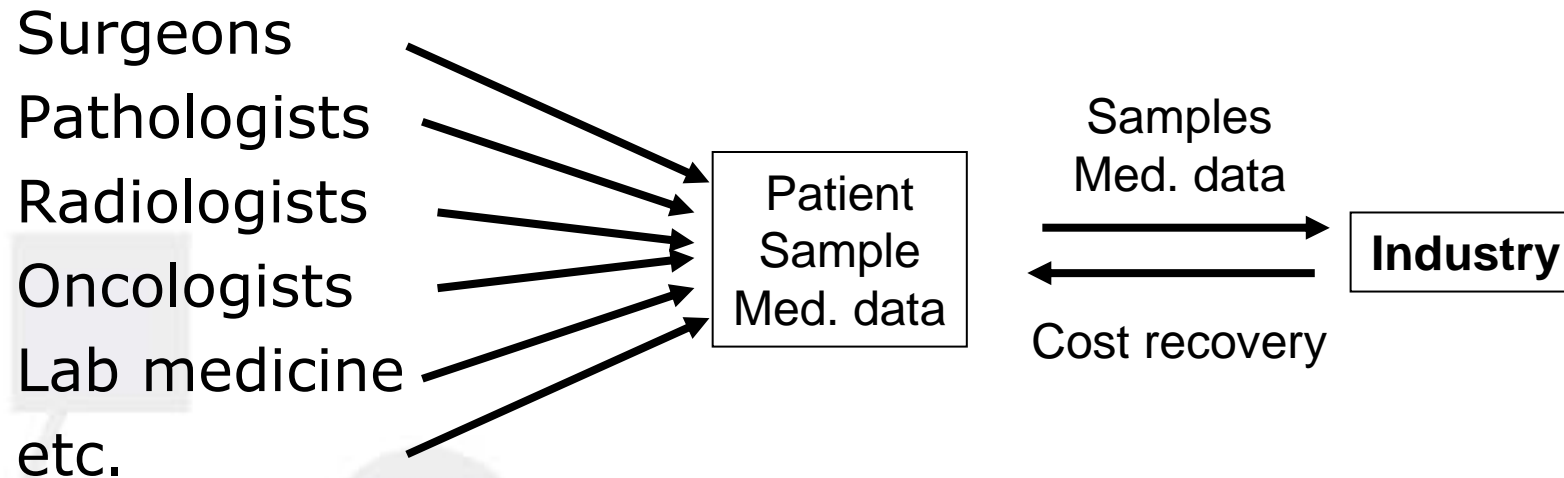
Expert centers



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## Access by the Industry

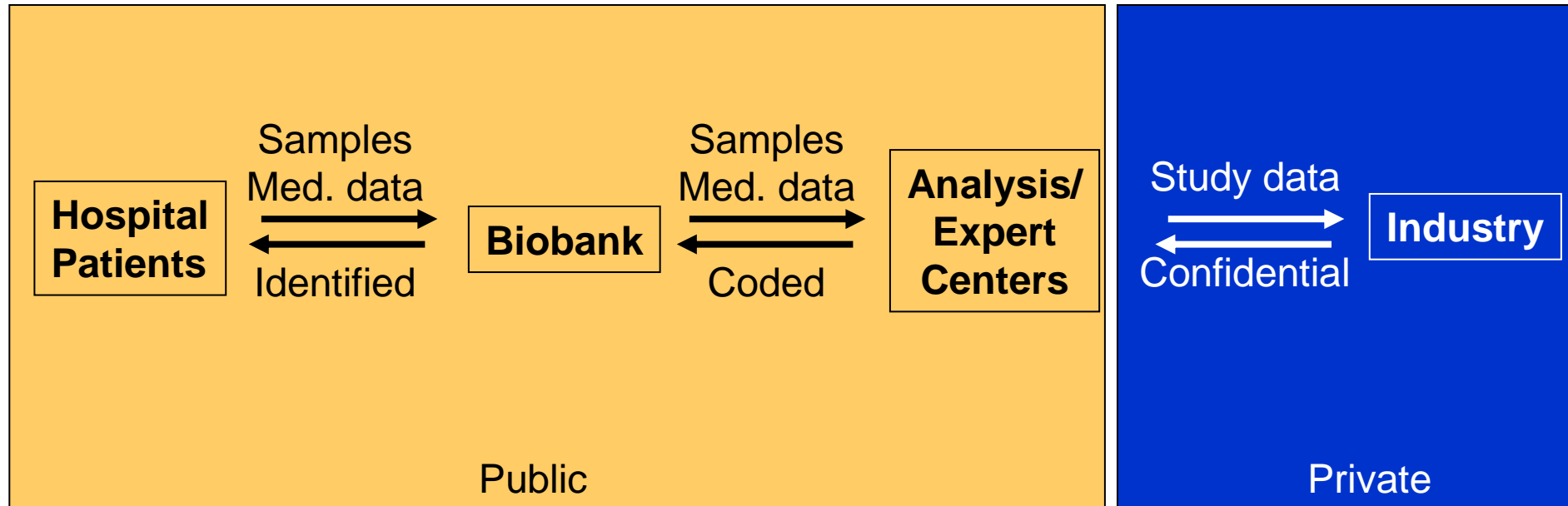


**Problem if no scientific collaboration is possible since cost recovery is no reasonable incentive for contributors**

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# A New Model of PPP for Efficient Access of Industry







## Analysis/Expert Centers

- Specifications defined together with industry
- Industry participates in QM
- Participation in ring trials
- Certification
- Projects performed like CRO
- Financing by using EIB loans and structural funds





## BBMRI and Publics

- Socio-economic impact study  
(impact on science, economy, health care)
- Public perception (focus groups and Eurobarometer)
- Coordinated communication strategy of all BMS research infrastructures (joint task force)
- White paper for European Parliament





## BBMRI Socio-Economic Impact Study

- Technopolis: Ex-ante evaluation
- BETA: Ex-post evaluation
- EuroCryo Saar: Case study for regional effects
  - Impact on science
  - Impact on economy
  - Impact on health care



## Expected Direct Impact of BBMRI

- BBMRI should provide a pan-European framework to foster excellence in biomedical research
  - Better projects, faster, cheaper
- Access to high quality resources, technologies, services, education and training
- Partner for academia and industry
  - SMEs: Strategic partner, customer
  - Pharma: Biomarker and drug development
- Incubator for regional development
  - Start-up packages





## White Paper: Key Messages

ESFRI BMS infrastructures will

- lay the foundation for improved health care for European citizens
- Provide unique opportunity to improve competitiveness of European science and industry
  - together generate a value generating chain without gaps
  - Generate an enormous momentum
  - for the first time generate a homogenous European research space
  - Health-related economies are the potential next driver of global economy
- Requires co-ordination and collaboration at national, European, and global levels
  - Redefine research strategies
  - New business models
  - Proper legal framework
  - Sustainable funding tools



# Target Audience



## Policy-makers

- Member States: Health and Research ministries
- National Research, Science and Health councils
- European Commission: DG Research and DG Sanco
- Health and Competitiveness Councils
- Council Secretariat
- Committee of the Regions
- CREST, IGLO representation offices, FP7 NCPs
- European Parliament: ITRE and ENVI Committees, STOA, EPTA
- EU Executive Agencies

## Research community

- Academic: university and vocational education. professors and students;
- Institutes and research centres. Private and public;
- Industry: pharmaceutical, diagnostics, medical technology;
- Hospitals and other health care providers;
- Technology Platforms and JTI



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## Next Steps

- Joint web site [www.infrastructures4health.eu](http://www.infrastructures4health.eu)
  - Coordination of high impact paper
    - I. Mattaj/F. Kafatos
    - Media briefing London September 22nd (FT, Bloomberg J Law, Nature, Biotech-Pharma)
  - White paper to be communicated to the European Parliament
    - August 1st, draft
    - November 5th, formal hearing
- Europe by Satellite (EBS)  
Spanish, Belgium Presidency





## Advanced ESFRI-PP Projects

Field	Infrastructure
SSH	Clarín
	ESS survey
EnvS	Euro ARGO
	ICOS
BMS	BBMRI
MAF	ESRF
PSE	E-ELT Prep
	ELI-PP
E-Infra	PRACE



## **The BBMRI Team: WP Leaders and Chairs**

<b>Coordination/Executive Mgmt.</b>	<b>K. Zatloukal, AT; E. Vuorio, FI M. Yuille, UK; M Pasterk, FR</b>
<b>Population-based Biobanks:</b>	<b>L. Peltonen, FI/UK; A. Metspalu, EE</b>
<b>Disease-oriented Biobanks:</b>	<b>E. Wichmann, GER, T Meitinger, GER</b>
<b>Biomolecular Resources:</b>	<b>U. Landegren, SE; M. Taussig, UK</b>
<b>Databases &amp; Biocomputing:</b>	<b>J-E Litton, SE</b>
<b>Ethical, Legal and Societal Issues:</b>	<b>A. Cambon-Thomsen, FR</b>
<b>Funding and Financing:</b>	<b>G. Dagher, FR; J. Ridder, NL C. Brechot, FR;</b>
<b>Governance Council Chair:</b>	<b>L. Peltonen, FI</b>
<b>Advisory Board Chair:</b>	<b>G-J van Ommen, NL</b>
<b>Coordination Board Chair:</b>	<b>K. Zatloukal, AT</b>
<b>Stakeholder Forum Chair:</b>	<b>M. Griffith, IR</b>

**51 Participants (6 Ministries, 18 Funding Organizations)**

**210 Associated Organizations 30 Countries**

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### Further information

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M. Yuille et al. *Briefing in Bioinformatics* 9: 14-24 (2008)

