

Finding Funding for EuCAI...

Understanding our opportunities with case examples: Institut Pasteur and France



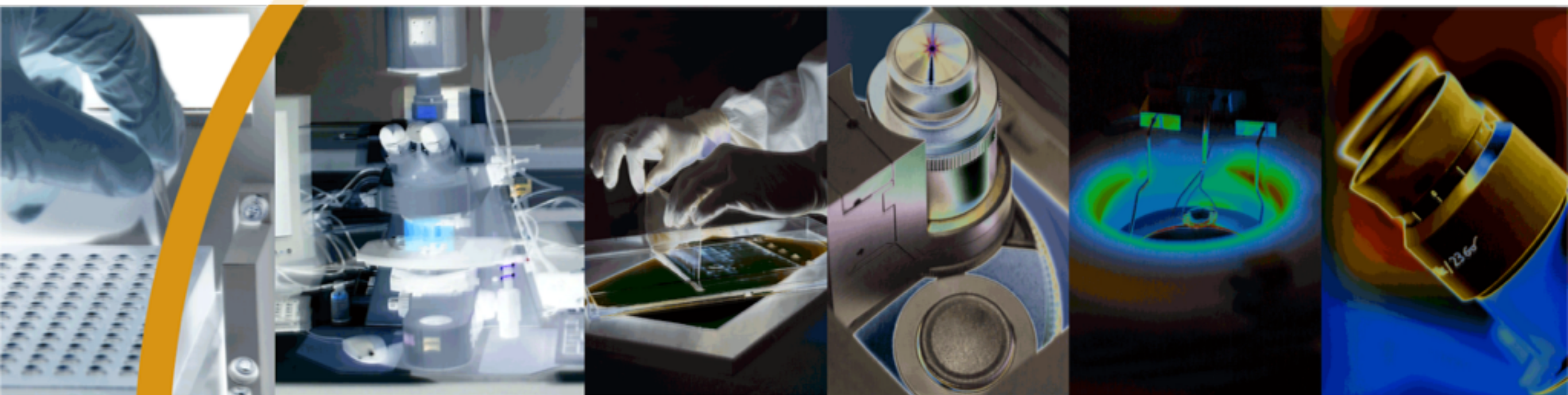
Spencer Shorte
Institut Pasteur Paris



18/19 February 2013 EuCAI, Trinity College Dublin
Organized by Peter Hovarth & Anthony Davies



www.iledefrance.fr



Finding funding: Faith, Hope, Charity & Science...



Institut Pasteur



- **International vocation since its creation :**

- ↳ First institute abroad : Vietnam in 1891
- ↳ New members : Korea (april 2004), China (october 2004), Canada (june 2005) and Uruguay (june 2006).



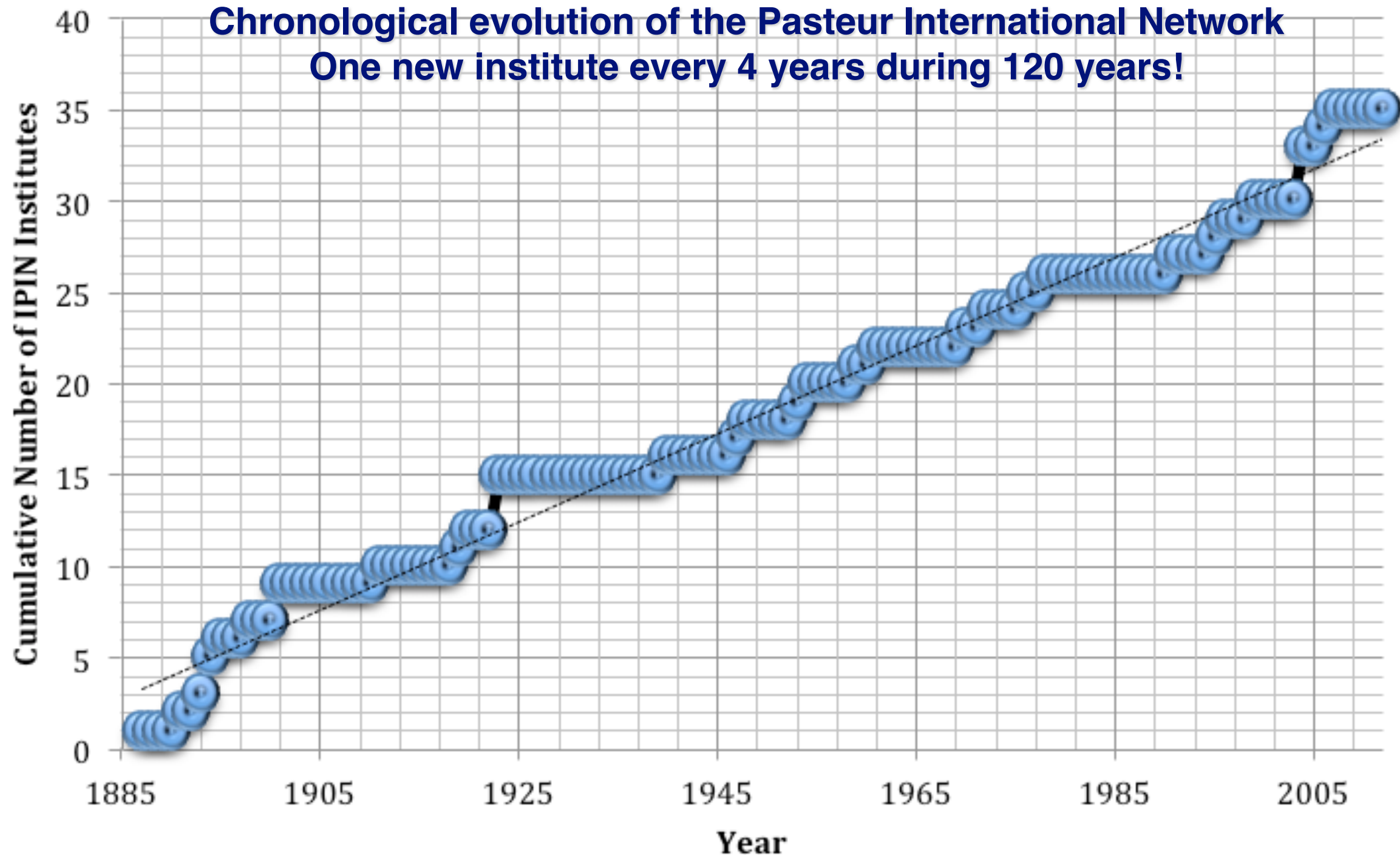
- **30 institutes Pasteur gather about 9 500 people spread over 5 continents**

- ↳ in agreement with the local health authorities
- ↳ within that international network, the institutes share their knowledge, their research programs and keep control of the development of infectious diseases

Institut Pasteur International Network: A powerful model for academic/industrial/government collaboration



Institut Pasteur



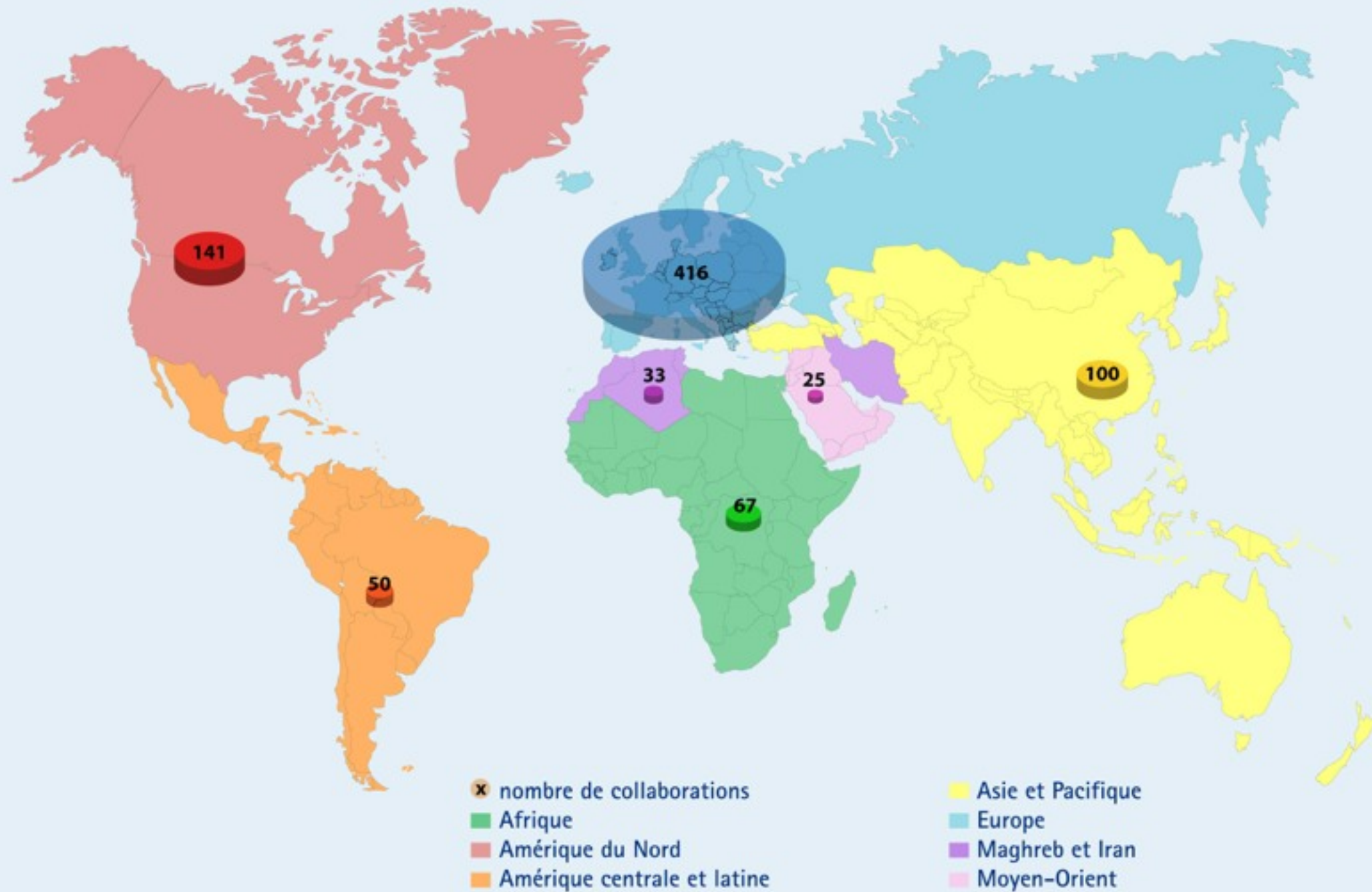
Institut Pasteur - Global collaboration

120^{ème}
anniversaire

Institut Pasteur



Collaborations internationales de l'Institut Pasteur en 2006 : 832



The secret of the success of Pasteur...

- **GOVERNMENT**

- **ACADEMIC**

- **INDUSTRIAL**

The Holy Trinity- Financing successful collaboration...

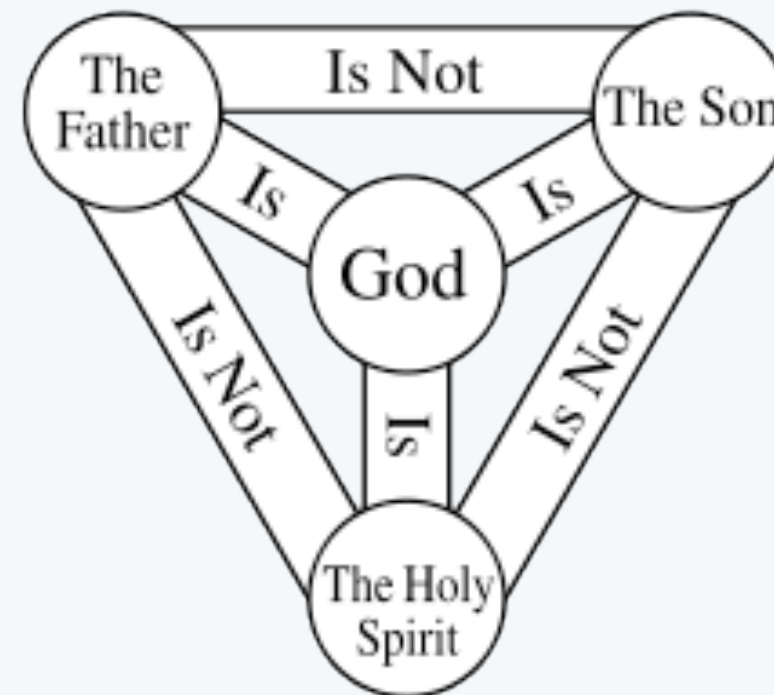


Institut Pasteur



Government

Academic



Industrial

Science requires collaboration between...

Government

Academic



Industrial

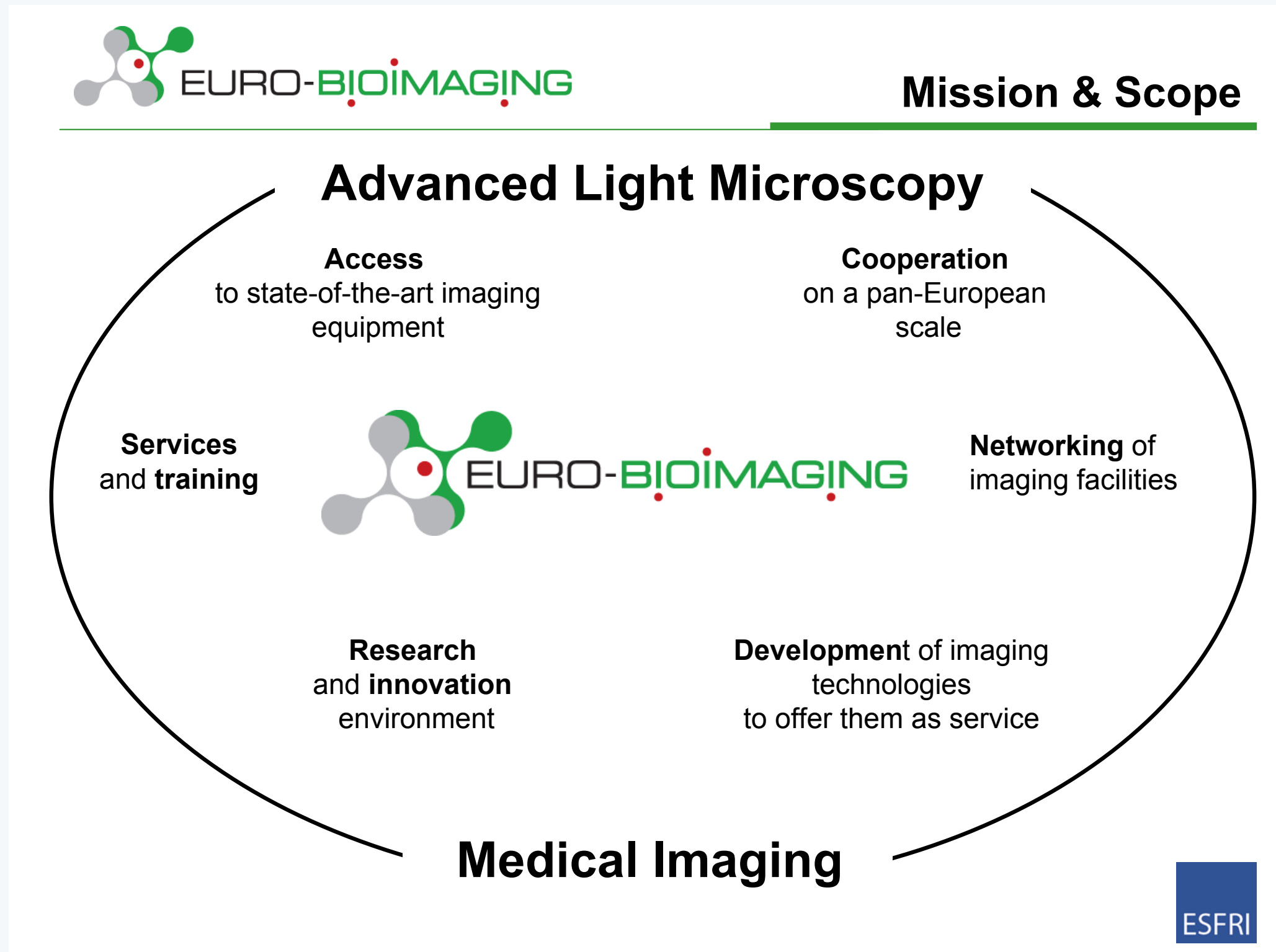
- **LOCAL INSTITUTIONAL**
- **LOCAL CITY/REGIONAL**
- **NATIONAL GOVERNMENT**
- **INTERNATIONAL (EUROPEAN)**
- **INDUSTRIAL...**

Where does HCA fit inside the ESFRI vision?



**European Biomedical Imaging Infrastructure—
from molecule to patient**

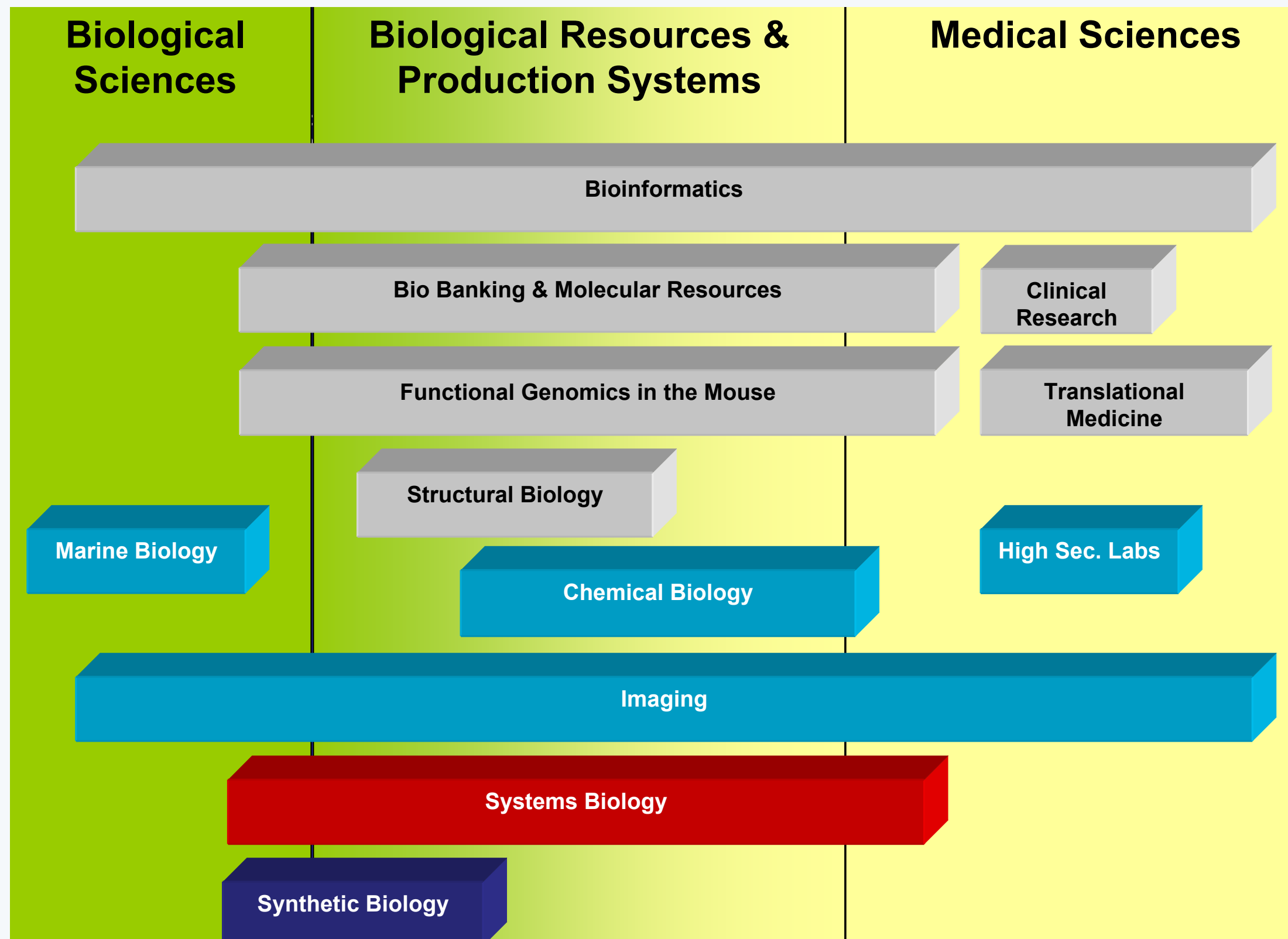
Where does HCA fit inside the ESFRI vision?



Where does HCA fit inside the ESFRI vision?



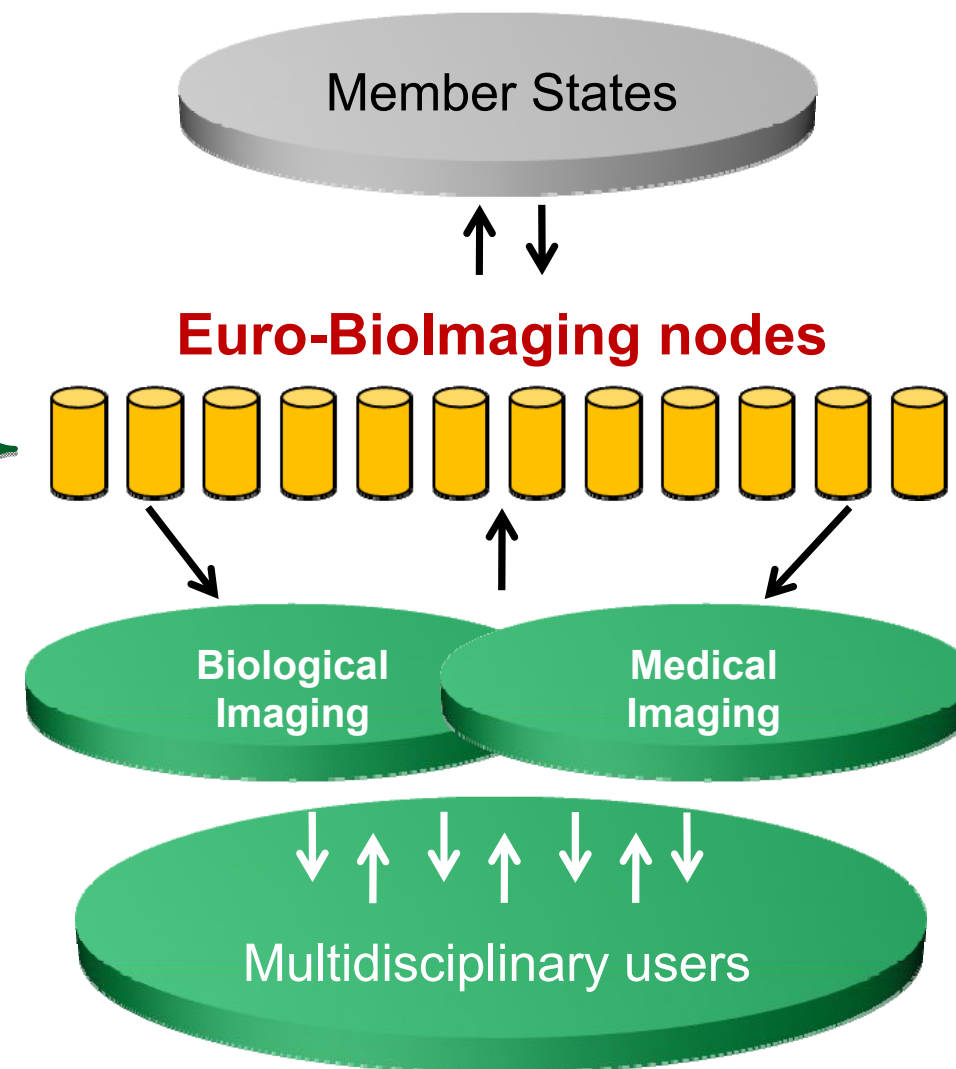
Institut Pasteur





The Infrastructure

- **Strongly interlinked nodes**
- **Topical nodes**
specific to biological/medical imaging
- **Service nodes**
address needs of both imaging
- **Newly constructed or major upgrades**
- **Devote significant part of their capacity to external users**
- **Embedded in existing European imaging facilities**



ESFRI



The French national/regional level vision...

Program Investment Avenir (PIA)

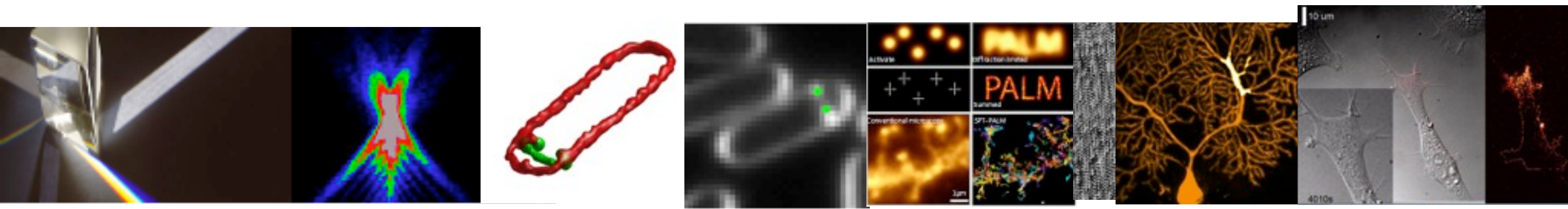
LabEx(MI, IBEID, Dev)

PIA



InfraStruc (FBI, FLI, IRT)

EquipEx (StructuralBiol)



France Bio-Imaging

<http://france-bioimaging.org/>

An infrastructure in cell biology
Imaging from the french network of
IBiSA imaging facilities in France

IBiSA: Infrastructure en Biologie Santé et Agronomie <http://www.ibisa.net/>



FRANCE-BIOIMAGING



France Biolmaging Nodes...



5 regional nodes

1 transversal node

France BioImaging Nodes...

Marseille

PF Lenne

New cell imaging modalities
for developmental biology
and immunology

Bordeaux

D Choquet

SuperCLEM for neuronal
pathologies and for plant
physiology

Montpellier

C Royer

New cell imaging modalities
for genome function analysis

Ile de France Sud

N Peyrières

New cell imaging modalities
for morphogenesis analysis

Paris – Centre (*J Salaméro, M Coppey-Moisán*)

Institut Curie

J Salaméro

Institut Jacques Monod

M Coppey-Moisán

ENS

A Triller

ImagoPole-Pasteur

S Shorte

Wave front engineering
microscopy group (P5)

V Emiliani

Multi scale Multi organism imaging for cell biology and cancerology

Image Processing and Data Manipulation
JC Olivo-Marin (Pasteur), C Kervrann (INRIA, Rennes)

Image data manipulation
Image and signal processing, analysis, quantification and modeling

Institut Pasteur
JC Olivo-Marin

INRIA (Rennes)
C Kervrann

France BioImaging Work Packages

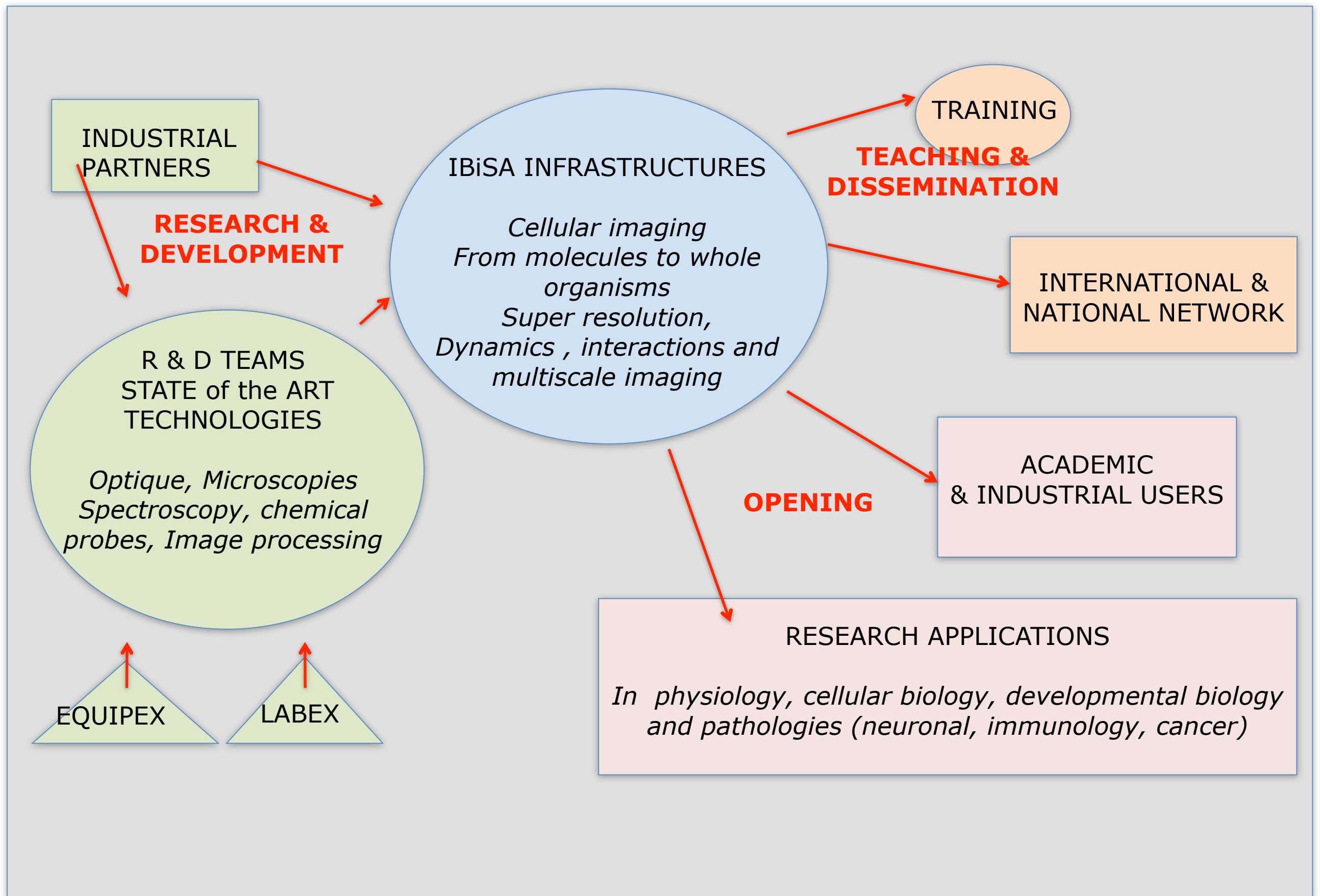
WP1
**Instrumentation &
Methods**

WP2
**High Throughput &
High Content
Screening**

WP3
**Probe
development,
Optomanipulation,
Optogenetics**

WP4
**Image Processing
and Data
Manipulation**

WP5
**Training,
Dissemination &
Technological
Transfer**



FBI Financial

1. Investissement Phase 22 M€

Starting nov 1st 2011 over 5 years

Equipment	14 281 000 €
Non permanent position	4 665 454 €
Functioning	3 053 546 €

60 000 € for coordination and training
(in addition to the Project Manager's salary)

2. Functioning Phase 4 M€ from starting date to the end, march 2019

60 000 €/year for coordination and training

Need of other funds for user access



Program Investment Avenir (PIA) - FLI

LabEx(MI, IBEID, Dev)

PIA



InfraStruc (FBI, FLI, IRT)

EquipEx (StructuralBiol)

Program Investment Avenir (PIA) - FLI

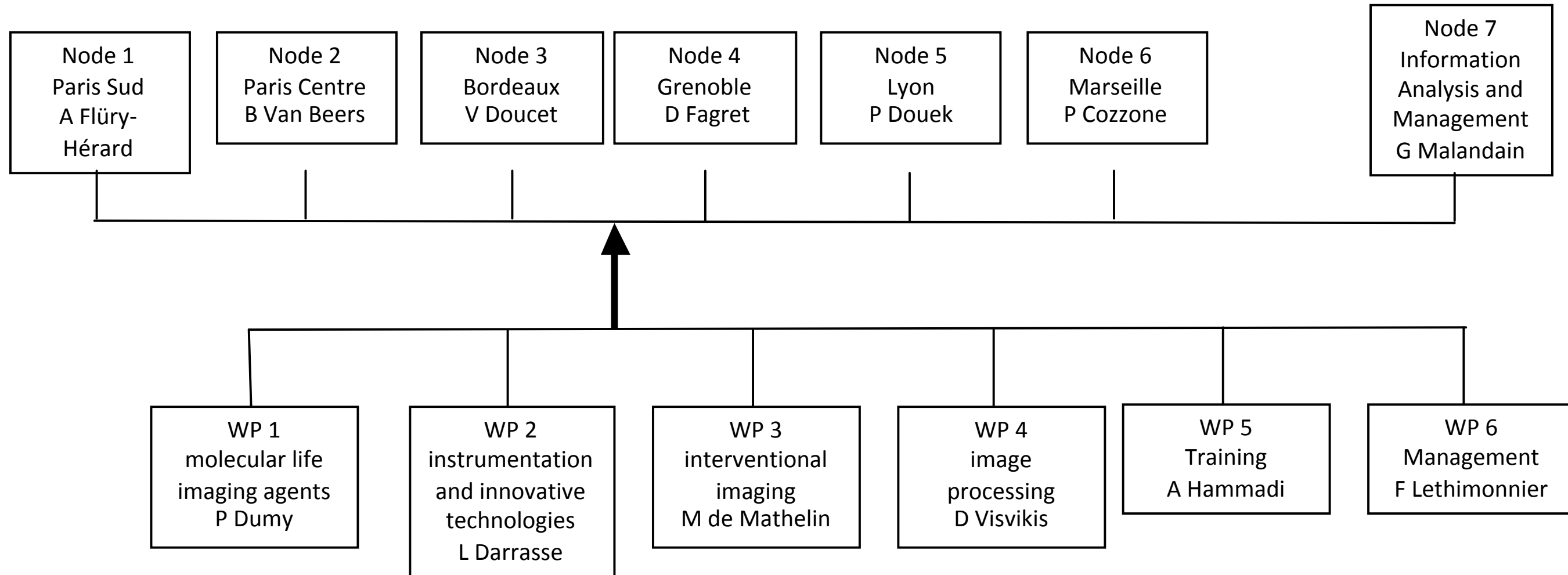
Continuum between Cell biology Imaging and Medical Imaging

From single molecules - to cells - to tissues - to organs - to animals and humans
Embryo & small animal models



Program Investment Avenir (PIA) - FLI

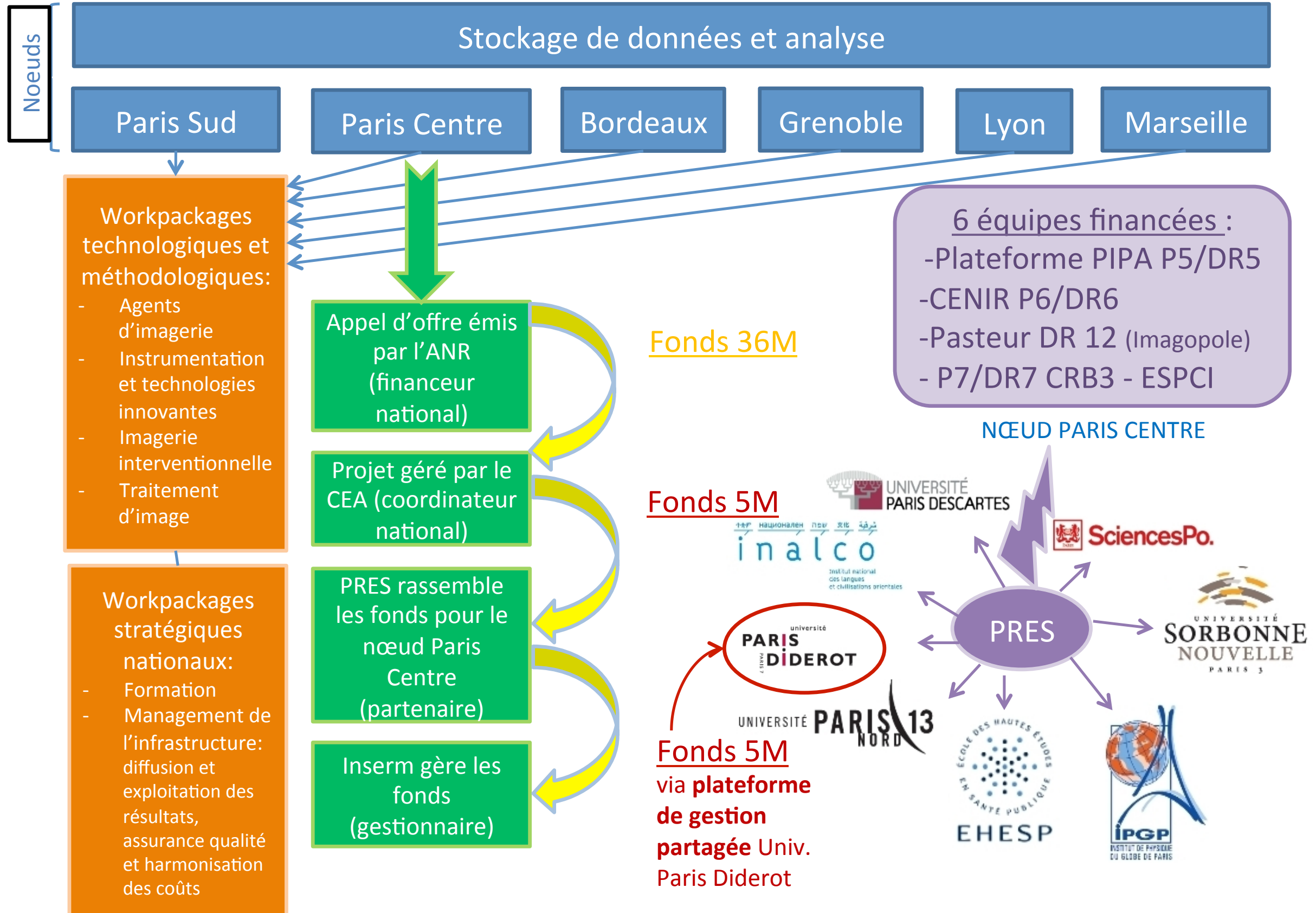
Organization scheme of France Life Imaging



Program Investment Avenir (PIA) - FLI

FLI : France Life Imaging

Programme « Infrastructures nationales en biologie et santé »





Program Investment Avenir (PIA)- IRT

LabEx(MI, IBEID, Dev)

PIA



InfraStruc (FBI, FLI, IRT)

EquipEx (StructuralBiol)

IRT LyonBioTech Contexte et enjeux

Acteurs fondateurs de LyonBioTech

2 co-leaders :

- Lyonbiopôle
- Institut Pasteur

3 grands industriels :

- Sanofi
- Institut Mérieux
- Danone Research

3 organismes de recherche :

- INSERM
- CNRS
- CEA

1 collège de près de 50 PME de Rhône-Alpes et d'Ile-de-France

2 sites

Lyon : Gerland

Paris : Institut Pasteur



Chiffres clés

800 M€ de budget sur 10 ans

180 M€ d'aides publiques

40 projets R&D seront lancés d'ici 3 ans

10 000 nouveaux emplois directs et indirects

40 000 m² de nouvelles infrastructures dédiées

Des programmes structurants pour l'étude des maladies infectieuses

3 programmes de R&D :

- Nouvelles **thérapies** et **vaccins**
- Vers le **diagnostic** en temps réel
- Le **microbiote** : un indicateur et un produit de santé

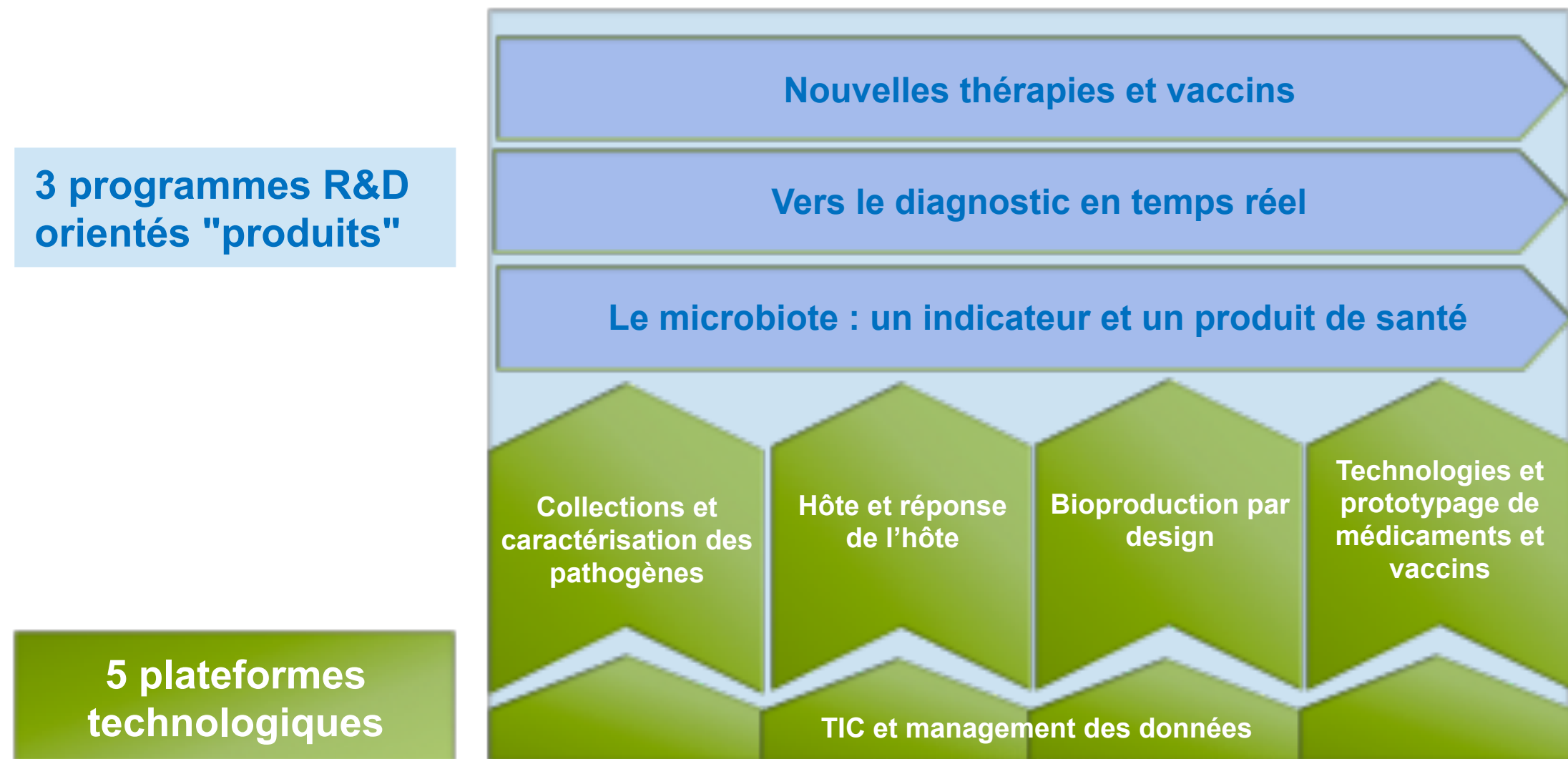
5 plates-formes technologiques :

- Collections et caractérisation des pathogènes
- Hôte et réponse de l'hôte
- Bioproduction by design
- Technologies et prototypage de médicaments
- TIC et management des données

Program Investment Avenir (PIA)- IRT

Un modèle inédit au service de l'innovation en infectiologie

Un modèle public – privé reposant sur une approche intégrée, interdisciplinaire et collaborative de la R&D en infectiologie

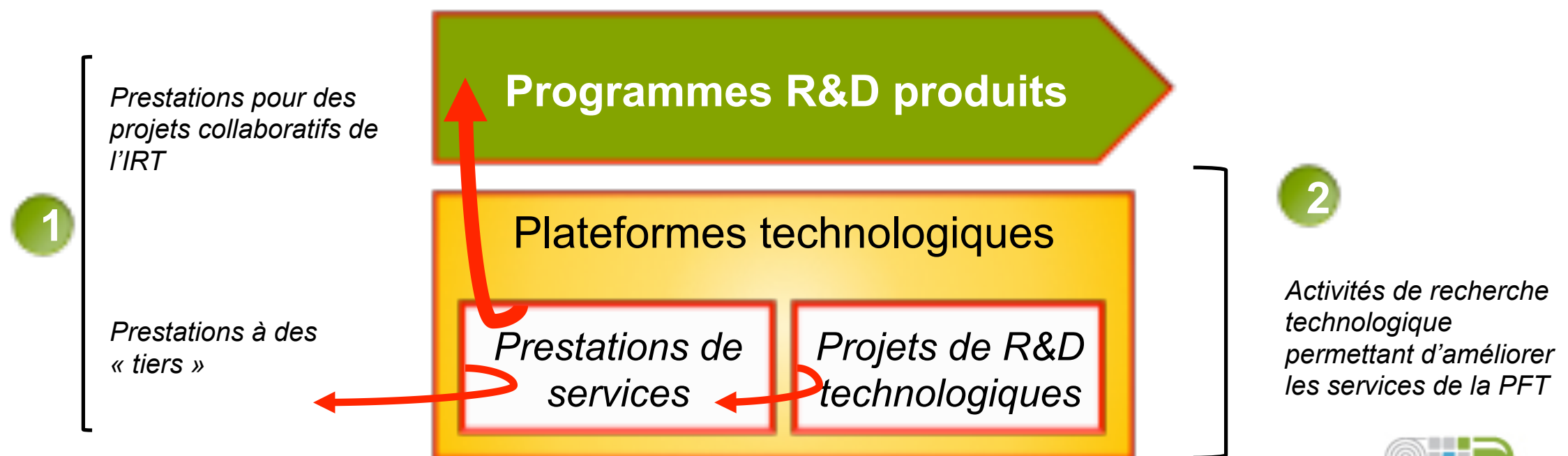


Program Investment Avenir (PIA)- IRT

Activités des plateformes

Les plateformes auront 2 grands types d'activités :

- 1
 - une **activité de services** de haut niveau avec des technologies en configuration optimale (plateaux exploités principalement par des PME), activité destinée :
 - aux projets collaboratifs R&D « produits » menés par l'IRT – (activité majoritaire)
 - à des clients « tiers » (i.e. en dehors des projets collaboratifs IRT) – (Activité minoritaire)
- 2
 - une **activité de recherche** technologique dont les résultats permettront d'améliorer les services de la plateforme

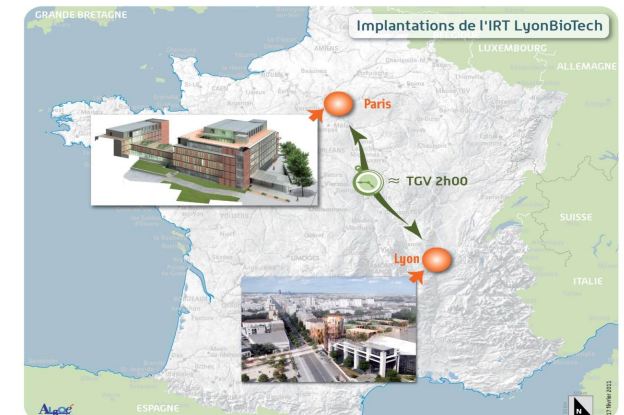


Program Investment Avenir (PIA)- IRT

Installation et localisation des plateformes

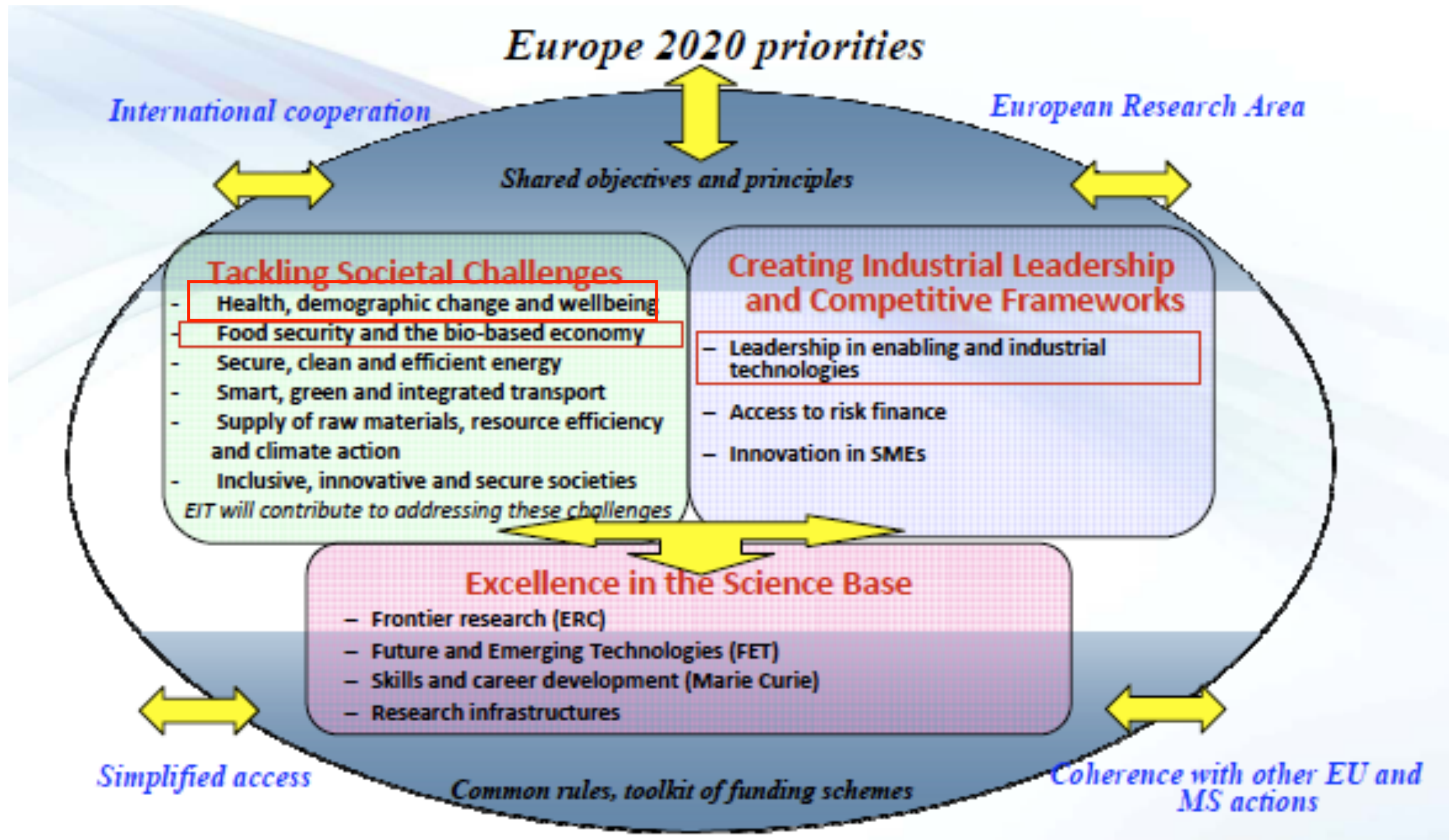
Objectif : concentrer les moyens et les compétences

- Dès que possible, **les plateformes et leurs plateaux techniques seront localisés sur le site principal de l'IRT (Lyon-Gerland) et son site associé (Paris-Institut Pasteur)**
- **A court terme**, les surfaces de l'IRT disponibles à Lyon et Paris seront trop faibles pour accueillir l'ensemble des plateformes. Il est donc envisagé qu'une partie des plateaux techniques soit **hébergée de façon provisoire dans des surfaces mises à disposition** par des partenaires de l'IRT ou des tiers.
 - Ex : hébergement provisoire d'un plateau technique chez la PME qui a été mandatée pour l'exploiter
 - Ex : hébergement provisoire d'un plateau technique chez un partenaire académique de l'IRT, chez qui du personnel de l'IRT (ou d'une PME mandatée) va venir renforcer les moyens pour exploiter le plateau.



A SCARY & UGLY OLD-SCHOOL EU PENN DIAGRAM!!!

Horizon 2020: objectifs et structure



HORIZON 2020

What might it have in store for us..?



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HORIZ  N 2020



The challenge

Europe needs:

- The best science
- The best science-based innovation
- The best scientific training and careers
- The best research infrastructure



EU support for the science base - State of play

Achievements:

- A series of successful, well-regarded programmes
- Well-functioning scientific governance (ERC ScC, ESFRI...)
- Significant European added-value

Challenges:

- Consolidation of successful schemes
- Adjust to the new context - EU2020, innovation, common strategic framework
- Improved impact and efficiency,



Excellent Science

Objective: to reinforce and extend the excellence of the Union's science base and to consolidate the European Research Area in order to make the Union's research and innovation system more competitive on a global scale.

European Research Council (ERC) attractive and flexible funding to enable talented and creative individual researchers and their teams to pursue the most promising avenues at the frontier of science, on the basis of Union-wide competition.		13 268
Future and emerging technologies (FET) support for collaboration across disciplines on radically new, high-risk ideas and accelerate development of the most promising emerging areas of science and technology		3 100
Marie Skłodowska Curie Actions (MSCA): excellent and innovative research training, attractive research careers and knowledge-exchange opportunities through cross-border and cross-sector mobility of researchers		5 752
Research infrastructures (RI): develop European research infrastructure for 2020 and beyond, foster their innovation potential and human capital, and complement this with the related Union policy and international cooperation		2 478

Figures in constant (2011) prices

€24 578m

Science driven principles

- **Excellence-based** (NB: not exclusive to this part of H2020!)
- **Agile** – seeking opportunities
- Agenda set by the scientific community
- Broadly “**bottom-up**”



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Systemic and structural impacts

- Research and innovation networks
- Consolidation of institutional excellence
- Benchmarking and interactive learning towards improvement of research systems
- Rational use and forward development of national/regional infrastructure
- Europe-wide platforms for e-science
- Nucleation of clusters



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Excellent science and innovation

Radical innovation requires excellent science – no paradox, but long term perspective

Scientific fields rich in opportunities are fast-growing, interdisciplinary and divergent – need agility

The whole is greater than the sum of the parts; H2020 enables synergies – within and between different parts

H2020 simplification measures will have an impact in excellent science, as elsewhere (cf SMEs)

Innovation enhancements have been widely included within the components of “excellent science”

(But H2020 cannot provide the entire innovation ecosystem)



Innovation enhancements within excellent science components

ERC – Proof of concept

FET – SME measures, open, fast-track calls,
Flagships (critical mass)

MSCA – Cross-sectoral exchanges and training
with strong involvement of businesses

RIs – Fostering innovation potential and human
capital



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Synergies

Within “**excellent science**”

- A powerful, balanced and mutually-reinforcing set of mechanisms
- **Clear focused objectives, plurality of opportunities**
- Synergies in implementation: information exchange, assessment of needs, programming, cross-activity learning

Across Horizon 2020

- **New scientific knowledge**
- **Resources and competences**
- **Emerging, transformative technologies**
- **Investigator-centred networks**

With other EU policies (eg cohesion)

With national and regional schemes (towards a more efficient ERA)

- **Conditionalities (eg researcher autonomy requirements for ERC)**

From FP7 to Horizon 2020 - ERC

Reinforcing the excellence, dynamism and creativity of European research, to make Europe a world leader in producing the very best cutting-edge science, especially in new and rapidly emerging fields which are closely associated with world-leading innovation

Funding activities : attractive and flexible funding to enable talented and creative individual researchers and their teams to pursue the most promising avenues at the frontier of science, on the basis of Union-wide competition.

Horizon 2020 Novelties

- Reinforced budget to build on success of the FP7 grant schemes
- Improved governance (following ERC Task Force recommendations):
 - Full time president based in Brussels (position merged with Sec.Gen)
 - Strengthened role of Scientists in the Steering Committee of the ERCEA
 - Better links between the Scientific Council and the Executive Agency

Think! - Do you already have successful ERC researchers using your facilities?



From FP7 to Horizon 2020 - FET

Supporting the emergence of **radically new technologies and harvesting their innovation potential** by exploring novel and **high-risk ideas** building on scientific foundations

Funding activities: goal-oriented and interdisciplinary collaborative research on various scales

- **Bottom-up research** in the most promising areas of science and technology
- **Thematic research** in pre-defined emerging areas
- **Research on selected grand scientific and technological (S&T) challenges**

H2020 novelties

- **Expanded from ICTs to cover the whole landscape of science and technology, and with an increased budget**
- **FET Flagships: To enable science driven breakthroughs that can only be achieved through large scale federated and sustainable effort**
- **Targeted to a broader range of research actors, including new and high-potential research and innovation players such as young researchers and high tech research intensive SMEs**

