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## National Coordination

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#DecadeofData  
#ELIXIRis10

# National Coordination

Anne-Françoise Adam-Blondon

Head of Node, ELIXIR France

# The French Institute of Bioinformatics (IFB) is ELIXIR-FR, the French Node of ELIXIR

## IFB is a distributed French National Research Infrastructure

- 36 platforms and research teams spread all over France

## Coordination: IFB-core

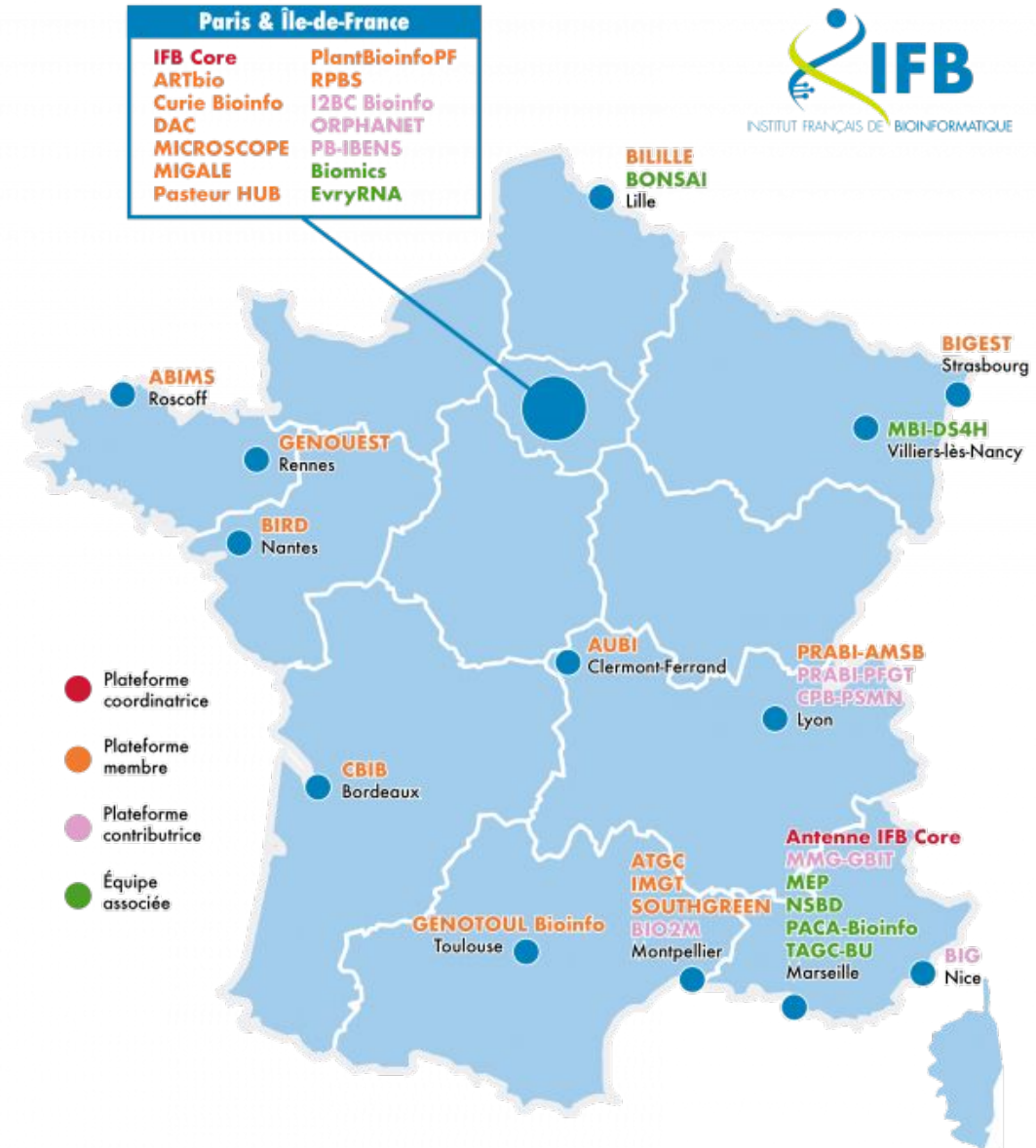
- Multi-research organizations : CNRS, Inserm, INRAE, CEA

## Common resources

- Supported by the French Ministry of Higher Education and Research since 2012

## A large set of expertise in bioinformatics

- >400 experts (~200 FTE)



# IFB/ELIXIR-FR has a large set of domain of applications

IFB's domains of application encompass the three scientific priorities of the 2024-2028 programme of ELIXIR



Enabling and responding to  
advances in cellular and molecular  
research will drive life science

Connect the latest developments and  
established data resources to realise  
the potential of cellular and molecular  
biology



Biodiversity, food security and  
pathogens are interrelated  
societal challenges

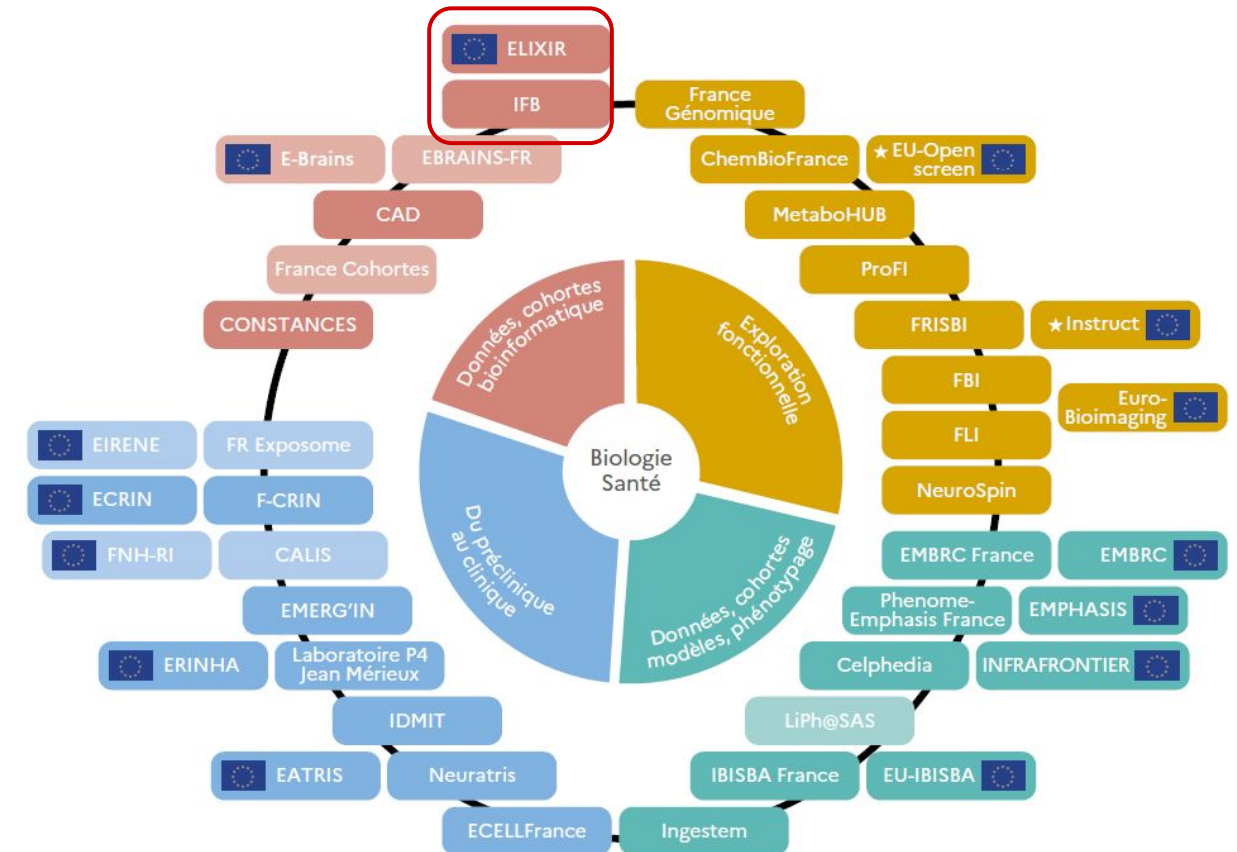
Mobilise and integrate molecular data  
to support transnational research  
programmes in biodiversity, food  
security and pathogens



The promise of genomics  
research to improve health  
and disease outcomes

Provide the infrastructure to support  
the discovery, access, sharing and  
analysis of human genomics data and  
linked data on a massive scale

- **Contribution to transversal activities addressing common challenges**
  - Multi-research organizations governance
  - FAIR data management and data interoperability
- **Partnership in large national projects**
- **Enhance partnerships in ELIXIR activities and in European projects**





# IFB-ELIXIR-FR is contributing to ELIXIR's activities

- **Liaising and networking** with all platforms and most of the communities and contributing to their activities
- **Co-coordinating and contributing to the strategic planning** of some of them => 
- Contributing to **European projects**: 9 since 2020



## Platforms


Technology

ELIXIR Platforms bring together experts from Nodes to develop ELIXIR's technical vision and coordinate activities in defined technical areas. There are five Platforms: Data, Tools, Interoperability, Compute and Training.



**Tools Platform** 

Helps researchers find the best software tools to analyse their data.




**Interoperability Platform**

Develops and encourages the adoption of standards to describe life science data.



**Data Platform**

Aims to identify key data resources across Europe and support the linkages between data and literature.



**Compute Platform**

Develops services to make it easier to store, share and analyse large datasets.




**Training Platform**

Helps scientists and developers find the training they need, and also provides that training.

## Communities



Science

 3D-Bioinfo	 Biodiversity
 Food and nutrition	 Galaxy
 Intrinsically Disordered Proteins	 Marine Metagenomics 
 Metabolomics	 Microbial Biotechnology
 Plant Sciences <small>litate crop and</small>	 Proteomics
 Single-Cell Omics	 Systems Biology
 Toxicology 	
<b>Human Data Communities</b>	
 Federated Human Data	 Human Copy Number Variation 
 Rare diseases	 Cancer Data (focus group) 

# IFB-ELIXIR-FR's 2022-2025 road map and organisation in transversal Task Forces

## Infrastructure



- National Network of Computing Resources (NNCR)
- Two modalities: **cluster + cloud**
- Compliance to law (GDPR)

## Support to users



- One stop portal and contact address
- Co-development of the bioinformatic/statistical part of the project
- **DMP**
- Development of **workflows**
- **Data Science**

## Prospective and innovation



- Identification of emerging needs in bioinformatics
- Funding of Pilot-projects

## Tools



- **Development** of dedicated tools
- **Packaging** (conda)
- **Virtualisation** (appliances, containers)
- **Software development practices**
- **Collaborative development, open code**

## Knowledge bases



- Development of data and knowledge bases
- Quality and data standards
- Technical support to developers
- Deployment of databases developed up in France

## Training



- **Thematic schools** (NGS, multi-omics, phylogeny, biostat, programming, workflows...)
- **Bring Your Own Data** (BYOD) trainings
- Webinars, MOOC
- **FAIR-data et FAIR-bioinfo training and capacity building**

## Open Science & Interoperability



- Data Management
- Data Standards, Ontologies, semantics
- **Data brokering**
- Machine actionable DMP
- Contribution to the network of RIs



Develop with the task forces a strategy that integrates national and ELIXIR's activities for node's benefice



## National activities

- **Software development task force**
  - Sharing good practices for development
  - Sharing recipes for deployment
- **Deployment of environments for analysis**
  - E.g. [Usegalaxy.fr](https://usegalaxy.fr) (metabolomics, proteomics, covid19, ...)

Tools development and deployment	2021	2022
New tools	19	16
Number of unique users of the platforms web tools	573 244	352 644
Number of uploads of the tools developed by the platforms	16 912	24 307



Vincent Lefort



Hervé Ménager  
ELIXIR Tools PF coord  
EDAM steering committee



Anthony Bretaudeau  
Elixir Galaxy community



Olivier Sallou  
Elixir Tech Coord

## International/ELIXIR activities

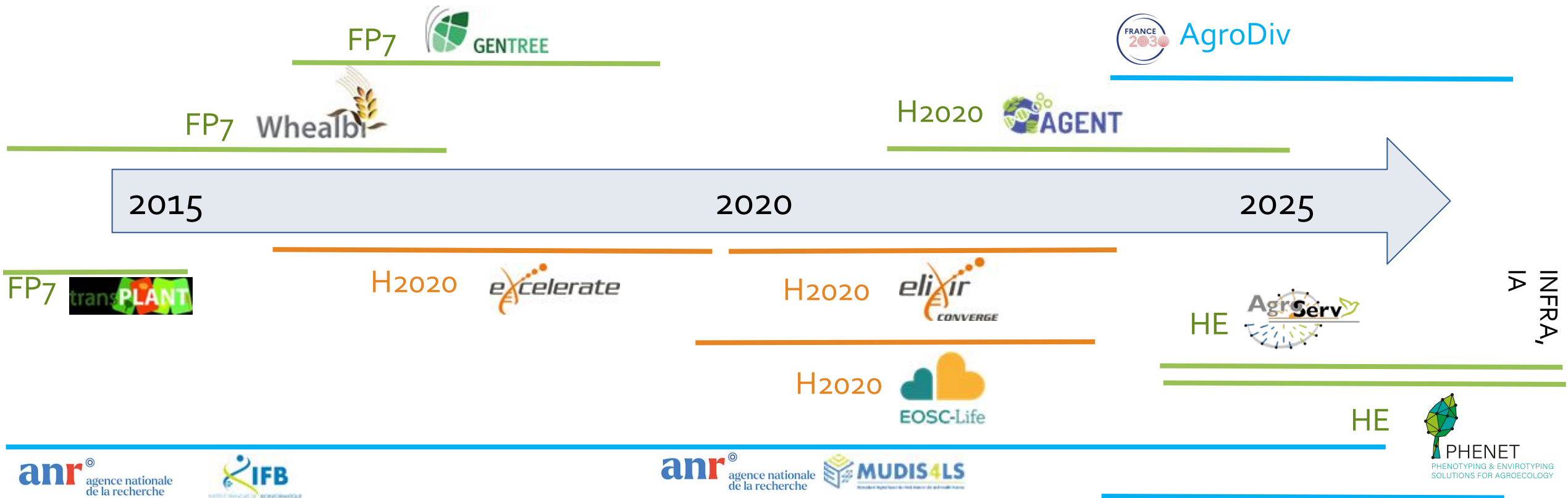
- **Service Delivery Plan ELIXIR-FR: labelling of French services**
- **Involvement in the coordination of the ELIXIR Tools Platform (Hervé Ménager):** contribution to the strategic planning, coordination of activities, outreach, good practices
- **Involvement in strategic projects for the ELIXIR Tools platform: BioContainers (Olivier Sallou)** Dynamic deployment of virtual environments



- Involvement in the **ELIXIR Galaxy community** (Anthony Bretaudeau): contribution to [usegalaxy.eu](https://usegalaxy.eu)



# Data management in the Plant Science community: another example of synergy



-Independent standards: MIAPPE, BrAPI  
-POC: portal for a wheat data federation

-Interoperable and well specified standards: MIAPPE, BrAPI, ISA  
-On boarding forest trees  
-Tested training resources  
-FAIDARE: plant data portal

- DM guidelines in RDMkit validated by a project  
-FAIR Cookbook recipes  
-Learning path

- DM interoperable between national RIs  
- on boarding domestic animals



# IFB/ELIXIR-FR in the national « ecosystem » supporting Open Science

- 2022: the French Ministry of Research and Higher Education launches Recherche Data Gouv
- IFB/ELIXIR-FR is mandated to organize a « thematic reference center » for Life Science data :
  - Development and dissemination of data standards
  - Support to data management and data curation
  - Data brokering
  - Harvesting data for the national data catalog

*Recherche Data Gouv at a glance*



## Modules to support research teams on all issues linked to data:

- Data management clusters
- Thematic reference centres
- Resources centres
- Institutional reference centers

## Modules to deposit, publish and disseminate data:

- A repository to deposit and disseminate data
- A registry to search for data published in the repository itself or other external repositories