

# French Big Science & Research Infrastructures

*Source of Innovations*

*Success stories from the industrials – working with academia*

# French Big Science

108 Research Infrastructures

Many in ESFRI Roadmap

Link with industries through the  
**French Big Science Network**

**French Big Science Network**

8 ILO + 100 ICO

Network of french industries



Physics: Astro, Mater

Environnement

Biology & Health

Digital & Humanities

*Research Infrastructures enable frontier science **AND** attract, train & keep high level scientific talents !*



Structural analysis

Electron microscopy  
Light microscopy  
Super resolution microscopy  
NMR  
Spectroscopy  
X-ray data collection



- **Advanced Light Microscopy Imaging Systems:** regular and automated wide field microscopy, Laser Scanning confocal microscopes, Spinning Disk confocal microscopes...
- **Sophisticated and Innovative Imaging Systems:** High-resolution & single molecule tracking, Electron Microscopy & Multimodal Imaging, Confocal with innovative modalities, Fluorescence spectroscopy in microscopy, In depth & Intra-vital Imaging.

# Innovation exemple: Neutron for society

Inspection of pyrotechnic hardware for launchers and satellites



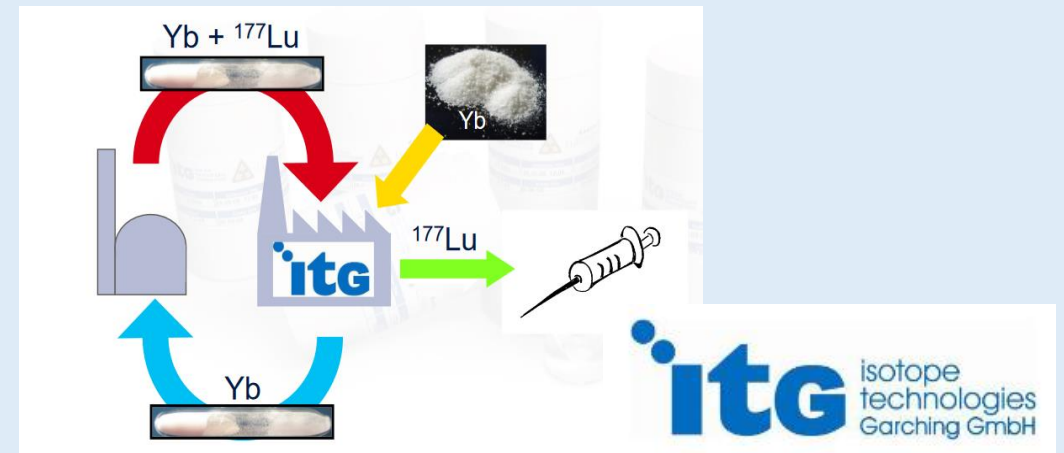
Credit Arianespace

Neutron radiography

Credit ILL

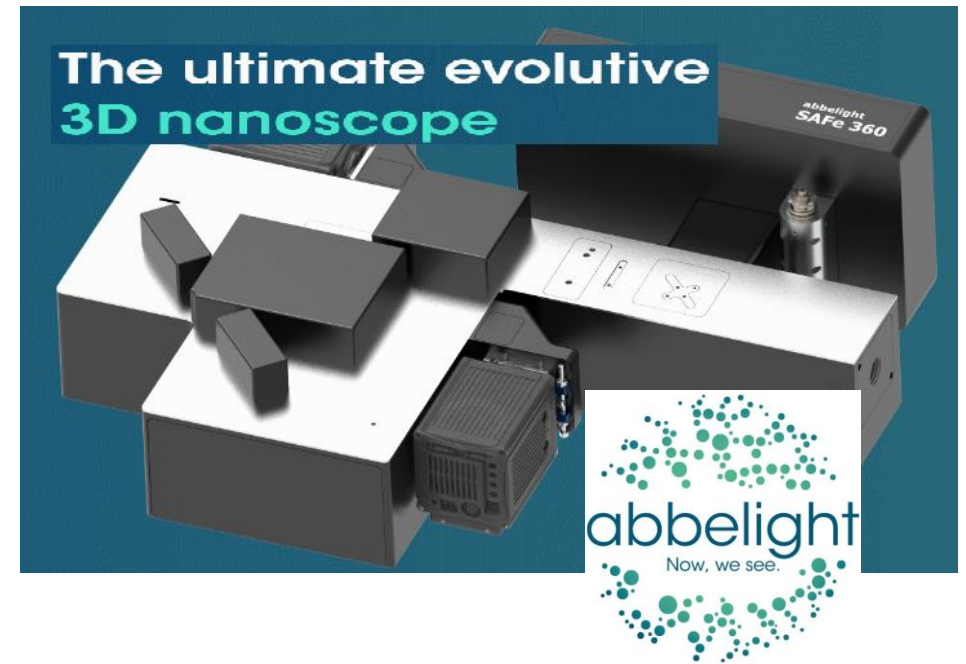
R&D and Production of material for hundreds of treatments/year

Lutetium-177 is used to heal certain types of cancer including intestinal, prostate and lymph node cancers.



- Research Infrastructure and deeptech

Deeptech examples:



*RI source of  
Deeptech Startups*

*and a bootstrap market for them !*

# More than deeptech: global disruptions

## Economic Impact of the Human Genome Project



Yesterday: disruption in genomics

*How a \$3.8 billion investment drove \$796 billion in economic impact, created 310,000 jobs and launched the genomic revolution*

Prepared by Battelle Technology Partnership Practice May 2011

From Big Science Fusion program eep tech fusion startups

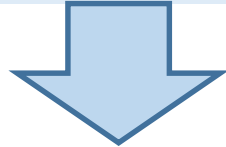


Tomorrow: disruption in energy, AI... ?

# How Europe could boost creation of Frontier Industry ?

## How could we:

Imagine applications ideas from science ?  
Help disruptions from science emerge ?  
Help those ideas go to markets ?



## Some ideas to be discussed:

Basic & Big Science Innovation studio

Fuel EIC pipeline with projects to: 

- Build demonstrators
- Fund disruptive ideas

Help new markets to emerge

*All this may fight the  
« Discovered here,  
exploited elsewhere »  
problem*



## Deeptech

Build deeptech startups

Build markets

Build new sectors



Liberté • Égalité • Fraternité  
RÉPUBLIQUE FRANÇAISE

MINISTÈRE DE  
L'ENSEIGNEMENT  
SUPÉRIEUR ET DE  
LA RECHERCHE

*Thanks !*