



Competitiveness Clusters in France

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MOTEURS DE CROISSANCE ET D'EMPLOI

Investments for the Future Programme : an opportunity for competitiveness clusters

The Investments for the Future Programme contains two competitiveness clusters specific measures : development of structuring R&D projects (€300 million) and pooled innovation platforms (€200 million). Other cluster-related measures include the future technology research institutes and excellence centres for low-carbon energy sources, both designed to " boost cluster established ecosystems ".

SME involvement in competitiveness clusters in 2009

73 % OF SMEs

France's competitiveness clusters count 7,200 firms employing 760,000 people. Of these, 73% are SMEs, 15% are mid-sized firms and 12% are major companies.

64 % OF SUBSIDIES

Cluster SMEs have benefited from 64% of financial support to businesses allocated by the Single Interministerial Fund and OSEO.



What is a competitiveness cluster ?

A PARTNERSHIP, BASED AROUND A SPECIFIC THEME AND A SPECIFIC REGION

A competitiveness cluster brings together large and small firms, research laboratories and educational establishments, all working together in a specific region to develop synergies and cooperative efforts.

Other partners may be brought in, such as public authorities, either local or national, as well as firms providing business services.

COMPETITIVENESS CLUSTERS THINK BIG

The goal of Competitiveness clusters is to build on synergies and innovative, collaborative projects in order to give partner firms the chance to become first in their fields, both in France and abroad.



What objectives do competitiveness clusters have?

To **boost the competitiveness** of the French economy and to help **develop growth and jobs** in key markets, by :

- accelerating innovation efforts
- providing support for high-tech and creative activities, primarily industrial, in the various regions of France
- improving the attractiveness of France via greater international visibility



What is their strategy?

Each cluster draws up a five-year strategic plan based on the shared vision of various participants. This allows the cluster to :

- **establish partnerships between participants** with recognized, complementary skills
- **set up collaborative R&D projects, as well as structuring projects such as innovation platforms** that can benefit from public subsidies
- **promote an overall environment that fosters both innovation and growth** among the cluster's members. This is done by providing leadership, exchange and support for members in areas such as private funding for firms, industrial property, forward-looking management of jobs and needs for new skills and qualifications, developing international technological partnerships, regional synergies, etc.



What public support is available for competitiveness clusters ?

France is committed to creating a conducive environment for both firms and innovation. It offers assistance for cluster-based research and development, particularly via the Single Interministerial Fund (FUI), which provides support for cluster policy and for the forward-looking investments that are part of France's National Loan Programme.

The State provides support for cluster development, at both national and regional levels :

- **by allocating financial aid** to the best R&D projects and innovation platforms, through **calls for projects from the Single Interministerial Fund and the Investments for the Future Programme**
- **through partial financing of cluster governance structures**, alongside local authorities and firms
- **by providing financial aid for theme-based collective actions**, through the intermediary of decentralized government departments. These actions, initiated by the competitiveness clusters in a wide range of areas, involve cluster members, particularly SMEs, with the aim to promote innovation and improve their competitiveness.
- **by bringing additional partners on board** : the French National Research Agency and OSEO provide financing for R&D projects carried out by cluster members; the Caisse des Dépôts et Consignations (CDC) supports innovation platform projects;
- **by relying on local authorities**, who may also provide financial support for cluster projects (both R&D and innovation platforms)
- **by helping competitiveness clusters and their member firms** find the best international partners and set up technological partnerships with them focused on value creation
- **finally, by bringing to bear new resources from the Investments for the Future Programme** earmarked for competitiveness clusters.

What is an innovation platform?

An innovation platform provides a structure that is open to various innovative stakeholders, particularly cluster members, in which participants have access to high-quality facilities and services. The goal is to facilitate R&D projects, testing, and the development of pre-series and prototypes. A platform can even serve as a " living lab ".



In which areas are competitiveness clusters active?

Resulting from local initiatives, competitiveness clusters are currently active in most activity sectors. These include emerging technologies (nanotechnology, biotechnology, eco-technology, etc.) as well as more mature sectors (automotive, aerospace, etc.).

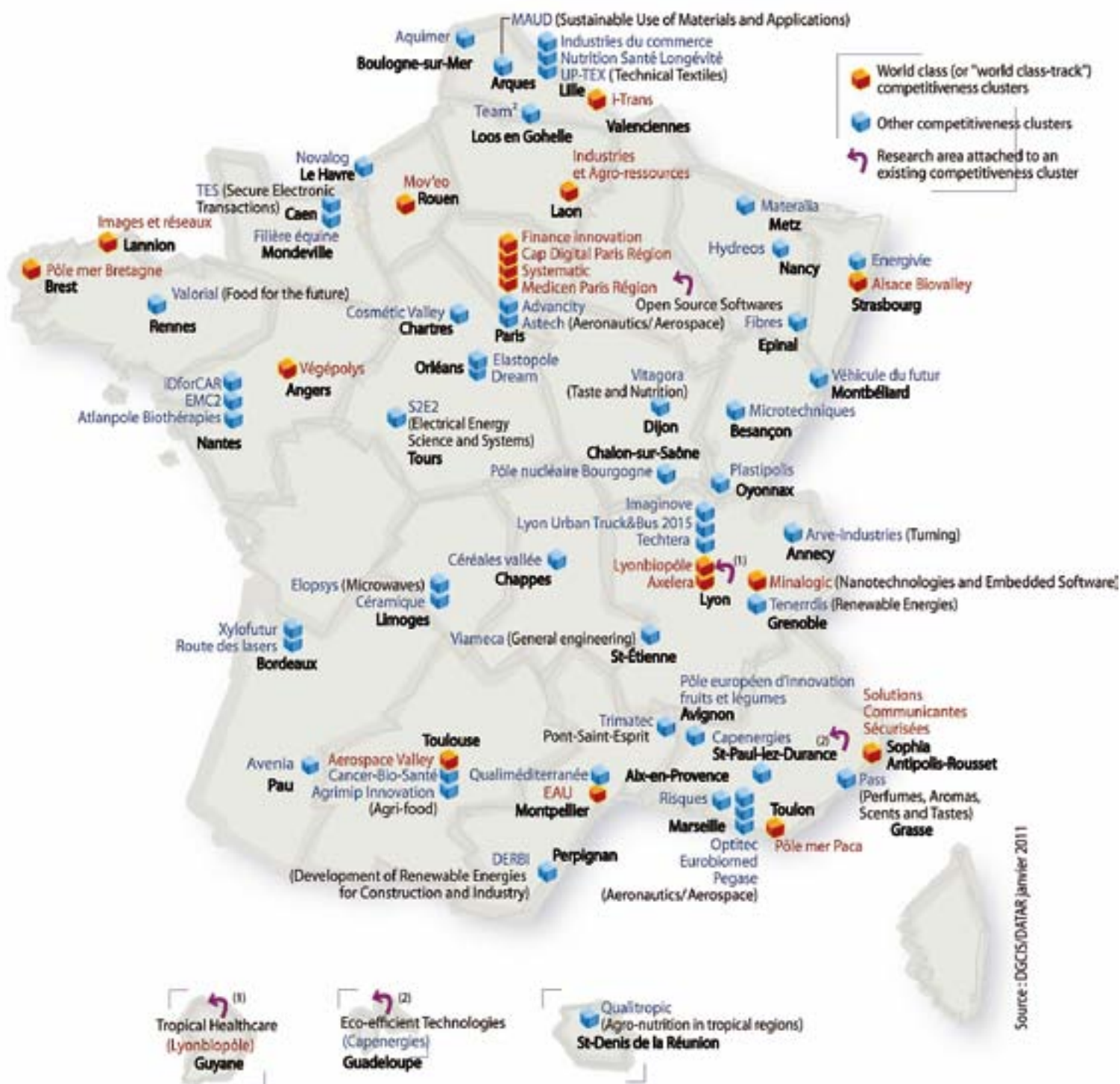
Public-sector support for R&D projects

Since 2005, 889 R&D projects have received €1.7 billion in public-sector financing, of which €1.1 billion was provided by the State. These projects, amounting to some €4.4 billion in R&D expenditure, involved nearly 15,000 researchers.





Map of competitiveness clusters in France





GROWTH AND EMPLOYMENT ECOSYSTEMS

FOUR EXAMPLES OF ACTIONS CARRIED OUT BY COMPETITIVENESS CLUSTERS

Financing



The "innovative cluster company" label

The "Innovative Cluster Company" label was launched by the Club des Pôles Mondiaux in partnership with the French Private Equity Association (AFIC), France Angels, Retis Innovation and OSEO, with support from the Caisse des Dépôts et Consignations and the Gouvernement. It was intended for very small companies and SMEs that are members of competitiveness clusters. The goal of the label is to increase their visibility and their presence

among private investors. A number of small companies belonging to competitiveness clusters are involved in R&D projects and need to increase their own funds to get their products to the market, launch the marketing phase for their innovations and speed up growth. The label, which has a national certification program, was launched on 3 June 2010 under the aegis of the Ministry for the Economy, Industry and Employment.

International



International partnerships

French competitiveness clusters System@tic and Aerospace Valley and the German cluster SafeTrans have joined the ARTEMIS Embedded Computing Systems Initiative. These top-ranking German and French transport firms will play an active role in implementing R&D projects with long-term industrial impact Europe-wide. The project was the starting-point for other partnerships with other

European competitiveness clusters of excellence, such as the Dutch cluster Point-One, aimed at developing embedded computing systems and micro-nanotechnologies.

Skills

Pooling skills among SMEs

The Rhône-Alpes Regional Directorate for Businesses, Competition Policy, Consumer Affairs, Labour and Employment (DIRECCTE) provided financial support for efforts to pool skills among several SMEs working in the health-care-related biotechnology field. This was done under the aegis of the Lyonbiopôle cluster, through the creation of the "Compétence Biotech" Association.

In 2009, 12 SMEs joined

Compétence Biotech, which operates as an employers' group. It was set up to help firms that need access to specific skill-sets, but whose workload and financial capacities prevent them from hiring experienced personnel (in areas such as regulation, quality assurance, clinical and preclinical trial management, industrial property, etc.). A feasibility study conducted by a specialised consultancy led to a creation of a prototype pooling firm set up based on criteria established by the SMEs.



Actions and programs for training

In order to meet the high demand for skilled workers by firms in the nuclear industry, the Nucléaire Bourgogne cluster made training a top priority. It set up new training programs - a professional baccalaureate at Creusot, professional degree programmes at Chalon-sur-Marne, Creusot and Dijon, and a specialized master's programme at Cluny. In addition, the cluster played an active role in setting up the International Nuclear Academy, which opened its doors on 3 April 2009. The Academy equips managers with specific nuclear-related skills (design, manufacture, maintenance, ageing installations and dismantling sites).

Training





Shaping future with new products

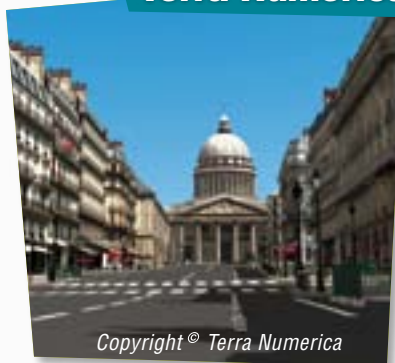
SIX SUCCESSFUL COLLABORATIVE R&D PROJECTS SUPPORTED BY THE FUI

Terra Numerica

Digitizing the urban landscape (Cap Digital)

The Terra Numerica project aims to develop technologies required for the production and visual use of large-scale three-dimensional representations of urban areas. In particular, it plans to produce a high-resolution representation, and develop technologies associated with services providing access to geo-localized content-both for Internet and cell phones. The goal of Terra Numerica is to respond to new economic and environmental

challenges created by growth and urban sustainability issues. There are a number of possible applications, including urban community management, urban planning and regional development and environmental risk management, as well as real estate and tourism-related services, etc.



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Ecopaint PACA

Environmentally friendly anti-fouling paint for ships (Mer PACA)

Ecopaint PACA decided to create an environmentally friendly equivalent to current anti-fouling paints. These paints are applied to boats in order to slow down growth of organisms on hulls, which create additional costs and have negative effects on the environment.

Test en immersion in situ
(Arsenal du Mourillon - Toulon)



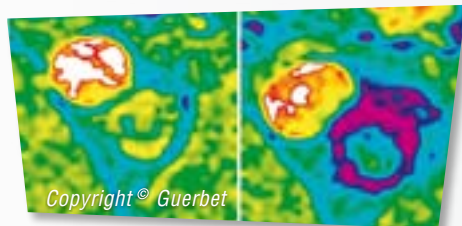
Detecting cardiovascular diseases more easily (Medicen)

The goal of ATHIM is to better predict the risk of cardiovascular insufficiency. More specifically, it focuses on atherothrombosis characterized by the presence of fatty substances that build up in the body's artery walls. The deposit cholesterol, or plaque, hardens and narrows the diameter of the blood vessels. Until now, imaging technology has focused on detecting zones of shrinkage in the arterial walls. However, a number of clinical studies have shown that shrinkage is not the only point of reference for detecting cardiovascular insufficiency. Molecular events, which are signs of rupture or erosion in these

ATHIM

constricted zones, may also lead to cardiovascular insufficiency.

Progress must be made in medical imagery by using specific biomarkers to detect at-risk vascular areas. This is the goal of the ATHIM project.



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Microvax

A new intradermal vaccine delivery system (Lyonbiopôle)

Microvax is hoping to speed the development of an innovative system of administering vaccines via intradermal micro-injection. This new system should provide equal or better effectiveness as in for muscular injection, and in addition will be more comfortable and easier to use for those being vaccinated.

and services

Ourses

Using satellite technology to provide round-the-clock assistance to patients in rural areas (Aerospace Valley)

The goal of the Ourses (Satellite Services for Rural Use) project is to combine satellite-based telecommunications and wireless technology to provide



broadband services in isolated, rural areas with no access to ADSL-type networks. It will also provide a testing-ground for a new technology that improves the throughput of satellite transmissions. Finally, the project will validate these technological innovations by deploying healthcare teleservices for providing assistance to seniors in rural zones.

ALK



Research on a targeted treatment for a hematological malignancy (Cancer-Bio-Santé)

There are three types of blood cancer : leukaemia, lymphoma and multiple myeloma. Among lymphomas, there is a distinct set of tumours known as anaplastic large cell lymphoma (ALCL). The origin of these tumours involves the rearrangement of the ALK gene (anaplastic lymphoma kinase). Currently, there is no specific treatment for this disease - patients are generally given the CHOP chemotherapy regimen,

with the risk of recurrence in 30% of cases. The goal of the project is to identify a drug to target the mutant ALK gene, which is found in 85% of anaplastic lymphomas, and thus provide a specific treatment for this illness.



TWO EXAMPLES OF INNOVATION PLATFORMS (FUI)

Purifunction

Extraction and purification for a healthy food market (Nutrition Santé Longévité cluster)

The Purifunction innovation platform was set up in response to challenges stemming from implementation of the new EU Regulation on health and health claims made on food. The goal is to meet the needs of agri-food manufacturers, drug companies and cosmetics firms for high-performance tools to assess and test new formulations. The Purifunction tool will allow these players to master technologies and new project-specific processes, and it will facilitate validation of these processes and the resulting patents at a pre-industrial scale. It represents an innovative investment in a shared pilot programme that will be made available to interested firms, particularly SMEs.

A biorefinery for processing and recycling non-food agricultural materials (Industries Agro Ressources cluster)

BRI

The Recherches et Innovations biorefinery (BRI) is an open platform located on an agri-food site in France's Champagne region. Its members include all major stakeholders required for developing processes for biomass fractionation, biomass chemistry and biotechnology, from basic research all the way to the pre-industrial prototype.

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