

2010

France's Action to Promote Innovation



Directorate-General of Global Affairs, Development and Partnerships

France devoted EUR 39.5 billion to research and development (R&D) in 2008, which represents 2.1% of its GDP, putting it in fourth place amongst OECD countries, behind the United States, Japan and Germany. France ranks sixth worldwide for the number of researchers.

The Nobel Prizes won testify to this excellence (Albert Fert for giant magnetoresistance in 2007), along with several Fields Medals won (Cédric Villani and Ngô Bau Châu in 2010). France has research bodies and scientific clusters that enjoy worldwide fame, such as the Centre national de recherche scientifique (CNRS) or the Genopole in Evry.

France ranked second in Europe and sixth in the world for patents filed with the World Intellectual Property Organisation in 2009.

The four leading patent owners in France, filing with the National Intellectual Property Institute in 2009, were large French industrial groups: PSA, Renault, L'Oréal and Safran. French research bodies are also very active, including the CNRS, the Commissariat à l'énergie atomique et aux énergies alternatives (CEA, Atomic Energy Commission) and the Institut français du pétrole (IFP, French Petroleum Institute).

The leading industrial sectors for patent filings are aerospace, automobiles and land transport, electronics and information and communication technology, along with chemicals and pharmaceuticals.



The Eurostar and the Thalys, Gare du Nord (Paris) © MAEE/F. de la Mure.

Innovation, a twenty-first century challenge

“ Technological innovation underpins a country's competitiveness. Growth and economic performance depend directly on a country's capacity to manage and use new knowledge and to meet the technological and social challenges of the twenty-first century. Back in the year 2000, the European Union adopted the Lisbon Strategy, which placed innovation at the heart of Europe's future.

France wants to affirm its leading role in research and innovation and has undertaken proactive policies to achieve this aim.

The Ministry of Foreign and European Affairs and the scientific departments in its embassies facilitate exchanges and initiate international partnerships between researchers and entrepreneurs, working in collaboration with all of the French players who are committed to innovation. These players include the Ministry of Higher Education and Research, the Ministry of the Economy, Industry and Employment, agencies, local governments, support structures and non-profit networks. ”



Christian Masset,
Director General of Globalization,
Development and Partnerships



A favourable environment for innovation

Three key sectors for the national strategy

The Ministry of Higher Education and Research launched the **National Research and Innovation Strategy** (SNRI) in 2009. The Strategy is the result of broad-based coordination of research and innovation operators, financing agencies, social and economic players, non-profits and civil society. Its purpose is to guide research over the coming years.

Three key sectors have been identified: **bio-, eco- and nano-technologies**. The idea is to define a favourable environment for innovation, which is competitive on the European and international stage, by promoting collaboration between public research bodies and businesses.

Instruments to support an effective innovation strategy

Developing the university/business interface

All French research bodies and universities have had **research optimisation departments** since 1999 to act as interfaces with social and business partners. They provide support for business start-ups and they manage patents and research contracts signed with businesses.

Supporting innovative business start-ups

The Ministry of Higher Education and Research has endorsed some thirty innovative **business incubators** located alongside scientific sites. The incubators provide advice, training and help to find financing for business start-ups based on innovative ideas. The five-year survival rate for business created in the incubators is much higher than the national average.

The Ministry of Higher Education and Research set up the **National**

Competition to Support the Creation of Innovative Technology Businesses in 1999. Each year, the competition supports the best innovative technology business start-ups with financing and appropriate support. It has contributed to the creation of more than 1,000 businesses.

Intensifying the search for partnerships

The Ministry of Higher Education and Research has used the **“Carnot Institute”** label since 2006 to recognise and promote the capacity of public research laboratories to enter into research and technology transfer contracts with businesses. The 33 Carnot Institutes employ 12,000 researchers.

The **Conventions industrielles de formation par la recherche** (CIFRE, Industrial Training through Research Agreements) enable businesses to obtain financial support to hire young doctoral students in partnership with public research laboratories. The agreements have been very popular since they were introduced in 1981, with more than 12,000 doctorates granted and a very high proportion of permanent positions being offered to students in the programme.



Electric car, Motor Show 2010 (Paris) © MAEE/F. de la Mure.

Promoting the growth of innovative businesses

The **crédit d'impôt recherche (CIR)**, Research Tax Credit) is a tax incentive for R&D expenditure aimed at promoting research by businesses located in France. In 2008, the incentive system was simplified and extended, making it one of the most attractive in the world.

The **status of Young Innovative Business (JEI)** is granted to new SMEs that devote a large share of their budgets to R&D. It provides breaks on taxes and payroll contributions to help these companies through their lean early years.

The **prime à l'aménagement du territoire (PAT)**, local development bonus) for “**Research & Development-Innovation**” is one of the rare national programmes providing direct business investment support. It is aimed at supporting increased R&D spending by the beneficiary companies. R&D departments that create 20 permanent new jobs or invest more than EUR 7.5 million in research are eligible for the bonus.

➔ FOR FURTHER INFORMATION

<http://forums.snri.enseignementsup-recherche.gouv.fr/>

<http://www.enseignementsup-recherche.gouv.fr/>

TWO KEY PARTNERS FOR PROMOTING STRATEGIC PROJECTS

Agence nationale de la recherche

France's National Research Agency (ANR) was created in 2005. It provides funding for research and optimisation projects through competitive calls for projects. In 2008, the Agency provided some EUR 650.2 million to consortia of public laboratories and businesses working in six areas: humanities and social sciences, ecosystems and sustainable development, sustainable energy and the environment, biology-health, engineering, processes and security of information and communication sciences and technologies. Some 240 SMEs participated in these programmes.

The Agency also runs the Carnot Institutes programme and contributes to collaborative research projects by competitiveness clusters.

www.agence-nationale-recherche.fr

OSEO

OSEO is a public establishment that supports SMEs in France with the aim of ensuring continuity in financing through all phases of their life-cycle (start-up, buyout-transfer, growth, international development) and in their R&D and innovation projects. OSEO facilitates access to bank loans by providing guarantees. It directly co-finances growth and innovation investment by SMEs and technological partnerships and provides direct support for innovation in the form of subsidies or advances (totalling EUR 560 million in 2009).

The Strategic Industrial Innovation Support Programme (ISI) grants up to EUR 10 million in funding for collaborative strategic projects involving companies with up to 5,000 employees and research establishments. Furthermore, soft green loans finance up to 40% of total investment in tangible and intangible assets that integrate environmental protection issues. These loans are available to SMEs and ETI (entreprises de taille intermédiaire) companies that are more than three years old.

<http://www.oseo.fr>



Involvement of players in the field

L'Association nationale de la recherche et de la technologie: public-private partnerships

The ANRT (National Research and Technology Association) brings together public and private-sector players in research and innovation. Its main actions are the CIFRE system, the FutuRIS (Research Innovation Society) forecasting platform and efforts to improve research partnership practices with the Europe Department.

Sophia Antipolis Foundation: running a world-class technology park

Sophia Antipolis was founded forty years ago by Senator Pierre Lafitte in the Alpes-Maritimes Department. It is the first French technology park and a model of successful innovation development that has a world-wide reputation. The Sophia Antipolis Foundation runs the park and organises events aimed at fostering entrepreneurship and supporting innovation projects. Its actions are part of a European and international effort.

<http://www.sophia-antipolis.org>

The C.U.R.I.E. network: disseminating best practices

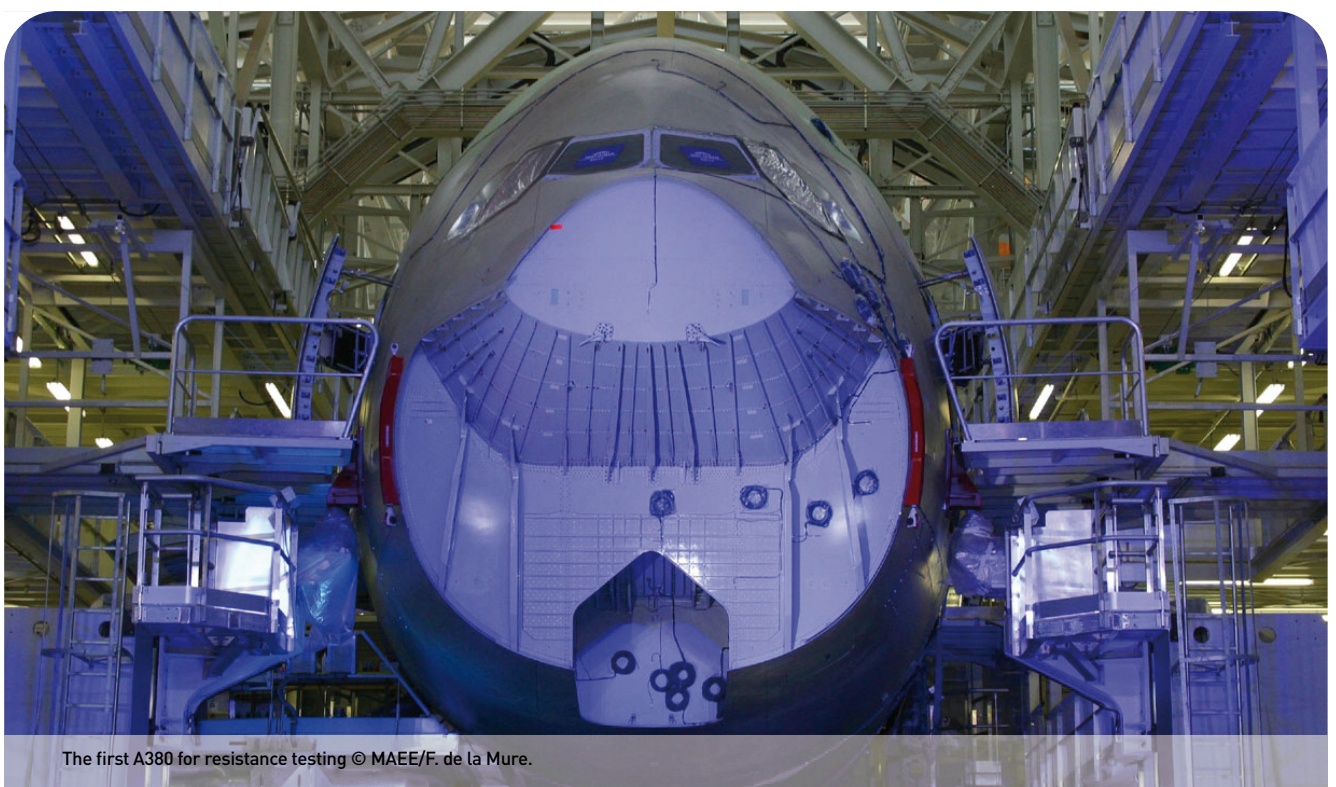
The network is dedicated to research optimisation and technology transfers. Its members are universities, higher institutes, industrialists and investors. The network contributes to the dissemination of best practices by organising services and training for optimisation professionals.

<http://www.curie.asso.fr/>

RETIS: enhanced support for innovative businesses

RETIS is an association that brings together European business and innovation centres, business incubators, technology parks and competitiveness clusters. It has three main missions: lobbying and communication on behalf of innovation support structures, network facilitation and training for members. RETIS supports the development of some 12,000 innovative companies throughout France and is developing international actions in partnership with the Ministry of Foreign and European Affairs.

<http://www.retis-innovation.fr/>



The first A380 for resistance testing © MAEE/F. de la Mure.

What is a competitiveness cluster?

In 2004, France inaugurated a new industrial policy that mobilises the key factors of competitiveness, chief of which is the capacity for innovation.

A competitiveness cluster is a local cluster of businesses, research centres and training organisations working in partnership under a common development strategy aimed at fostering synergies for innovative projects carried out jointly and aimed at specific markets.

The policy spurs business and academic players in France to come up with initiatives and then supports them.

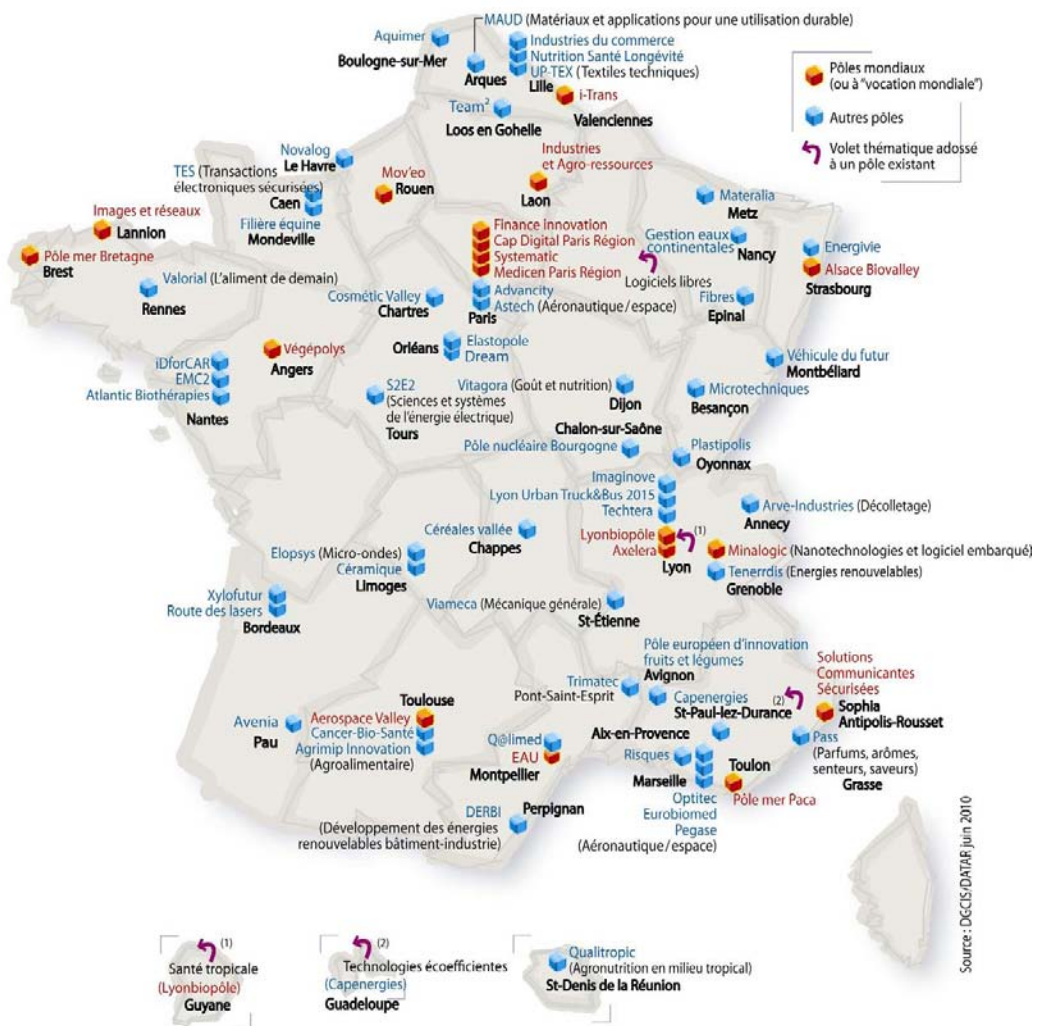
The networking of innovation players through the cluster policy is aimed at:

- enhancing the competitiveness of the French economy
- fostering activities, primarily industrial activities, with high technology or creative content in France
- enhancing France's attractiveness
- fostering growth and jobs.

Map of the 71 French competitiveness clusters

(Updated on June 2010)

To learn more about each competitiveness cluster: www.competitivite.gouv.fr



Source: DGCCIS/DATAF juin 2010

Second phase of the competitiveness cluster policy (2009-2011)

Following a positive assessment of the first phase of the cluster policy (2006-2008), the French government decided to allocate EUR 1.5 billion for the launch of the second phase (2009-2011). In addition to continuing to support R&D, which lies at the heart of the cluster dynamic, the second phase will have three thrusts:

- enhancing facilitation and strategic oversight of the clusters and, more specifically, the introduction of “performance contracts”;
- new financing procedures, particularly for innovation platforms;
- development of an innovation and growth ecosystem, through greater use of private funding and by seeking better local synergies.

LOCAL GOVERNMENTS' COMMITMENT TO INNOVATION

Local governments' support for innovation complements national measures. They provide project financing for innovative SMEs through regional innovation funds, and through seed capital and venture capital funds.

Regional governments provide impetus for local development strategies with the support of their regional innovation agencies and by supporting business incubators and technology parks.

The **Rhône-Alpes** region has 15 competitiveness clusters and an active network of innovation players, along with a partnership with **China**: since 2001, the ARCUS Chine programme for regional university and scientific assistance co-financed by the Ministry of Foreign and European Affairs has financed some thirty joint research programmes with the municipality of **Shanghai**.

The **Île-de-France** region has also been cooperating on R&D with the **Gauteng** province in **South Africa** for the last ten years. Since 2006, the Regional government and the CNRS have established exchanges between researchers in biodiversity, astrophysics and mathematics.



A laboratory of the group leader in the pharmaceutical industry, Sanofi Aventis. © Sanofi Aventis/D. Felix

International promotion of innovative projects

Ambitious European policies and instruments

By adopting in 2000 the Lisbon Strategy and the Europe 2020 Strategy in 2010, the European Union set the ambitious goal of becoming the most competitive and dynamic knowledge economy in the world. This strong political determination led to a large increase in European financing in recent years. EU countries are supposed to invest 3% of their GDP in R&D by 2020.

There are several major funding measures for collaborative projects by consortia of European partners, which may also include players from outside the European Union in some cases.

The EU 7th Framework Programme for Research and Technological Development is the main instrument for funding R&D projects in Europe. It has been endowed with more than EUR 50.5 billion for the period from 2007 to 2013, including EUR 32.3 billion for the "Cooperation" Programme to support transnational collaboration projects. At least 10% of the funding under this sub-programme is reserved for SMEs (more than EUR 4.8 billion). The FP 7 "Capacities" Programme is aimed at enhancing research and innovation capacities and it includes a measure to promote research by SMEs or associations of SMEs with an endowment of EUR 1.3 billion.

European Technology Platforms bring together businesses, research institutes and other organisations to define a joint strategic research programme and mobilise a critical mass of public and private-sector resources at the national and European levels. **Joint Technology Initiatives (JTIs)** introduce a long-term framework for public-private research partnerships in strategic areas.

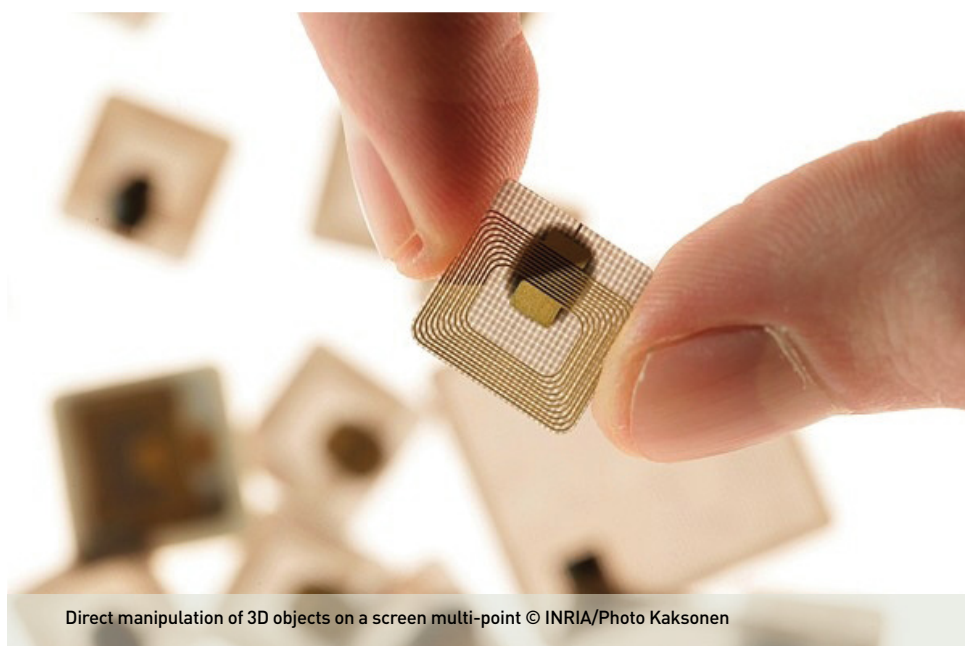
The Competitiveness and Innovation Framework Programme has been

endowed with EUR 3.6 billion for the period from 2007 to 2013. It is made up of three working programmes: the Entrepreneurship and Innovation Programme, the Information Communication Technologies Policy Support Programme and the Intelligent Energy Europe Programme.

The Cohesion Policy makes it possible to stimulate research and innovation at the regional level. The European structural funds (ERDF, ESF) finance a broad range of actions: clusters, infrastructure, training, and entrepreneurship. At least 20% of each regional programme's financing must be devoted to research and innovation.

Eureka is an intergovernmental programme made up of 38 European countries and the European Commission. It has a yearly endowment of EUR 50 million, along with EUR 100 million from the Commission for the period from 2007 to 2013. Eureka-endorsed cooperation and R&D projects are carried out at the initiative of industrialists. Eurostars is a specific programme to support collaborative projects by high-tech SMEs.

<http://cordis.europa.eu>



Direct manipulation of 3D objects on a screen multi-point © INRIA/Photo Kaksonen

Competitiveness clusters look abroad

The General Directorate for Competitiveness, Industry and Services (DGCIS) at the Ministry of the Economy, Industry and Employment has undertaken several actions to promote the international development of competitiveness clusters in line with their strategies set out in the performance contracts. In 2009, the DGCIS signed an agreement with the French Trade Commission (UBIFRANCE) to enhance support for clusters through joint actions by clusters in the same business sectors and events for SMEs in the clusters. In 2010, the DGCIS devoted EUR 750,000 to these actions. UBIFRANCE acts as the operator for these actions.

In June 2009, the DGCIS also made a call for proposals for "Competitive Cluster Ambassadors" to forge contacts with clusters in other countries and develop collaborative projects with the world's best clusters. A second call for proposals for "European Technology Partnerships" provides cluster SMEs with access to European consortia and programmes.

The DGCIS also entered into individual agreements with clusters to provide financial support for international conferences, etc.

French embassies' trade missions and scientific departments have been mobilised for these actions and may also help clusters identify potential partners, learn about innovation systems in the countries concerned and organise official visits.

International technology partnerships

The Partnerships are set up between innovative SMEs from two countries wishing to share the fruit of technological research and develop new international market segments.

UBIFRANCE has dedicated programmes to support innovative French SMEs seeking potential partners and prospecting export markets (SIDEX, INNOVEX).

<http://www.ubifrance.fr>

At the initiative of the Ministry of Foreign and European Affairs, the Innovative Enterprise Initiative, which is managed by RETIS in partnership with several emerging countries, provides young innovative companies in France with customised support to set up technology partnerships with foreign companies and laboratories.

The OSEO Transnational Technology Partnership financing programmes are for companies with fewer than 2,000 employees. The purpose of this financing is to

facilitate the arrangement of partnerships between French companies and operators in Brazil, Canada, China, United States, India, Israel, Morocco and Mexico.



The Ariane launcher is about to launch into orbit a telecommunications satellite, Kourou, French Guiana © CNES/ESA/Arianespace, 2003.

**Spotlight on
French-American cooperation**

The Science and Technology Mission at the French Consulate in Boston has initiated partnership programmes that have produced promising results.

Young Entrepreneurs Initiative (YEi)

This is a transatlantic platform that supports innovative technology business start-ups in France: project leaders are supported from the United States with access to various resources in France. Under this programme, in which RETIS plays an active role, 40 start-ups have been or are being established in France since 2005.

France-USA Technology Transfer Fellowship Exchange Program (FAT2E)

The C.U.R.I.E. network implemented this programme in 2007 with the aim of facilitating the exchange of best practices for research optimisation and technology transfers between France and the United States. It gives experienced French professionals an opportunity

to work for up to three months in an American research optimisation structure.

New-England Technology Venture Accelerator (NETVA)

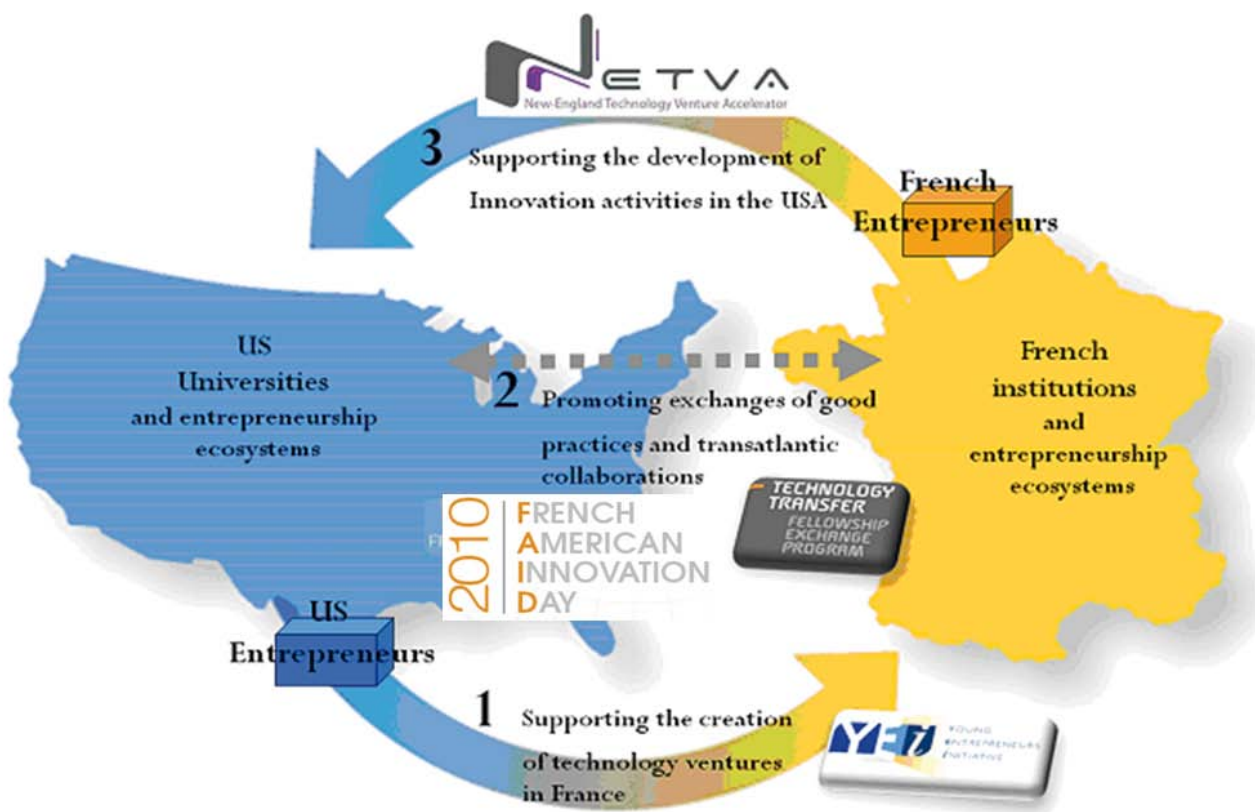
NETVA is an initiative that supports innovative new French companies seeking opportunities in the United States by providing appropriate training, insight into American entrepreneurship and help for technological partnerships. RETIS is an active member of NETVA, which was awarded the 2010 Economic Initiatives Award by the French Business Press Association.

French American Innovation Day (FAID)

Each year, the best French and American researchers and entrepreneurs gather to discuss a topical issue, exchange views, present research and innovation projects and, potentially, forge partnerships.

The 2010 FAID saw Mérieux-Alliance give a grant of EUR 300,000 to a young French researcher for a project involving theranostics.

BILATERAL PROGRAMMES





BILATERAL PROGRAMMES PRODUCING REAL RESULTS

COOPOL FRANCE - CHINA PROGRAMME

The French embassy in China has run this programme since 2008. It sets up meetings between SMEs from French competitiveness clusters and Chinese technology parks. The purpose of the meetings is to identify and evaluate the potential for cooperation between these structures and their companies.

THE FRANCO-NORWEGIAN FOUNDATION FOR SCIENTIFIC AND TECHNICAL RESEARCH

For twenty years, this Foundation has developed cooperation on industrial research between companies and technical centres in France and Norway. The Foundation has already provided more than EUR 20 million in financing for projects involving materials, oil and gas, aquaculture and ICT.

FRAUNHOFER INSTITUTES/CARNOT INSTITUTES COOPERATION

France's National Research Agency and Germany's Ministry of Education and Research make joint calls for projects aimed at both countries' networks of institutes with a view to establishing collaborative projects. This promotes relationships between excellent technological

research bodies, forges lasting strategic alliances and raises their international profile. This cooperation effort received EUR 10 million in financing between 2008 and 2010.

FRANCE-QUEBEC SYMPOSIUM ON COMPETITIVENESS AND EXCELLENCE CLUSTERS

The first symposium, held in 2008, gave rise to 70 collaborative projects with 22 clusters present in Quebec and more than fifty French companies. The second symposium held in France in November 2010 focused on health/biotechnology, nutrition and nutraceuticals, aerospace and new technical materials and textiles.

DEUFRAKO PROGRAMME

This programme has been in operation since 1978. It promotes technical and scientific cooperation on land transport between the German Mobilität und Verkehrstechnologien research programme financed by the German Ministry of the Economy and Technology and Predit, the French programme that brings together the Ministries in charge of Ecology, Research and Industry, along with the Agency for the Environment and Energy Management (ADEME), OSEO and the National Research Agency (ANR).



The Millau viaduc © MAEE/F. de la Mure

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Directorate-General of Global Affairs, Development and Partnerships of the French Ministry of Foreign and European Affairs

The missions of the French Ministry of Foreign and European Affairs are:

- summarize information on the changing global economy and put it into perspective, prepare decisions on the French government's foreign policy,
- draft France's foreign policy,
- coordinate France's international relations,
- protect French interests abroad and assist French nationals outside France.

The creation of the Directorate-General of Global Affairs, Development and Partnerships (DGM) in April 2009, as part of the reform of the Ministry, enables diplomacy to anticipate, identify and respond to the challenges of globalisation more effectively.

Confronted with global issues that have a direct impact on the lives of our citizens and multiple actors, the Ministry intends to emphasise the need to tackle global issues, in the firm belief that every major economic, cultural and societal issue calls for collective action with more outward focus, anticipation, interministerial coordination, responsiveness, interdisciplinarity and a resolutely European approach.



Directorate for Communication and the Spokesperson's Office

www.diplomatie.gouv.fr