

ALLIANCE UNIVERSITE ENTREPRISE DE GRENOBLE



ALLIANCE
UNIVERSITÉ ENTREPRISE
DE GRENOBLE

**Experience for Franco-Russian cooperation in
Education, Research,
Technological Development and Innovation**

www.aueg.org



Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

by **Michel Zigone**

- Professor at University Joseph Fourier (Grenoble 1), Physicist, European affairs manager
- Cultural deputy counsellor and attaché for franco-russian cooperation in education at the French Embassy in Russia (2000 – 2004)
- Sources : [French Embassy in Moscow site : www.ambafrance.ru](http://www.ambafrance.ru)



Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

Four departments are concerned by these fields at the French Embassy in Russia :

- The Science, Technology and Space Department (in French, SSTE)
- The academic cooperation in Education : The Department of Cultural Activity and Cooperation (in French, SCAC)
- Nuclear Cooperation : the Nuclear Department
- Economic cooperation : The Economic Mission (in French, ME)



Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

The Science, Technology and Space Department
(in French, SSTE) was created in 2001

Science : 2 types of cooperations :

- The Franco-Russian Jointed Laboratories (FRJL) : 9 FRJL exist today
- The Franco-Russian Research Networks (FRRN) : 10 FRRN exist today

Technology :

- Creation of a Franco-Russian network of Innovation Centres

Space :

- Cooperation between the French compagny CNES, the European EADS compagny and Russian institutionnal space centers and Russian space industrial enterprises



Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

The Science, Technology and Space Department
The Franco-Russian Jointed Laboratories : 9 exist
today.

Examples :

- 1) Poncelet Laboratory (Mathematics), created in 2002, CNRS / Russian Academy of Sciences (RAS) and the Independent University of Moscow
- 2) Jointed laboratory on Catalysis Chemistry, created in 2004, CNRS Lyon / RAS Novosibirsk
- 3) « Non-linear magneto-acoustics in condensed matter », created in 2004, CNRS and university of Lille / RAS Moscow (General Physics Institute of Moscow)
- 4) « Physics of the coherent electronic states in condensed matter », created in 2004, CNRS Grenoble / RAS Moscow (Radio-electronic engineering Institute)

Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

The Science, Technology and Space Department

- The Franco-Russian Research Networks : 10 exist today

Examples :

- 1) « **YAK AEROSIB** » created in 2003, works on systematic observations of CO, O₃ and CO₂ atmospheric sources. RAS Moscow, Tomsk, Krasnoyarsk
- 2) « **Lasers and optical technics of information** » created in 2003. RAS Moscow, Troïtsk, Novosibirsk, St Petersburg
- 3) « **SupraChem** » created in 2005, works on biological supermolecular systems, self organization. RAS, Kazan, Moscow, Novosibirsk, St Petersburg
- 4) « **Vostok** » created in 2004, works on icebiology and paleoclimate in the Russian station « Vostok » in Antarctica. RAS St Petersburg, Moscow, Kazan, Russian federal service for hydrometeorology and environment

Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

The Science, Technology and Space Department

Technology : Creation of a network of Franco-Russian
Innovation Centres in 2002 (RFR)

- RFR is a tool establishing technological partnerships between France and Russia. The RFR database contains **technological offers and technological requests** from Russian and French companies and R&D organizations.
- Two organizations are members of RFR :
 - **French Innovation Relay Centres (IRC)** coordinated by **Oseo Anvar Innovation**
 - **Russian Technology Transfer Network (RTTN)** coordinated by the Foundation for Assistance to Small Innovative Enterprises (**FASIE**).



Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

The Science, Technology and Space Department

Technology : Examples of Technology Transfer Centres :

- Technology Transfer Centre of Moscow : French Group of Ecoles Centrales (Lyon, Paris, Marseille) / State University Bauman of Moscow
- Innovation and Technology Transfer Centre of St Petersburg : University of Franche-Comté (Besançon) / Aerospace State University of St Petersburg (GUAP)

Thematical cooperations : Biotechnologies, Nanotechnologies & Nanomaterials, Optoelectronics are the priority thematics of the Franco–Russian technological cooperation



Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

The Science, Technology and Space Department

The Arcus Cooperation Program :

3 Arcus projects exist between Regions of east of France and Russia :

- 1) « **New materials and environment** » (2006-2008) : Region Lorraine / ~ 10 Institutes of RAS Moscow, ~ 15 Russian universities among which are Moscow State University for Metals and Alloys, Moscow State University for Chemistry « Mendeleev »
- 2) « **Supramolecular Chemistry and Biotechnologies** » (2007-2009) : Region Alsace / Physical Chemistry Institute of Moscow, Arbusof Institute of Kazan, Radium Institute of St Petersburg, Biological Chemistry Institute of Novosibirsk, Oncological Institute of Kiev
- 3) « **Green Chemistry and separative processes** » : This last project is in preparation. Partners : Region Bourgogne, CEA Air Liquide / State University of Moscow « Lomonosov », RAS Physical Chemistry Institute



Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

The Department for Cultural Activity and Cooperation (in french, SCAC)

The Franco-Russian Cooperation in Education takes place in
this department :

It presents several axis :

- **Cooperation Agreements between French and Russian universities** : more than 400 agreements of that kind exist today
- **Franco-Russian joint programs** : More than 40 different programs
- **Promotion for studying in France** : 6 offices and 35 information desks of the CampusFrance Agency exist in Russia (total number of Russian students in France : 2 700 in 2005)
- **Government grants for studying in France** : about 400 scholarships per year for a budget of more than 1M€ 10



Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

The Department for Cultural Activity and Cooperation

- Russian and French Academic exchanges of researchers and professors : about 70 per year
- French language in Russian universities: promotion and support : 305, 000 Russian students learn French (for 5 947, 000 students in the whole Russia) with 3, 410 French professors.
- The Franco-Russian Center for research in social and human sciences in Moscow (INION RAS / CNRS)
- In 2003, France and Russia signed an agreement of a mutual acknowledgment of the academic degrees of doctorate and kandidat nauk



Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

The Department for Cultural Activity and Cooperation

Examples of Franco-Russian joint programs :

- 1) **Double Master « Top Industrial Managers for Europe »** (Bauman University of Moscow, University for radio electronics and automatism of Moscow / Écoles Centrales)
- 2) **Bachelor and Master degrees in Economy and Management** (FINEC St Petersburg / University Grenoble 2, University Paris Dauphine)
- 3) **Medical Specialities Internship** (Grenoble Hospital / Medicine University of Irkoutsk)
- 4) **Double Diploma in Oil Management** (Moscow University Gubkin / French Institute of Oil)

Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

The Nuclear Department and Cooperation

1) Commissariat à l'Energie Atomique (CEA) / The Federal agency for atomic energy (Rosatom)

Cooperation on nuclear reactors, combustible cycle, nuclear security (crises management), radioprotection, fundamental research on the controlled thermonuclear fusion and plasma physics.

Participation of Russian scientists in programs whose experiments require the use of French reactors : ILL (Grenoble) and ORPHEE (Saclay)

2) CEA / Kurtshatov Institute

Agreements between CEA and Kurtshatov for cooperation on nuclear reactors and combustible cycle for innovating reactors

Participation in the AÏDA-MOX program using Russian reactors VVER 1000 (elimination of the Russian military Pu in excess by manufacturing mixed oxyde ($\text{PuO}_2 - \text{UO}_2$) combustible)



Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

The Nuclear Department and Cooperation

3) CEA / Russian Academy of Science (RAS)

- Cooperation between IPSN and Rostekhnadzor on nuclear security
- Cooperation in fundamental research between the Léon Brillouin Lab (Saclay), Gatchina (St Petersburg), Kurtshatov (Moscow), Dubna (the international lab JINR) on condensed matter physics

4) Industrial Cooperation in Nuclear Energy

AREVA NC activities (ex COGEMA) :

- Upstream cycle activities : buying of enriched U and natural U
- Downstream cycle activities : engineering studies for AÏDA-MOX 2 (metallic Pu reconversion, MOX combustible manufacturing, combustible process)

Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

The Nuclear Department and Cooperation

4) Industrial Cooperation in nuclear energy

AREVA NP activities (ex Framatome) :

- Nuclear realizations : Completion and modernization of nuclear centres (Rovno 4 / Khmel'nitski 2) in the framework of TACIS
- Nuclear services :
Agreement with the Murmansk Shipping company for building up stocks for used combustible of Russian nuclear submarines and ice-breakers
- Nuclear combustible : Information transfers, acquisition of new technologies

Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

The Nuclear Department and Cooperation

4) Industrial Cooperation in nuclear energy

AREVA NP activities (ex Framatome) :

- Nuclear realizations : Completion and modernization of nuclear centres (Rovno 4 / Khmel'nitski 2) in the framework of TACIS
- Nuclear services :
Agreement with the Murmansk Shipping company for building up stocks for used combustible of Russian nuclear submarines and ice-breakers
- Nuclear combustible : Information transfers, acquisition of new technologies

Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

The Nuclear Department and Cooperation

4) Industrial Cooperation in nuclear energy

Electricité de France (EDF)

- Improvement and modernization of the security of Russian nuclear reactors (type VVER with pressurized water and RNR of Beloyarsk)
- Pairing of French and Russian Nuclear Centres
- Assistance on Russian nuclear sites
- Training of specialists
- Cooperation with Rosenergoatom (civil nuclear energy producer which has got 10 nuclear centres with 31 reactors for a power of 23 242 MW)



Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

The Nuclear Department and Cooperation

4) Industrial Cooperation in nuclear energy

French-Russian Agreement for supplying French research reactors (ILL in Grenoble and ORPHEE in Saclay) in High Enriched Uranium (HEU), signed in 1996

Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

Conclusion

It is acknowledged that :

- European and Russian peoples have a high academic standard of education
- The scientists and students are often extremely talented and highly skilled
- They do master the highest level in the field of experimental and technical activities in RTD

I would advice you to co-operate more with France and other European countries for the benefit of both Europe and Russia !



Experience for Franco-Russian cooperation in Education, Research, Technological Development and Innovation

CONTACTS :

ALLIANCE UNIVERSITE ENTREPRISE DE GRENOBLE

7C, ch. des Prés – Inovallée • 38240 MEYLAN

- Tel : 33 (0)4 76 18 28 65
- Fax : 33 (0)4 76 18 28 45
- E.mail : aueg@wanadoo.fr
- www.aueg.org

My personnal e-mail: michel_zigone@yahoo.fr