

Annual Report 2006

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Summary Means Employed Multi-annual National R&D Priority Programmes Accompanying Measures International Cooperation

The National Research Fund (FNR) was set up by the Law of 31 May 1999, giving it juridical, administrative and financial autonomy. Through the Fund, an additional impetus was given to Luxembourg research, with the aim

- to create new competence and knowledge,
- to strengthen existing competence and knowledge, and
- to develop national and international synergies in order to increase the attractiveness of Luxembourg as a scientific and economic site of excellence.

Means Employed:

Multi-annual National R&D Priority Programmes:

Since 2000, several multi-annual research programmes have been launched in specific fields of interest to Luxembourg in order to allow:

- Researchers to reinforce their competences and to rapidly achieve progress;
- Institutions to collaborate on joint projects;

- The potential users of the research results to collaborate on novel topics and to profit from the innovations;
- The Fund to submit more daring, but nonetheless profitable, multi-annual programmes in the future;
- The Government to invest in various domains, with the assurance that the set objectives will be reached.

Projects submitted under these programmes must be of an excellent scientific quality, be realistic within the Luxembourg context, and comprise, in the short or long term, a positive economic impact, or an impact on the quality of life in general.

The following multi-annual research programmes have been launched since 2000:

Duration	Programme Title	Budget
2000-2008	Security and Efficiency of New Practices in E-Commerce for All Socio-Economic Actors (SECOM)	EUR 7,500,000
2000-2008	New Materials and Nanotechnology (NANO)	EUR 6,700,000
2000-2007	Sustainable Management of Water Resources (EAU)	EUR 5,000,000
2000-2011	Health and Biotechnology (BIOSAN)	EUR 8,000,000
2004-2011	Medical Aspects of Ageing (PROVIE), Extension of BIOSAN	EUR 2,500,000
2002-2009	Living Tomorrow in Luxembourg (VIVRE)	EUR 12,000,000
2003-2009	Surface Treatment (TRASU)	EUR 6,000,000
2003-2010	Food Safety (SECAL)	EUR 7,500,000
2006-2011	Promotion of International Cooperation (INTER)	EUR 6,000,000
2006-2012	Attract Researchers to Luxembourg - Opportunities for Outstanding Young Researchers in Luxembourg (ATTRACT)	EUR 6,000,000
Total	89 projects financed since 2000	EUR 67,200,000

How to participate in these programmes?

In the framework of these programmes, the Fund announces periodic calls for research projects. The selected projects benefit from a financial contribution granted by the Fund.

Further information concerning the calls for research projects can be found on the Fund's website www.fnr.lu

To whom are the calls addressed?

Calls are addressed to public institutions, Luxembourg administrations and public establishments authorised to undertake R&D activities or technology transfer in their respective fields of activity.

Accompanying Measures:

In addition to the support of research as such, the Fund subsidises accompanying measures, addressed to a larger public and aiming to strengthen the general frame of scientific research in Luxembourg.

The accompanying measures are divided into the following categories:

- MA1: Promotion of scientific awareness
- MA2: Active participation in a scientific conference
- MA3: Organisation of a scientific conference in Luxembourg
- MA4: Scientific publication / doctoral thesis
- MA5: Preparation of a European Union research project
- MA6: Mobility of researchers
- MA7: Training in research project management
- MA8: National research coordination

How to apply for these measures?

For the accompanying measures MA1/MA3/MA6/MA8 the submission dates are on 1 April and 1 October of each year. For the remaining measures, there is no fixed deadline.

All the relevant information concerning the accompanying measures can be found in detail on the website www.fnr.lu

To whom are the calls addressed?

These measures are addressed to a larger public:

- Public institutions or services authorised to undertake R&D activities,
- Associations,
- Individuals who pursue activities of scientific nature, including students.

International Cooperation:

Establishment of strong collaborative work within Europe has become a priority within recent years. The National Research Fund is very active on the international level through its multi-annual programme INTER, and is a member of:

- The European Science Foundation (ESF),
- The European Union Research Organisations' Heads of Research Councils (EUROHORCs),
- The European Research Consortium for Informatics and Mathematics (ERCIM),
- Several European Research Area Networks: ERA-Age, MATERA and NEURON,
- The International Council for Science (ICSU).

For further information, please visit the Fund's website www.fnr.lu or send an email to info@fnr.lu

The annual report may be downloaded from www.fnr.lu



Romain Henrion

We are pleased to present you the Annual Report 2006 of the National Research Fund Luxembourg, which aims to provide a general outline of the Fund's main activities in 2006.

OECD Review

On 31 May 2006, the OECD presented its review of Luxembourg's research and innovation policy. On that occasion, it put forward several recommendations to improve public governance concerning innovation and research, all the while stressing that in Luxembourg "there is a high potential for future developments and these prospects are enhanced by a consensus amongst all relevant actors."

As to the National Research Fund, the OECD noted in its recommendations that the "[...] FNR has developed considerable competences that should be used in any form of restructured governance system."

In 2007, the implementation of the OECD recommendations will be discussed and prepared by the Ministry of Culture, Higher Education and Research, together with the concerned actors. The central element of these discussions will be the drawing up of Performance Contracts between the Ministry and the public research institutions, as well as Luxinnovation and the Fund.



Jean-Frank Wagner

FNR Foresight Study

In January 2006, the Fund has launched the FNR Foresight study and is currently finalising the last phase of the exercise. Over 300 researchers and potential users of research results, both from the public and private sector and from Luxembourg as well as from abroad, have actively taken part in the study with a view to identifying potential research domains and priority axes for Luxembourg research. Herewith, we would like to warmly thank all the participants for their cooperation and their commitment.

The Fund will submit the FNR Foresight results to the Ministry of Research in June 2007 in the form of a final report including concrete recommendations for the future. The results of the study will also be presented to the public.

The FNR Foresight study as well as the ongoing multi-annual research programmes have given researchers the opportunity to express their views and to participate in the discussion on the future orientation of research in Luxembourg. We believe that implicating researchers and users in such discussions is very important and we intend to multiply initiatives in this direction in the future.

Towards Lisbon

In March 2000, during the Lisbon European Council, the European Union set itself a new strategic goal for the next decade: to become the most competitive and dynamic knowledge-based economy in the world.

In this context, there is a real need to address human resources in R&D in Luxembourg, in order to increase the competitiveness of Luxembourg research.

Several initiatives in this direction have emerged recently, by the Government as well as the various research players – such as the National Research Fund, who has added the programme “ATTRACT: Attract researchers to Luxembourg” to its list of instruments designed to promote mobility and excellence among researchers. Additionally, the promising developments of the University of Luxembourg and the Cité des Sciences (City of Sciences) will certainly allow a better support to researchers in the future.

Nevertheless, we believe that all actors, including the Fund, will have to reconsider their strategies and instruments in view of a better support for excellent researchers and, in general, of improved working conditions for researchers in Luxembourg.

2007 – Year of Changes

2007 will be a year of changes for the National Research Fund. Following the FNR Foresight study, various new activities will be started, including new multi-annual research programmes. Also in 2007, the transfer of the reformed Bourses de formation-recherche (education-research grants) from the Ministry of Research to the Fund will be prepared, the official transfer being planned for early 2008.

Moreover, the Fund will adapt its procedures for the management of its activities, in view of a further professionalising and a maximum of transparency towards its beneficiaries.

Finally, in 2007, special attention will be paid to science communication and the promotion of scientific awareness, among others through workshops bringing together the concerned actors with the aim of developing a common view and common actions.

A first visible symbol of these changes is the Fund's new logo, which we are pleased to present for the very first time in this Annual Report.

Wishing you pleasant reading!

Romain Henrion
*President of the
Board of Administration*

Jean-Frank Wagner
*President of the
Scientific Council*





FNR Foresight

The FNR Foresight Exercise

What are the first results? The future of the foresight exercise

The FNR Foresight Exercise was officially launched in January 2006. The stakes of this exercise are quite high: it aims to identify research domains and priority axes with a socio-economic interest for Luxembourg and to develop future research programmes for the FNR from these domains.

What is a foresight exercise?

Foresight exercises are a relatively recent phenomenon. The first exercises of this kind took place in the 1970s in Japan. After that they were initiated in the 1980s in France and in the early 1990s in the USA. The German and UK foresight exercises, undertaken in the 1990s, are milestones in this field and have greatly influenced current studies.

In general, foresight exercises aim to identify actions to be taken today for a better future tomorrow and lead to the identification of promising areas of strategic research. Yet, a foresight exercise is different from traditional planning efforts as it is based on more interactive and participative methods. The various actors and users of Luxembourg research (research institutions, public authorities, industry, NGOs,...) were consulted in various ways to provide an open space for deliberation. Interviews were made, questionnaires were sent out, workshops were organised, internet forums were provided. This, in order to come to a consensus, a common vision of the future.

To do the study, the FNR collaborated with foreign experts. On the one hand, Dr. Michael Keenan from the PREST unit (a group specialised in Policy Research in Engineering, Science and Technology) at the University of Manchester is supervising the exercise. On the other hand, CM International, a European consulting group in innovation and technology management, managed the collection of data during the first phase of the exercise from January to August 2006.



Launching of the 1st phase of the FNR Foresight in January 2006

First Results

The results of the first phase of the exercise have been made public in October 2006. According to Michael Keenan there have been a number of successes so far: it is a welcomed exercise¹, a preliminary list of research topics has been generated, there has been a debate around strategy options for the research system, a high number of research actors has taken part in the exercise (through questionnaires, interviews, workshops, etc.), there has been good networking between stakeholders, and forums have been provided to exchange ideas.

There has also been an evaluation of research domains through an online survey with almost 300 participants.



1. According to an online poll on the views on the foresight exercise, 65% find it a great initiative and are hoping for interesting results, 23% find it a good idea but are doubtful of the follow-up, 4% see no use in the exercise and 8% are not sure of what it is trying to achieve. See <http://www.fnrforesight.lu>

What is a foresight exercise? Foresight exercise Challenges

At the end of the first phase of the exercise, 25 domains falling into six broad fields of research have been identified as being of interest for Luxembourg information and communication technologies; physical sciences and engineering; life sciences; environmental sciences; economy, law and finance; and social sciences and humanities. All of these domains have been assessed according to several criteria e.g. is it feasible to achieve critical mass and international competitiveness in a 10 years time frame or is the research domain attractive to Luxembourg's society? Within the economy, law and finance field, for example, the following ideas have emerged: improving business environment, regulation, governance and European integration. In the social sciences and humanities field, two large domains have been identified (school, work, qualifications, welfare as well as culture, language diversity, history, identity) plus one interdisciplinary domain (ageing). In the other four fields, preliminary domains of interest have also been identified.

The future of the foresight exercise

After the final report of the first phase had been published, the second phase of the exercise began. It is carried out by a consortium composed of two German consultancy groups, VDI (the Verein Deutscher Ingenieure) and Z_Punkt. During this phase (September 2006 – June 2007), 6 expert panels, each consisting of around 15 to 25 Luxembourg and international experts, meet twice with the FNR and the consultants. The aim was to identify

priority domains for the six fields retained, drawing upon the data collected during the first phase of the exercise.

Concrete priorities are due to be submitted to the Government in June 2007. After the decision of the Government on which research priorities to focus national efforts on, implementation of these priorities will be discussed with the relevant stakeholders. One particularity of the foresight exercise is thus that it will be translated into concrete actions and measures. In other countries this is not always the case and foresight exercises do not always have practical consequences.

In Luxembourg, however, we can expect that foresight exercises will be gaining in importance as a means to systematically deal with expectations and future visions - as well as their strategic implications². Foresight exercises hold the promise of "wiring up" innovation systems through the encouragement of networking, the facilitation of learning, and the creation of future oriented attitudes.



Young Researchers Workshops in March 2006

2. Konrad et al. "Foresight and the reconstruction of societal expectations", paper presented at the EASST conference *Reviewing Humanness: Bodies, Technologies and Spaces*, August 23rd-26th 2006, University of Lausanne. In science and technology policy, various techniques are used to deal with expectations: forecasting, foresight, scenario-methods, technology roadmaps, and life cycles.

The FNR Foresight Exercise Challenges



Minister François Biltgen at the launching of the 2nd phase of the FNR Foresight in October 2006

Challenges

Apart from the methods used (i.e. questionnaires, interviews, workshops, etc.), there are at least two other elements that make the foresight exercise a challenging enterprise: hypes and the nature of the future. First, despite efforts to devise well-balanced and participatory foresight methodologies to moderate expectations, foresight exercises are (in general) always confronted with the problem of opinion leadership and the risk of reinforcement of hypes.


So far the foresight exercise has been relatively smooth. Yet, vision building is not straightforward and we might expect some challenges in the near future. As soon as visions become more concrete, and involve deciding upon certain priorities, conflicts of interest between stakeholder groups often dominate the debate.

Second, the FNR aimed to come to a consensus, a common vision of the future. But we now realise that a simplified version of one future does not leave much room for a more complex and realistic set of possible futures. Futures are in the plural. And, there remains a basic problem with mapping out the future of research: scientific advancement can, by definition, never be planned, it can never be expected to move into a certain direction (otherwise it would not be research).

All in all, through the foresight exercise, for the first time ever in Luxembourg, priority setting and research policy is based on an informed practice, involving a broad range of actors and using participative methods. Luxembourg science policy has become more democratic, more robust, more professional, more quality-oriented, and more reflective.

Yet, despite these positive trends, everyone still has got some things to learn: Luxembourg's researchers have to learn how to cultivate a productive dialogue on the future of science and a critical appraisal of research; the FNR has to learn how to best adopt the tools of foresight exercises to Luxembourg while making sure that it will be an open, fair, legitimate, effective and trustworthy exercise; and, finally, the foreign experts who inquire and assess the national research landscape have to understand the particularities of the country in order to best represent research actors. The promise, at the end, will be an even better foresight exercise next time.

*For the FNR,
Morgan Meyer, Frank Glod, Carlo Duprel*

A close-up photograph of a person's face, focusing on their eyes and nose. They are wearing clear safety goggles. The background is blurred, showing some light spots. The text 'Research Careers in Luxembourg' is overlaid in white, with two L-shaped brackets framing it.

Research Careers
in Luxembourg



For the first time in the very young Luxembourg research history, the working conditions and career perspectives of researchers are becoming an issue of a larger public discussion.

European Charter for Researchers and Code of Conduct for the Recruitment of Researchers

First, on a European level, research careers and working conditions for researchers have been an important topic of discussion since the growing success of the Marie Curie Fellowships and, more recently, with the Commission's Recommendation of 11 March 2005 on the "European Charter for Researchers and code of conduct for the Recruitment of Researchers" (called "Charter" hereafter). The success in the implementation of the Charter is reviewed annually by the EU member states¹.

Early 2007, the Charter was already signed by more than 800 institutions in Europe. The signature means that institutions agree with the basic principles laid down in the Charter and develop measures to improve the situation of researchers in identified areas. As an example, let us mention some of these principles: On the side of the employers and funders, the Charter mentions the need for measures to offer improved working conditions for researchers, to recognise their profession, to offer a certain stability of employment contracts, fair and attractive salaries with appropriate social security, career development appraisal systems and career advice as well as the transparency of recruitment procedures. On the side of the researchers, the following principles are considered to be essential: research freedom, professional responsibility and accountability, the obligation to communicate and disseminate or exploit research results, public engagement, the accomplishment of managerial duties, a structured relationship with supervisors or, for senior researchers, the supervision, mentoring and career advice as well as a constructive relationship with early-stage researchers.

In Luxembourg, the CRP Santé is the only institution so far who has signed the Charter on 28 February 2007². A common signature by all public research institutions and funding bodies including the National Research Fund (FNR) is in preparation by the Ministry of Research and should be put into practice during the second half of 2007.

BFR Reform

Another reason for the growing interest in the careers and working conditions of researchers in Luxembourg is directly linked to the Charter as well. It concerns the current reform of the Research-Training Fellowship scheme, the so-called BFRs³, a scheme that goes back to the Framework Law on Research in 1987 and that is currently still managed under the auspices of the Ministry of Research. In 2005, 86 researchers received support under the BFR scheme for their doctoral and postdoctoral research projects in Luxembourg and abroad (compared to 46 in 2000). The scheme is growing rapidly.

With the current reform, the management of the future PhD and postdoctoral scheme is transferred to the FNR after the adoption of a new law, probably in early 2008. Important improvements of the scheme are suggested, including a transparent selection procedure based on peer review by independent experts as well as the promotion of work contracts for researchers. The BFR reform is viewed in general very favourably by the involved researchers and institutions.

In any case, it is essential to develop a potential base of researchers in Luxembourg through an adequate funding of young doctoral and postdoctoral researchers in and outside the country.

1. The Charter may be downloaded on the website <http://ec.europa.eu/eracareers/europeancharter>. The Charter is reviewed each year on 15 December: member states inform the Commission of measures they have taken further to the Recommendation. Progress is monitored by the Steering Group on Human Resources and Mobility in Brussels.

2. A full list of undersigning organisations of the Charter per country may also be found on the website <http://ec.europa.eu/eracareers/europeancharter> (see "more info").

3. Bourses de formation-recherche

European Research Area and the Lisbon Strategy

The increasing awareness of the need for competition to attract the best researchers to Luxembourg has also arisen throughout the discussion of the Lisbon strategy.

Most recently, in the Green Paper on the "New Perspectives in the European Research Area (ERA)"⁴ published on 4 April 2007 by the European Commission and aiming to assess the achievements of the ERA in view of the Lisbon targets, an "adequate flow of competent researchers" is identified as the first of five most important actions to strengthen the ERA. The four other actions concern "world class research infrastructures, excellent research institutions, effective knowledge sharing, and a wide opening of the ERA to the world".

In the national implementation plan of the Lisbon strategy, the so-called *Plan national pour l'innovation et le plein emploi*⁵, one of the stated objectives for Luxembourg is the increase of the proportion of researchers, from 6 researchers per 1,000 persons employed in 2005 to 10 researchers per 1,000 persons employed in 2010.

Up to now, researchers have played a relatively limited role in the definition of the national research agenda in Luxembourg. A systematic consultation of researchers is not built in the current system, with the recent exception of the FNR Foresight⁶ that has to be certainly continued over the next years.

OECD Review of Luxembourg's Innovation Policy

Astonishingly the "OECD Review of Luxembourg's innovation policy" describes the Luxembourg system as having a "pure bottom up approach"⁷. In a bottom-up system, you would assume that researchers contribute to setting the agenda for research.

However this is not the case in Luxembourg and the OECD statement is misleading. What the OECD actually means is the absence of a top down approach, as well as the fact that the institutional actors are still predominant to define the research policy. Against practice in other countries, the decision bodies of the Luxembourg public research institutions do not count a high number of researchers. To sum up, there is currently neither a top down strategic research policy nor a bottom-up involvement of researchers.

The general statement in the OECD Review that "highly skilled people are of key importance in enabling innovation"⁸ is unfortunately not accompanied by an overview of the current situation of researchers in Luxembourg, but only by a very rough indication of some statistical data. The time frame of the OECD Review did not allow to go into further detail.

4. The Green Paper is published on the website of the European Commission <http://ec.europa.eu/research/era> and the public consultation will be open until 3 August 2007

5. Available online <http://www.eco.public.lu/documentation/publications/pnr/>

6. See www.fnr-foresight.lu; the final report is intended to be published in 2007

7. Draft final report of the OECD report presented on 24 May 2006, p. 4; the final report will be published by the OECD in 2007

8. See OECD Review Draft Report, page 77

Need for a National R&D Human Resources Policy

In terms of human resources, public research institutions in Luxembourg currently apply very different strategies, including huge differences in salaries and types of contracts for the same categories of researchers. Thus, what is needed on top of the pure institutional rules is a national strategy on human resources with clearer perspectives concerning scientific careers in Luxembourg.

A study that analyses the situation and suggests options for improvement was announced by the Ministry of Research for early 2008. It will be essential to dispose of the results of this study in order to base future reforms and strategic options on a well informed discussion including an analysis about best practices in other countries.

It is true that Luxembourg is certainly not the only example in Europe where there is a need for a more coherent human resources policy and for a better support of young researchers. Recently, under the first call for the newly introduced "Starting Independent Researcher Grants (SIRG)" of the European Research Council (ERC), more than 9000 proposals were received. In an interview by *The Scientist*, the Secretary General of the ERC, Professor Ernst-Ludwig Winnacker, commented that "From the sheer numbers you could argue that there is a lack of opportunity for young investigators to become independent... It shows that young scientists see this as a last straw to apply for funding, which is a bad sign for national activities."

Recent Developments in Luxembourg

It should nevertheless be mentioned that there are very positive developments in Luxembourg, in addition to the BFR reform and the planned signature of the Charter that have already been quoted. A major step for a better support for researchers coming to Luxembourg has been the recent initiative of a national Mobility Centre. Already announced in the Governmental Programme in 2004, the Mobility Centre is due to be coordinated by the University of Luxembourg and will be networked with the European Commission's ERAMORE network and the ERACAREERS⁹ internet portal. This Centre should take up its activities in the course of 2007. It will set up a broad information portal for researchers that come to Luxembourg, offering among other support in practical issues of daily life, and also listing job opportunities in the public and private sectors.

Furthermore, the introduction of performance contracts together with the aforementioned BFR reform and signature of the Charter, the promising developments of the University of Luxembourg and the Cité des Sciences, will certainly all together allow a better support for researchers than before.

Besides these changes in the political framework, the introduction of the ATTRACT programme of the FNR is an important step towards a certain autonomy for young excellent researchers as it will allow them to set up their own projects together with a host institution in Luxembourg. The initial, relatively long 5-year support should allow researchers to consolidate a small research group in the host institution and to find additional funding for long term collaborations. The FNR however only funds up to two candidates per year under this scheme.

The mobility grants under the accompanying measures of the FNR are also worth mentioning. They allow the funding of researchers for a stay lasting between 2 weeks and 12 months. Eligible are researchers based in Luxembourg and going abroad or foreign researchers coming to Luxembourg. Researchers should build up a medium to long-term cooperation between their home institution and their host institution on the basis of a common research project. Thus, the scheme also supports sabbaticals.

Improving Support for Researchers in Luxembourg

There is certainly more to do to improve the support for researchers in Luxembourg, at any stages in their careers.

It becomes apparent that one or several additional funding instruments between the reformed BFR scheme and the very high ranked ATTRACT scheme as well as the 'short-period-oriented' mobility grants will be needed in the future. In other European countries, for example, additional schemes exist for postdoctoral researchers and also schemes for specific categories of researchers, for example to promote the reintegration of Luxembourg researchers abroad or to increase the proportion of female researchers in Luxembourg.

The basic challenge is to offer young researchers interesting and transparent perspectives to come to Luxembourg, so that they can be sure that, if they are among the best, the Luxembourg research system allows them to develop a research career in a stimulating research environment.

Besides, advanced excellent researchers also need to be offered better long-term institutional support and greater autonomy in decision making in order to keep them in Luxembourg and to allow them to fully develop their potential. If Luxembourg does not succeed in offering good conditions, excellent researchers may leave to other countries (EU and non EU) where they are offered better opportunities.

Independent peer evaluation at different levels including the level of institutes and research groups should become current practice in Luxembourg, as it is the case in the majority of European countries, to help identify the best researchers and create an atmosphere of trust.

All actors, including the FNR, have to rethink their strategies and instruments in view of a better support for excellent researchers and, in general, of improved working conditions for researchers in Luxembourg, this in order to allow them to participate more actively in the research system while leaving them enough freedom for their own initiatives.

*For the FNR,
Ulrike Kohl*



Multi-annual
Research
Programmes



Success Stories

More secure IT Systems for the financial sector

Access SME: Secure e-Commerce for SMEs

Within the scope of the FNR SECOM programme, Eric Dubois and André Rifaut have led a research project entitled "Access SME: Secure e-Commerce for SMEs", a project which ran from the 1st of January 2002 until the 31st of December 2005. Both researchers are working at the Centre d'Innovation par les Technologies de l'Information at the CRP Henri Tudor.

The project examined secure IT systems in particular in the financial sector. Initially, the focus was going to be on secure e-Commerce in the context of SMEs (Small and Medium-sized Enterprises). After a few months, however, both researchers came to realise "that the topic was a little bit too innovative with respect to the level of maturity of Luxemburgish SMEs regarding e-Commerce security concerns". Thus, with the support of the FNR, the project was re-oriented towards the financial sector, a sector where there is a clearer concern regarding security issues.

The methods used for the research project were similar to those of many other projects run at the CRP Henri Tudor. In fact, the results of the project stem from the application of a so-called "action research" approach. This approach is directly aimed towards the identification of the needs and problems of (an) organisation(s). An action research approach tries to do two things at the same time: first, to directly improve the participating organization(s); second, to generate scientific knowledge. Yet, this method differs from a more "classical" approach where a scientific body of knowledge is developed beforehand to validate it in terms of organisational improvement.

The FNR's contribution to the project was important. For the Centre d'Innovation par les Technologies de l'Information, the FNR offered the opportunity of developing new competences and investigating new innovative ideas within a mid-term (3-5 years) application range. This contrasts with many projects directly sponsored by organisations and enterprises which demand for results to be applicable within a 2-3 year time frame.



The methodology developed in the project

The main result obtained by the project is a risk-based methodology allowing to design secure IT systems. This methodology covers a great variety of issues, starting from the understanding of the business assets and goals of an organization up to the final product: a secure IT architecture fulfilling the goals and securing the business assets.

The results of the project have been disseminated within the scientific community through conferences and scientific publications. Nonetheless, there are also practical applications stemming from the research. "The methodology that was developed can be used by service providers of SMEs, or by IT teams working in international organisations for designing secure IT systems", Eric Dubois and André Rifaut reveal. Also, the project has allowed the researchers to develop new competences in security risk management, competences which can be drawn upon for teaching purposes. In fact, these competences are now directly mobilized for a new Master course in Security Management recently launched in cooperation with the University of Luxembourg. As a follow-up of the FNR project, the researchers have also started (and now finished) a project with the CSSF (Commission de Surveillance du Secteur Financier). This follow-up project was geared towards the development of a process-based approach for the management of operational risk management within financial institutions according to the new Basel accord.

Although the FNR-sponsored project has now come to an end, this does not mean that research within secure e-Commerce and IT infrastructures will stop. At the Centre d'Innovation par les Technologies de l'Information, researchers are considering to further develop this strand of research. In fact, research is being pursued on security risk management, where a small FNR project is currently undertaken which deals with the development of a risk management engine. This work is linked to a PhD research project also conducted on this topic. Cooperation with the financial sector is also being considerably extended with the recent launch of the INNFINANCE project, which deals with the identification and management of new services and associated practices in this sector.

*For the FNR,
Morgan Meyer*

Success Stories

Towards a better identification of prostate cancer

A molecular pathology approach for prostate cancer research : Application of the laser capture micro-dissection technology

Within the scope of the FNR BIOSAN programme, a team around Dr. Nelly Kieffer is currently carrying out a research project entitled "A molecular pathology approach for prostate cancer research: Application of the laser capture micro-dissection technology". This project, which started the 1st of November 2002 and was initially due to finish the 31st of May 2007, involves the Laboratoire de Biologie et Physiologie Intégrée (based at the University of Luxembourg), the National Health Laboratory (Laboratoire National de Santé) and the Centre Hospitalier Emile Mayrisch.

When the BIOSAN programme was launched, the need to do research on cancer, preferably on breast cancer and on prostate cancer, became apparent. Yet, there is very big international competition within the area of breast cancer research, so that launching a research project in this area would certainly have meant duplicating efforts. This, especially as both previous experience and a critical mass in this domain are absent in Luxembourg. Dr. Kieffer explains: "We thus made the choice to do research on prostate cancer, while grounding our methodological approach on the exploitation of histological blocs from the Morphological Registry of Tumours of Luxembourg. This is a unique national registry that does not exist in France, nor in Germany or in the United States, and which has permitted us to carry out very competitive work on an international level".

Prostate cancer is the most commonly diagnosed non-cutaneous cancer and the second leading cause of cancer-related death for men in Western industrialised countries. With this in mind, the objective of the project is to set up new, state-of-the-art molecular biology technologies in order to search for and identify new prognostic biomarkers able to discriminate indolent prostate cancers from tumours having the potential to progress to lethal metastatic disease. The following methods are used for the research project: laser micro-dissection technology and real-time PCR (Polymerase Chain Reaction), together with immunohistochemistry.

The results of the project have been disseminated within the scientific community through conferences and scientific publications. In particular two publications in high-ranking scientific journals (the International Journal of Oncology and the International Journal of Cancer) were published. The results of the project have even been discussed in OncoLink, a prominent web resource for cancer issued by the University of Pennsylvania. In April 2007, Reuters Health has reported therein on the results while interviewing Dr. Kieffer. The fact that the loss of PTEN expression may be an early marker of prostate cancer metastasis risk can potentially be of interest for the scientific community working on prostate cancer. But besides the scientific community, there

are, of course, also practical applications stemming from the research. "It is clear that the results will first of all be of benefit for those who have got prostate cancer because we have identified a marker that could probably identify the patients whose prostate cancer will evolve into the aggressive metastatic form", Dr. Kieffer reveals.

The research project was extended for another 2 years, which will enable for a transfer of technology from the Laboratoire de Biologie et Physiologie Intégrée to take place and to create a new laboratory of molecular pathology at the National Health Laboratory. This new laboratory will work in close collaboration with the department of histo-pathology and will routinely utilise the techniques that were developed during the first phase of the project. According to Dr. Kieffer, these new molecular technologies will contribute to a better diagnostic of prostate cancer and more precise evaluations of the anomaly of cancer cells.

*For the FNR,
Morgan Meyer*

A molecular pathology approach for prostate cancer research: Application of the laser capture microdissection technology

Success Stories

Exploring identities and memories in Luxembourg

History, Memory and Identities

"When Benoît Majerus, who worked at the Centre d'Etudes et de Documentation Guerre et Sociétés contemporaines in Brussels, invited me in 2002 to put together a research project to investigate the construction of memory in Luxembourg, I did not hesitate", recalls Professor Michel Margue, who has been interested in the construction of memory for political ends since a number of years.

5 years later, Professor Margue, with the help of Benoît Majerus, Sonja Kmec and Pit Péporté are about to complete their research project entitled "History, memory and identities", a project which explores the role of the "places of memory" (lieux de mémoire) in the constitution of Luxembourg collective identities. The project is carried out at the research unit "Identities, Policies, Societies, Spaces" (IPSE) at the University of Luxembourg.

The approach of French historian Pierre Nora was adapted to the project in order to study the manner, the ways and the mechanisms through which the past is brought up to date and enters into memory. The goal of the research project was to examine the mechanisms of the production of collective memory - to study all the media and all the vectors which make it likely for a historical element to enter the memory of a collectivity. Thus, in order to study something like a national memory, "official" media has to be examined: speeches, State monuments, textbooks, official publications, emblems, names allotted to public buildings and streets, and so forth. Yet, the research project was not limited to a simple inventory. The goal was also to investigate the sense, the symbolic meaning that is given to these "places" in official discourse. The Roude Léiw, the Gëlle Fra, and perhaps the Nei Breck or the Grengewald are all recent illustrations of this process.

A couple of points seemed crucial for providing an "open" methodology. First, the sense of a "place of memory" is never fixed: it changes within historical and political contexts; it is object to negotiation, to opening or withdrawal, and can thus cause violent debates about memory. Second, certain elements of the past are forsaken; researchers should thus not forget them a second time. Finally, the research was also comparative: the specificities for Luxembourg were also situated within other European projects analysing national histories.

A study of the "places of memory" centred on the dynasty, the language, the notion of "foreigners", the symbolism of the State, Europe, and "minorities" is extremely revealing of the evolution of the Luxembourg society. Such a study helps to understand the fundamental stakes which will have to be confronted in the near future, such as debates on Europe, the role of the dynasty within the State, nationality, heritage, migrations,... The current and increasingly polarized discussion around the Luxembourg flag is very revealing here.



No Pardon, ra' de Léiw
Le lion rouge luxembourgeois vainqueur
The victorious Luxembourg Red Lion



In terms of content, the project has contributed to foster an important development for the historical sciences in Luxembourg, namely to conceive of history as a science which studies the present and not the past, as is sometimes too naively thought.

The FNR initially granted a modest financing for the development of the project. Then, in 2003, the FNR agreed to fund two post-doctoral researchers for two years. The FNR also covered for all the stays abroad of the research team, the assemblage of a specialized library, the expenses for organizing workshops and conferences and the expenses for publications. "Apart from the financial contribution", Professor Margue explains, "it was especially the encouragement for the initiative and the recognition of the work provided that seemed fundamental to me. In this sense, and in our field of research, the FNR is a pioneer in Luxembourg".

The first publication stemming from the project is a collective work aimed at a large audience. The research team also contributes to the development of the future Museum Draï Eechelen. There have been many interventions outside academia through conferences, public standpoints, participation in exhibitions, press articles. Two more scientific publications are due to come out by the end of 2007.

After the study of the collective memory - which is far from being completed - several projects aimed at investigating memory at the level of reception were launched at the University of Luxembourg. There is an obvious gap between official discourse and the reception of this discourse. The identity that a nation state or any other community would like to convey does only partially correspond to the consciousness of an identity developed at the base - which makes the term "identity" rather random, or even dangerous.

The analysis of the evolution of the dominant discourse will thus be further developed whilst paying more attention to the identity consciousness of Luxembourgers. A current research project funded by the FNR is thus exploring, amongst other things, the evolution of the historical consciousness inside families in relation to immigration, life on the countryside, iron- and steelworkers or those who suffered during World War II.

On a wider scope, it was possible to gather researchers around questions on social cohesion and identity within the IPSE research unit at the University of Luxembourg. At the moment, there still are important constraints and time and trust is needed for research teams to be able to work in good conditions. "Collaboration between the FNR and the University is for us the key for future success", Professor Margue declares.

*For the FNR,
Morgan Meyer*

Success Stories

A new platform for monitoring heart failure

Luxembourg Heart Failure Project: Home-monitoring of patients with severe heart failure

Dr Daniel Wagner, who works at the Centre Hospitalier de Luxembourg, is about to complete a research project entitled "Luxembourg Heart Failure Project: Home-monitoring of patients with severe heart failure". This project is looking at the non-invasive tele-monitoring of heart function and studies non-invasive determination of cardiac output and pulse transit time, and it is undertaken in close collaboration with Norbert Rösch from the CRP Henri Tudor.

With new methods for treatment (such as dilatation) being available, patients who have had a heart attack have now a better chance for survival. However, a certain number of patients will have a weaker heart after a heart attack and they will often develop heart failure (insuffisance cardiaque), a condition in which water accumulates in the lungs and in the legs. Heart failure is a severe disease that is characterised by numerous relapses (rechutes), which will need prolonged stays in hospital. The quality of life of such patients is much diminished. In addition, the costs of heart failure are enormous (3% of the budget of the Caisses de maladie). Around 10 years ago, studies in which nurses regularly phoned with patients with heart failure have shown that a close following of these patients is very important in order to avoid relapses. In 2000, the idea came up to use more sophisticated means of telemedicine to follow patients with heart failure.

The initial idea was to find an easy parameter to measure, a parameter that, on the one hand, reflects the heart function and, on the other hand, can be transmitted via telemedicine from a patient's home to the hospital or medical cabinet (so called home-monitoring). Some of the products that are available on the market were initially tested, but these were too imprecise for measurements. Then, it was tried to measure the flow of the heart in a non-invasive way but this also provided measures that were not precise enough. Then, the speed of the pulse wave was studied and a platform was conceived that was capable of measuring and transmitting this new parameter. (The speed of the pulse wave is directly linked to the rigidity of arteries, which, in turn, augments proportionally with the degree of heart failure.) This platform for home-monitoring is original and the speed of pulse waves is measured with data obtained with an ECG (Electrocardiogram) and a little device fixed to a finger (a so-called oximeter). These measures are easy to make and can be done in one minute only.



The tele-home monitoring system

The FNR has contributed 720,000 Euros to the project. In addition, the FNR has also significantly helped to organise meetings which aimed at facilitating the technology transfer of the project. The platform for cardio-vascular monitoring is capable of measuring arterial tension, heart frequency, oxygen saturation, speed of pulse wave, as well as the weight of a patient. All these variables seem to be critical for following patients with heart failure. The fact that these variables can be reproduced with the help of the newly developed platform was confirmed with multiple measures which have been repeated over time with healthy patients and with patients with severe heart failure.

The variables that were obtained with the home-monitoring platform were studied in different phases of the disease and more than 50 patients were followed over a period of 12 months. It seems that the relation between the speed of pulse wave and the arterial tension varies according to the severity of the heart's condition. This parameter could be further used as an early marker for an eventual relapse of the disease.

The results of the project have been presented at a couple of international conferences and have been in part published. The platform for monitoring has also been patented. And, a start-up company (www.monitor-it.lu) was created in order to further develop and improve the project. In the near future, more work will be undertaken on the subject and there will be a small random study in Luxembourg. While there are contacts with cardiological centres in Homburg/Saarbrücken, Nancy and Munich for a study of a bigger scope, the funding of such a study still needs to be secured.

*For the FNR,
Morgan Meyer*

Success Stories

Innovative surfaces

Development of innovative surfaces by means of optimised plasma techniques and technology transfer to industries

A research project entitled "Development of innovative surfaces by means of optimised plasma techniques and technology transfer to industries" is currently being carried out within the scope of the FNR TRASU programme. The aim of this project is to initiate innovative surface treatment activities in Luxembourg to support the industries. It is within this context that the researchers involved in the project applied to the TRASU programme call of the FNR. Three public research institutes are involved in this project: the CRP Gabriel Lippmann (Département Science et Analyse des Matériaux (SAM), Dr. Migeon), the CRP Henri Tudor (Laboratoire de Technologies Industrielles et Matériaux (LTI), Dr. Ruch) and the University of Luxembourg (Dr. Sanctuary).

The project aims at creating competences in Plasma Surface Treatment in Luxembourg covering the whole chain of innovative and concurrent research and engineering. This chain starts at the level of fundamental research on plasma science and ends at the creation of a semi work (pre-industrial) pilot prototype for surface treatment.

At the CRP Henri Tudor, the work undertaken deals with the development of anticorrosion coatings. Nonetheless, the TRASU opportunity is firstly used to create fundamental knowledge and know-how concerning atmospheric plasma treatment. The LTI's objectives are, in fact, fourfold. First, creating sufficient scientific and technological knowledge and competences. Second, applying acquired knowledge to solve an important economic and environmental issue. Third, creating a scientific and experimental site with a flexible prototype for investigating and experiencing on further industrial surface treatment problems. And, forth, extending the field of competence to a wider spectrum of applications with respect to the bulk and surface materials.

At the CRP Gabriel Lippmann, the fundamental part of the TRASU project is carried out with the participation of several University laboratories in Luxembourg, France and Belgium, and the collaboration with the Fraunhofer Institute of Braunschweig in Germany, one of the most experienced team in Europe in atmospheric plasma. The fundamental studies are made possible via PhD theses with the innovative techniques available at SAM in the field of plasma characterisation, plasma assisted deposition and surface analysis. The fundamental results support the studies on different innovative industrial plasma applications such as surface cleaning, adhesion promotion, corrosion protection and wear resistance with the participation of several companies present in Luxembourg. The two main strengths of the TRASU project at SAM are the comparison of different plasma technologies for the same application, especially in the atmospheric plasma field, and the association of different scientific fields as plasma characterisation, surface treatments, surface analysis, corrosion, adhesion and wear resistance which allows a complete understanding of the processes involved in the surface treatments. These two main strengths are possible because of the collaboration of several academic and industrial partners, because of the numerous high-performance techniques (Optical Emission Spectroscopy for plasma characterisation, plasmas at low- and atmospheric-pressure for surface treatments, SIMS, XPS, TEM and AFM for surface characterisation, electrochemical techniques for corrosion studies), and because of the complementarities and experience of the scientific staff involved in this work.

What results have been obtained thus far? It has been found that some silicon oxide-based plasma polymerised layers provide a significant passive corrosion protection. Significant improvement of the protection has been achieved by means of an increase of oxygen concentration in the gas mixture and the control of the chemical composition of the film. Moreover, deposition of conducting polymers has been achieved by means of atmospheric plasma treatments. The goal of this deposition development is providing active corrosion protection, nevertheless other applications such as antistatic layers can be targeted.



Part of the surface treatment platform

David Duday (CRP Gabriel Lippmann) further explains: "We already improved the resistance to corrosion and wear of different materials. The cleaning of surfaces by atmospheric plasma is working for some organic contaminants. These good results are obtained with low cost and environmentally friendly methods." The industrial challenge is currently to improve the layer properties while increasing the deposition rate to achieve industrial requirements for industrialisation.

On the one hand, scientific articles and oral presentations at conferences have been done in order to disseminate findings within the scientific community. Other than this, the project has also been of interest to an important number of industrial partners associated to the project.

"Many industrial developments are expected", explains David Ruch, "and industrial partners show high interest in utilising the pre-industrial prototype for future R&D projects". Many innovative plasma based developments are possible and the scope of potential applications is wide. David Duday explains: "Several new Luxembourgish industrial partners are ready to start surface treatments studies with us only two years after the beginning of the TRASU project". The TRASU project has "triggered a lot of new ideas to investigate for very exciting applications" David Ruch concludes.

for the FNR,
Morgan Meyer

SECOM Programme

**Security and Efficiency of New Practices in e-Commerce
for all Socio-economic Actors**

Duration: 2000-2008

Total Budget: EUR 7,500,000

1st Call in 2001: 5 Projects Selected

2nd Call in 2004: 4 Projects Selected

3rd Call in 2005: 2 Projects Selected

The SECOM programme's objective is the competitiveness of the Luxembourg economy in the field of e-commerce. It aims at developing a knowledgeable demand and an effective offer correspondent to the needs of the new economy.

This requires the mastery of the context of electronic commerce and cooperation, with a global quality approach that must integrate the solution of two problems, requiring joint efforts in R&D:

- security issues, aiming at the confidentiality, the availability and the integrity of electronic exchange systems,
- cooperation issues, aiming at the specification and the conception of the legal, organisational and software regulations linked to the implementation of virtual platforms that regroup several economic actors cooperating by electronic devices.

In order to better master the new contexts of electronic cooperation, the SECOM programme is developing an integrated research on the safety of electronic exchange and on the efficiency of new organisational and software models for electronic cooperation. The application of these research results will be particularly confronted with the realities of the service and SME sectors, bearing a strong potential for the production of goods and services in Luxembourg, however without excluding other sectors that also have a proven impact on the information society.

Ongoing SECOM Projects:

Project Code	Title	Contact	Coordinating Institution(s)	Contracting Partner(s)	Starting Date	Closing Date	FNR Contribution (in EUR)
FNR/01/01/05	Creation of an NICT System Facilitating the Electronic Business of Virtual Organisations (SICOV)	Fernand Feltz	CRP Gabriel Lippmann	CEPS/Instead	01.11.2001	31.10.2007	1,512,150
FNR/01/01/07	EFFICIENT: e-Business Framework for an Efficient Capture and Implementation of End-to-End Transactions	Sophie Ramel/ Eric Dubois	CRP Henri Tudor	University of Luxembourg/ CRP Gabriel Lippmann	01.11.2001	30.04.2007	1,499,978
FNR/04/01/02	RESIST: Towards a Secured, Efficient Platform for the e-Commerce of Personalised Health Products	Nicolas Guelfi	University of Luxembourg	CRP Henri Tudor	01.05.2006	31.10.2008	399,147
FNR/04/01/03	Security Identity Management (SIM)	Frédéric Girard/ Eric Dubois	CRP Henri Tudor		01.08.2005	31.01.2007	540,053
FNR/04/01/05	Techniques for Secure Grid and Ad-hoc Networks (TeSeGrAd)	Franck Leprévost	University of Luxembourg		01.06.2005	31.12.2007	151,378
FNR/04/01/06	Monitoring of New Forms of Electronic Cooperation via Graphical Tools for Operation Analysis (SUGAR)	Benoît Otjacques	CRP Gabriel Lippmann		01.09.2005	30.09.2007	310,968
FNR/05/01/03	Incremental Decision Support System for land Operational Risk Analysis within Evolving Organisations and IT Systems (RiskDESANA)	André Riffaut	CRP Henri Tudor		01.10.2006	31.03.2008	142,406
FNR/05/01/04	Cryptography and Security Management for e-Commerce (CRYPTOCOM)	Jean-Sébastien Coron	University of Luxembourg		01.07.2006	31.12.2008	197,764
TOTAL:							4,753,844

Finished SECOM Projects:

Project Code	Title	Contact	Coordinating Institution(s)	Contracting Partner(s)	Starting Date	Closing Date	FNR Contribution (in EUR)
FNR/01/01/01	Legal Security for e-Commerce	André Prüm	University of Luxembourg		15.10.2002	31.12.2005	782,840
FNR/01/01/06	Cryptology & Security Initiative (CSI)	Jean-Claude Asselborn	University of Luxembourg	CRP Gabriel Lippmann	01.10.2001	30.09.2006	699,529
FNR/01/01/09	Access SME: Secure e-Commerce for SMEs	Bernard Di Renzo	CRP Henri Tudor	University of Luxembourg	01.11.2001	31.12.2005	1,000,000
TOTAL:							2,482,369

NANO Programme

New Materials and Nanotechnnology

Duration: 2000-2008

Total Budget: EUR 6,700,000

1st Call in 2001: 3 Projects Selected

2nd Call in 2005: 3 Projects Selected

The NANO programme aims at creating a European Centre specialised in the characterisation of materials on the nanometre scale. The characterisation of a material (plastic, metal, glass, and biological tissue or cell) can be analytical, morphological or functional.

In order to reach the nanometre resolution necessary to the development or the study of these new materials, it is necessary:

- to have available a series of scientific devices developed very recently by a few manufacturers (Spectrometers of Secondary Ion Mass devices, under development notably for Harvard Medical School or NASA), devices that analyse the nanomechanical properties of surfaces, methods compatible with measurements on individual cells like bio-impedance;
- to optimise/to modify these devices according to the fields of application and materials to be analysed;
- to develop new analysis technologies.

These techniques are very recent and widely stem from European fundamental research. Numerous manufacturers and scientists look forward to the day when they will be able to apply these new analysis techniques to their products.

Ongoing NANO Projects:

Project Code	Title	Contact	Coordinating Institution(s)	Contracting Partner(s)	Starting Date	Closing Date	FNR Contribution (in EUR)
FNR/01/02/01a	Analysis of Biological Tissues with Nano/SIMS	Claude P. Muller	National Health Laboratory	CRP Gabriel Lippmann	01.01.2003	31.12.2008	1,040,000
FNR/01/02/01b	Analysis of Environmental Samples at Nanometre Scale	Henri-Noël Migeon/Lucien Hoffmann	CRP Gabriel Lippmann		01.10.2002	31.12.2008	806,578
FNR/01/02/02	European Centre Specialised in the Characterisation of Materials at Nanometre Scale	Henri-Noël Migeon	CRP Gabriel Lippmann		16.07.2001	30.06.2008	4,000,000
FNR/05/02/01	Viscous Effects Investigated by Applied Numerics and Experimental Nanoindentation (VEIANEN)	Gaston Rauchs	CRP Henri Tudor		01.07.2006	30.06.2008	250,000
FNR/05/02/05	Negative Ion Sources (NIS)	Tom Wirtz	CRP Gabriel Lippmann		01.04.2006	30.09.2008	260,000
FNR/05/02/07	Application of SIMS Nano-analysis to the Development of New High-Strength Steels (SIMSSTEEL)	Henri-Noël Migeon/ Nathalie Valle	CRP Gabriel Lippmann		01.04.2006	30.09.2008	165,000
TOTAL:							6,521,578

EAU Programme

Sustainable Management of Water Resources

Duration: 2000-2007

Total Budget: EUR 5,000,000

1st Call in 2001: 8 Projects Selected

2nd Call in 2005: 1 Projects Selected

Water, a natural resource essential to life, has become a highly coveted economic good and its management constitutes a major global problem. Moreover, water technologies represent a growing market for economic activity and employment.

The programme's general objective is to establish a pool of excellence in the field of water in Luxembourg, capable of grasping the complex mechanisms of the natural water cycle, of evaluating the means to protect water resources and water quality, of developing the most appropriate and the least expensive innovative technologies for control and water purification, and of fighting against water wasting.

The present research, development and innovation programme presents five priority areas:

- quality of surface waters and aquatic ecosystems,
- hydrological functioning of rivers,
- protection of ground water,
- advanced technologies for water management,
- socio-economic aspects of water resource management, in view of a sustainable development.

Ongoing EAU Projects:

Project Code	Title	Contact	Coordinating Institution(s)	Contracting Partner(s)	Starting Date	Closing Date	FNR Contribution (in EUR)
FNR/01/03/07	Modelling of a Sewage Network: Contribution to the Management of Pollution Risks at the Haute-Sûre Drinking Water Reservoir (RESEAU SURE)	Emmanuel Henry/ Kai Klepiszewski	CRP Henri Tudor		01.01.2002	31.12.2007	920,235
FNR/01/03/08	Material Flows in the Alzette River Catchment: Impacts of Contaminants on the Water Resources' Quality (FLUXALZETTE)	Tom Gallé	CRP Henri Tudor		01.02.2002	31.01.2007	500,000
FNR/05/03/01	Integration of Scientific Knowledge on Water Resources in Luxembourg in View of the Formulation of a Sustainable Water Management Policy (INEAU)	Lucien Hoffmann/ Paul Schosseler	CRP Gabriel Lippmann/ CRP Henri Tudor	University of Luxembourg	01.07.2007	31.12.2007	195,000
TOTAL:							1,615,235

Finished EAU Projects:

Project Code	Title	Contact	Coordinating Institution(s)	Contracting Partner(s)	Starting Date	Closing Date	FNR Contribution (in EUR)
FNR/01/03/01	Diagnosis of Lacustrine Ecosystems by Analysis of the Biodiversity and the Functioning of the Microbial Loop (DIADECOL)	Isabelle Thys/ Henri-Michel Cauchie	CRP Gabriel Lippmann		01.01.2002	30.6.2005	648,426
FNR/01/03/02	Study of the Water Cycle Components in the Attert River Basin (CYCLEAU)	Laurent Pfister	CRP Gabriel Lippmann	University of Luxembourg	01.01.2002	31.12.2004	634,847
FNR/01/03/03	Development of a Predictive Model of Fauna and Flora to Evaluate the Ecological State of Luxembourg's Rivers (MODELECOTOX)	Alain Dohet	CRP Gabriel Lippmann		01.04.2002	31.03.2005	748,188
FNR/01/03/04	Hydro-chemical Characterisation of Ground Waters in Luxembourg (GEAUSOUT)	Robert Maquil	Service géologique, Administration des Ponts et Chaussées	Administration de la Gestion de l'Eau/ University of Luxembourg	01.08.2002	29.02.2004	57,760
FNR/01/03/05	New Concepts and Innovative Technologies for a Sustainable Management of the Urban Water Cycle (CONCEPT)	Paul Schosseler	CRP Henri Tudor		01.03.2002	28.02.2006	382,318
FNR/01/03/06	Application of Modelling/ Simulation Tools and Substance Flow Analysis to the Moving Bed Biofilm Technology: Scientific Study of the Implementation of a New Wastewater Treatment Technique in Luxembourg (LITFLUID)	Mario Plattes	CRP Henri Tudor	CRP Gabriel Lippmann	01.01.2002	30.06.2006	565,168
TOTAL:							3,036,707

BIOSAN Programme

Biotechnology and Health

Duration: 2000-2011

Total Budget: EUR 8,000,000

1st Call in 2001: 7 Projects Selected

2nd Call Planned in 2007

The most frequent causes of mortality in the developed countries stem from cardio- and cerebrovascular diseases and from cancer. Statistical studies, conducted by the Luxembourg Health Ministry on the primary causes of mortality, confirm these international observations for Luxembourg. Thus, a very significant proportion of the active population is concerned by these diseases, and the observed morbidity or even early mortality entails important repercussions on the socio-economic level. Consequently, on the level of public health, biomedical research aiming at improving the prevention, the diagnosis and the therapy of these diseases remains an absolute priority.

The "Biotechnology and Health Programme" is structured around three main axes: cancer, cardio- and cerebrovascular diseases and immunology intervention. Its objective is to contribute to the qualitative improvement of the prevention, the detection and the treatment of both cancer and cardio- and cerebrovascular diseases, as well as to develop new strategies for the specific modulation of the immune system. Thereby biomedical research in Luxembourg, on the fundamental and clinical level as well as in the field of new biotechnologies in support of the health system, will be reinforced, thus increasing the competitiveness and mobilising the actors in this domain.

The programme presents six priority areas:

- cancer,
- cardio- and cerebrovascular diseases,
- new strategies for immunology intervention,
- development of expression libraries for the functional and topographical targeting of complex biological systems,
- epidemiology,
- intelligent data-processing environments in the field of health.

Ongoing BIOSAN Projects:

Projects Code	Title	Contact	Coordinating Institution(s)	Contracting Partner(s)	Starting Date	Closing Date	FNR Contribution (in EUR)
FNR/01/04/06	A Molecular Pathology Approach for Prostate Cancer Research: Application of the Laser Capture Micro-Dissection Technology (LMD)	Nelly Kieffer	University of Luxembourg	National Health Laboratory/ Centre Hospitalier E. Mayrisch	01.11.2001	30.03.2007	1,100,000
FNR/01/04/08	Luxembourg Heart Failure Project: Home-Monitoring of Patients with Severe Heart Failure	Daniel R. Wagner/ Norbert Rösch	Centre Hospitalier de Luxembourg/ CRP Henri Tudor	CRP Santé	01.01.2002	31.07.2007	720,000
FNR/01/04/09	Creation of a New Competence in Bio-Informatics and of a Technological Platform for Large-scale Genic Analysis (DNA Chips)	Evelyne Friederich	CRP Santé	CRP Henri Tudor/ National Health Laboratory	01.02.2002	31.01.2007	1,400,000
FNR/01/04/11	Vaccines against Low Molecular Antigens: Novel Strategies and Application (TOBAVAC)	Claude P. Muller	National Health Laboratory	University of Luxembourg	01.06.2002	31.12.2008	1,546,503
TOTAL:							4,766,503

Finished BIOSAN Projects:

Project Code	Title	Contact	Coordinating Institution(s)	Contracting Partner(s)	Starting Date	Closing Date	FNR Contribution (in EUR)
FNR/01/04/01	Vaccination with Apoptotic B Leukemic Cells Loaded Antigen Presenting Cells in Chronic Lymphoid Leukaemia	Guy Berchem	Centre Hospitalier de Luxembourg/ CRP Santé		01.03.2003	28.02.2006	243,257
FNR/01/04/03	Prevalence of Respiratory Symptoms, Bronchial Hyper-Reactivity and Atopy in Young Adults in Luxembourg	Romain Nati	Centre Hospitalier de Luxembourg	CRP Santé	01.04.2002	31.12.2005	184,927
FNR/01/04/04	Recombinant Modified Allergens for Immunotherapy Design and Testing by means of an In Vitro System	François Hentges	CRP Santé/ Centre Hospitalier de Luxembourg	National Health Laboratory	01.07.2002	31.12.2005	490,000
TOTAL:							918,184

PROVIE Programme

Medical Aspects of Ageing

Duration: 2004-2011

Total Budget: EUR 2,500,000

1st Call in 2003: 4 Projects Selected

2nd Call in 2006: 3 Projects Selected

The aim of this specific research area is to study the epidemiological, psychosocial and biological aspects of the neurodegenerative diseases of old age in Luxembourg and view them against the broader European canvas. In line with the EU research programme on “medical and social challenges posed by an ageing population and the disabilities associated with old age” (Official Journal of 15 November 2000), the approach taken is a holistic one, i.e. multidisciplinary and multidimensional. Priority will be given to projects which are multidisciplinary and interactive, involving players from different specialist backgrounds.

Objectives:

- to improve the skills of the biomedical community in Luxembourg and the transfer of knowledge concerning pathologies linked to ageing of the brain;
- to correlate medical, epidemiological, psychosocial and biological aspects;
- to improve the prevention of cerebrovascular accidents (strokes);
- to acquire innovative detection methods for neurodegenerative diseases, depression, sleep disorders and chronic pain in the elderly;
- to devise new specific treatment strategies for the above pathologies;
- to improve the care of the patients and their families;
- to develop new therapies.

The aim, in pursuing these objectives, is to attain an internationally recognised level of medical and scientific competence and to ensure that work done under this programme meshes with other national and international projects.

In January 2006, the Fund launched the 2nd Call of the PROVIE Programme. 3 projects were selected among 6 proposals submitted and are due to start in 2007.

Ongoing PROVIE Projects:

Project Code	Title	Contact	Coordinating Institution(s)	Contracting Partner(s)	Starting Date	Closing Date	FNR Contribution (in EUR)
FNR/03/04/02	Prospective Evaluation of Neuropsychological and Biological Characteristics of Mild Cognitive Impairment (MCI) and of Associated Sub-clinical Health Problems	Magali Perquin	CRP Santé	University of Luxembourg	01.07.2005	31.07.2007	350,000
FNR/03/04/07	Cognitive Neuropsychology of Ageing in Schizophrenia	Anne-Marie Schuller/ Charles Pull	Centre Hospitalier de Luxembourg/ CRP Santé		01.10.2004	30.09.2007	315,000
FNR/06/04/01	Microglial Activation and Differentiation: Analysis of Signal Transduction and Phenotype Acquisition	Paul Heuschling	University of Luxembourg	CRP Santé/ CRP Gabriel Lippmann	01.01.2007	31.12.2008	383,000
FNR/06/04/02	Functional Validation of a New Therapeutic Strategy to Prevent Neurodegeneration and Subsequent Cognitive Impairment in Mouse Models of Alzheimer's Disease	Simone P. Niclou	CRP Santé		01.02.2007	31.01.2009	239,000
FNR/06/04/05	Frequency and Evolution of Non Motor Signs in Early Parkinson's Disease: A Prospective Case-Control Study	Nico Diederich	Centre Hospitalier de Luxembourg	CRP Santé	01.01.2007	31.12.2008	249,000
TOTAL:							1,536,000

Finished PROVIE Projects:

Project Code	Title	Contact	Coordinating Institution(s)	Contracting Partner(s)	Starting Date	Closing Date	FNR Contribution (in EUR)
FNR/03/04/04	Microglial Activation and Differentiation: Balance between Proinflammatory Secretions and Beta-amyloid Clearance	Paul Heuschling	University of Luxembourg	CRP Santé/ National Health Laboratory	01.11.2004	31.10.2005	188,000
FNR/03/04/06	Aspirin Non-Responders in the Elderly Population with High Vascular Risk	René Metz	Centre Hospitalier de Luxembourg/ CRP Santé		01.12.2004	30.11.2005	75,000
TOTAL:							263,000

VIVRE Programme

Living tomorrow in Luxembourg

Duration: 2002-2009

Total Budget: EUR 12,000,000

1st Call in 2002: 14 Projects Selected

2nd Call in 2005/2006: 21 Projects Selected

The VIVRE programme defines several thematic priorities within the social sciences and humanities in order better to understand the challenges that the Luxembourg nation and society will have to face in the future:

- the evolution of the Luxembourg population, from a demographical, social, cultural and historical point of view,
- the development of human resources, the educational and training system,
- the era of information and communication and its consequences for society,
- the place of a small country like Luxembourg within the Greater Region, the European Union and a global world, with a specific focus on the perspectives of the Luxembourg financial market,
- the organisation of "space", town and country planning.

In December 2005, the Fund launched the 2nd Call of the VIVRE Programme. The objectives of the 2nd Call were among others the creation of new competences in the social sciences and humanities domain in Luxembourg and the development of international collaborations in order to guarantee the scientific quality of the projects. Additionally, the VIVRE programme aims to start or develop research on subjects that are of a strategic importance for the country. 21 projects were selected among 43 proposals and are due to start in 2007.

Ongoing VIVRE Projects:

Project Code	Title	Contact	Coordinating Institution(s)	Contracting Partner(s)	Starting Date	Closing Date	FNR Contribution (in EUR)
FNR/02/05/04	History, Memory and Identities	Michel Margue	University of Luxembourg		01.01.2003	30.04.2007	316,472
FNR/02/05/07	Impact of Psychological Factors on Socio-professional Integration and their Interaction with Social and Economic Domains	Claude Houssemand	University of Luxembourg		01.01.2004	30.06.2007	310,000
FNR/02/05/09	The Luxembourg School System Tomorrow	Romain Martin	University of Luxembourg		01.03.2004	30.09.2007	500,000
FNR/02/05/14	Application of Arts Therapies to some Crucial Problems of our Society	Lony Schiltz	CRP Santé	Centre hospitalier de Luxembourg/ University of Luxembourg	01.09.2004	31.08.2008	210,000
FNR/02/05/24	Cultural Heritage	Foni Le Brun-Ricalens	National Museum of History and Art		01.04.2003	31.03.2008	390,000
FNR/02/05/25	CLIMAT: Climate Change and Change in Land Use in Luxembourg	Laurent Pfister	CRP Gabriel Lippmann	University of Luxembourg	01.10.2003	30.06.2007	449,924
FNR/02/05/27	Analysis of the Literary Expression of the Luxembourg Society through the Creation of a Bio-bibliographical Database of Luxembourg's Authors	Germaine Goetzinger	National Centre for Literature	University of Luxembourg	01.11.2003	30.04.2007	220,000
TOTAL:							2,396,396

Finished VIVRE Projects:

Project Code	Title	Contact	Coordinating Institution(s)	Contracting Partner(s)	Starting Date	Closing Date	FNR Contribution (in EUR)
FNR/02/05/01	European Social Survey (ESS)	Monique Borsenberger	CEPS/NSTEAD		01.01.2003	31.03.2005	440,000
FNR/02/05/06	Linguistic Competences	Fernand Fehlen	University of Luxembourg		01.11.2003	31.12.2006	100,000
FNR/02/05/12	Multilingualism of Children up to 9 Years	Dominique Portante	University of Luxembourg		01.05.2003	31.12.2006	260,000
FNR/02/05/19	Living in the "Greater Region" of Luxembourg	Fernand Fehlen	University of Luxembourg	Fondation Forum Europa	01.04.2003	31.08.2005	120,000
FNR/02/05/20	The Future of the Luxembourg Financial Market	André Prüm	CRP Gabriel Lippmann		01.12.2003	30.09.2005	236,263
FNR/02/05/22	Key Areas for Biodiversity in Luxembourg	Guy Colling	National Museum of Natural History		01.09.2003	31.08.2006	250,000
FNR/02/05/26	Socio-economic Databases Online (SEDO)	Uwe Warner	CEPS/INSTEAD	CRP Gabriel Lippmann	01.03.2003	31.08.2005	250,000
TOTAL:							1,656,263

VIVRE projects that are due to start in 2007:

Project Code	Title	Contact	Coordinating Institution	FNR Contribution (in EUR)
FNR/VIVRE/06/03/01	LUX-ID - Kollektive Erfahrung, intergenerationale Erinnerung und Identitätskonstruktion in Luxemburg	Michel Margue	University of Luxembourg	500,000
FNR/VIVRE/06/40/02	METROLUX - Enjeux métropolitains et formes de gouvernance au Luxembourg et dans les territoires frontaliers	Christophe Sohn	CEPS/INSTEAD	235,000
FNR/VIVRE/06/35/03	MOBILLUX - Quelles mobilités demain au Luxembourg et dans son espace transfrontalier? Comprendre et simuler les interactions entre mobilités quotidienne et résidentielle	Philippe Gerber	CEPS/INSTEAD	80,000
FNR/VIVRE/06/36/04	MAPRISK - Mapping of hydrological risk in real-time flood forecasting and in floodplain management	Patrick Matgen/ Laurent Pfister	CRP Gabriel Lippmann	215,000
FNR/VIVRE/06/20/05	TIVIPOL - Technologies de l'Information pour accompagner le Vieillessement de la Population Luxembourgeoise	Benoît Otjacques	CRP Gabriel Lippmann	250,000
FNR/VIVRE/06/06/06	AVC - Vivre au Grand-Duché du Luxembourg après un Accident Vasculaire Cérébral: Retentissement familial et qualité de vie. Equité d'accès aux soins et aux ressources sociales	Michèle Baumann	University of Luxembourg	500,000
FNR/VIVRE/06/25/07	MIGRAPOL - Les réalités des politiques migratoires et leur perception par les populations concernées	Claudia Hartmann- Hirsch	CEPS/INSTEAD	470,000
FNR/VIVRE/06/15/08	MEDIM - Advances in the measurement of discrimination, inequality and mobility	Philippe Van Kerm	CEPS/INSTEAD	330,000
FNR/VIVRE/06/01/09	VALCOS - Valeurs et cohésions sociales	Monique Borsenberger	CEPS/INSTEAD	290,000
FNR/VIVRE/06/30/10	BEIBERTCOS - The impact of real and financial integration on asset price co-movement with application to Luxembourg	Michel Beine	University of Luxembourg	400,000
FNR/VIVRE/06/02/11	INTERGEN - Intergenerational relations in Luxembourg: Solidarity, ambivalence, conflict?	Dieter Ferring	University of Luxembourg	495,000
FNR/VIVRE/06/08/12	ESANDE - L'état de santé et ses déterminants: Une approche en termes d'inégalités sociales de santé	Anastase Tchicaya	CEPS/INSTEAD	325,000
FNR/VIVRE/06/14/13	BASICS - Compétences de base nécessaires à l'apprentissage tout au long de la vie	Claude Houssemand	University of Luxembourg	470,000
FNR/VIVRE/06/26/14	LUXMODEL - Vers un approfondissement du modèle luxembourgeois de relations professionnelles	Franz Clement	CEPS/INSTEAD	235,000
FNR/VIVRE/06/43/15	LexicoLux: Erschließung und Vernetzung lexikographischen Wissens über das Luxemburgische	Claudine Moulin	University of Luxembourg	420,000
FNR/VIVRE/06/10/16	TAO-QUAL - A quality control system for assessment processes by means of a collaborative internet-based assessment platform	Gilbert Busana	University of Luxembourg	300,000
FNR/VIVRE/06/31/17	PLAFILOI - Banques, marchés financiers et législations: interdépendances et mesures comparées des performances	André Prüm	University of Luxembourg	500,000
FNR/VIVRE/06/09/18	MAGRIP-R - The impact of socio-cognitive childhood characteristics on private and professional outcomes in later life: a follow-up over 40 years based on the Luxembourgish MAGRIP study from 1968	Romain Martin	University of Luxembourg	380,000
FNR/VIVRE/06/28/19	REDIS - Coherence of Social Transfer Policies and Microsimulation	Raymond Wagener/ Pierre Hausman	CEPS/INSTEAD	500,000
FNR/VIVRE/06/32/20	Perfilux - Performance of Financial Services in Luxembourg	Pierre-Armand Michel	University of Luxembourg	500,000
FNR/VIVRE/06/42/21	Luxatlas - Atlas digital multidisciplinaire, interactif et dynamique du Luxembourg et de la Grande Région	Michel Pauly	University of Luxembourg	500,000
			TOTAL:	7,895,000

TRASU Programme

Surface Treatment

Duration: 2003-2009

Total Budget: EUR 6,000,000

1st Call in 2003: 1 Project Selected

Research into the field of surface treatment is becoming more and more important for many industries in Luxembourg so that new materials can be developed and existing products improved. The research relates to the development of new types of treatment in order to improve the properties sought, such as adhesion, wear, hardness and better environmental protection. The research programme also includes characterisation of the surfaces before and after treatment in order to gain a better understanding of the mechanisms at atomic and molecular level, for example.

Because the field of surface treatment is extremely broad and the methods used very varied, each research project will have to involve the participation of a Luxembourg industrial partner.

Generally speaking, the actors are aware of the future scope of activities in the field and have a clear interest in it.

This is being reflected by:

- the creation of improved or new products,
- the appearance of new, so-called advanced products,
- improved qualities, and
- research into processes that create less pollution.

Following the first call for project proposals in 2003, two projects were submitted and later assessed by international experts. Many Luxembourg companies and national as well as international academic partners joined in. The Fund decided to merge these two projects into one, in order to better develop new competences.

The "Development of Innovative Surfaces by Means of Optimised Plasma Techniques and Technology Transfer to Industries" - project started in May 2005.

The project is managed under the responsibility of the CRP Gabriel Lippmann and the CRP Henri Tudor. The CRP Gabriel Lippmann focuses on fundamental research, whereas the CRP Henri Tudor concentrates more on applied research.

Ongoing TRASU Project:

Project Code	Title	Contact	Coordinating Institution(s)	Industrial Partner(s)	Academic Partners	Starting Date	Closing Date	FNR Contribution
FNR/03/06/03	Development of Innovative Surfaces by means of Optimised Plasma Techniques and Technology Transfer to Industries	Henri-Noël Migeon/ David Ruch	CRP Gabriel Lippmann/ CRP Henri Tudor	Arcelor Dudelange, Arcelor Bettembourg, Balzers, Ceratizit, Ceodeux-Puretec, Circuit Foil, Ewald Giebel, Goodyear Technical Centre, Novelis	Facultés Universitaires Notre-Dame de la Paix, Belgium Flemish Institute for Technological Research, Belgium Fraunhofer, Germany Institut National Polytechnique de Lorraine, France Universität des Saarlandes, Germany Université Pierre et Marie Curie, France Université du Luxembourg Université Henry Poincaré Nancy I, France	01.05.2005	30.04.2009	6,000,000
TOTAL:								6,000,000

SECAL Programme

Food Safety

Duration: 2003-2010

Total Budget: EUR 7,500,000

1st Call in 2003: 6 Projects Selected

2nd Call Planned for 2007

Food safety has become a major public health issue, both with regard to the context of an increased life expectancy and the economic impact. In order to assess and control the risks connected to food safety, the improvement of scientific knowledge - concerning the analysis of contaminants throughout the “food chain”, human exposure to the various contaminants and their impact on human health - is now necessary.

The aim of this programme is to develop a body of scientific expertise and resources in Luxembourg in matters of food safety, serving all the actors involved, such that the base of scientific knowledge can be widened and new methods of surveillance and risk avoidance can be developed. Priority will be given to the following areas of research, ranging from risk assessment to the study of prevention strategies:

- traceability of foods (including genetically modified organisms - GMOs);
- chemical and microbiological quality of foods (including drinking water);
- impact on human health and consumer protection.

Ongoing SECAL Projects:

Project Code	Title	Contact	Coordinating Institution(s)	Contracting Partner(s)	Starting Date	Closing Date	FNR Contribution (in EUR)
FNR/03/07/01	Mobile Expert & Networking System for Systematic Analysis of Nutrition-based Allergies (MENSANA)	Norbert Rösch	CRP Henri Tudor	Centre Hospitalier de Luxembourg	01.10.2004	31.07.2009	800,000
FNR/03/07/03	Novel Protein- and DNA-based Methods for Tracing of Food Components	André Steinmetz	CRP Santé	National Health Laboratory	01.11.2004	31.10.2007	1,199,980
FNR/03/07/05	Development of New Genoproteomic Diagnostic Tools for the Toxicological Assessment of Endocrine Disruptors in Food (ENDIF)	Lucien Hoffmann	CRP Gabriel Lippmann	National Health Laboratory	01.02.2006	31.01.2009	983,437
FNR/03/07/07	Knowledge and Know-How Acquisition for an Efficient Risk Assessment of Waterborne Pathogens in the Drinking Water of Luxembourg (KAWA)	Henry-Michel Cauchie	CRP Gabriel Lippmann	Administration de la Gestion de l'Eau	01.07.2005	30.06.2008	848,716
FNR/03/07/08	Molecular Epidemiology of Zoonotic Bacteria in the Food Chain in Luxembourg (EPIFOOD)	Joël Mossong/ François Schneider	National Health Laboratory		01.07.2005	31.12.2008	849,400
TOTAL:							4,681,533

Finished SECAL Projects:

Project Code	Title	Contact	Coordinating Institution(s)	Contracting Partner(s)	Starting Date	Closing Date	FNR Contribution (in EUR)
FNR/03/07/02	The Development of a Drinking Water Contamination Risk Assessment and Management Strategy in Luxembourg – An Interdisciplinary Approach (CHEMRISK)	Paul Schosseler	CRP Henri Tudor	University of Luxembourg/ National Health Laboratory/ Administration de la Gestion de l'Eau	01.05.2005	15.10.2006	497,133
TOTAL:							497,133

INTER Programme

Promotion of International Cooperation

Duration: 2006-2011

Total Budget: EUR 6,000,000

In December 2005, the Government Council approved a new research programme for the Fund entitled “Promotion of international cooperation (INTER)”. The INTER programme was the result of recommendations made by the steering committees and the panel of experts held on 10 December 2004, and of the wish by researchers in Luxembourg to cooperate more closely with international researchers.

Players involved in public research and international experts recognise the need for international cooperation, particularly with a view to giving research in Luxembourg a higher profile in other countries and to achieving a critical mass within research that cannot be sought if the research context is limited to Luxembourg.

As a result, the aims of the INTER programme are as follows:

- to promote international scientific cooperation;
- to create synergies between research centres within and outside Luxembourg;
- to achieve a critical mass in certain fields;
- to take a better approach to the resolution of certain transnational issues;
- to make research in Luxembourg more visible and more competitive.

In order to do this, the INTER programme does not involve participation in individual projects at international level, but solely participation in international programmes that are developed jointly with other research funds or councils outside Luxembourg, or in programmes already in place at international level in which the Fund may decide to participate.

Programme	Foreign Financing Institution	Luxembourg Participations			
		Title	Contact	Institution	FNR Contribution (in EUR)
Materials World Network, 2005 Call	National Science Foundation, United States	Design, growth and properties of Boron-based thin films for electronics and nanosized electronics	Tom Wirtz	CRP Gabriel Lippmann	256,000
EUROCORES Corisk	European Science Foundation	No project			
EUROCORES EuroCyano	European Science Foundation	No project			
EUROCORES ECRP 1 st Call	European Science Foundation	No project			
EUROCORES ECRP 2 nd Call	European Science Foundation	No project			
EUROCORES ECRP 3 rd Call	European Science Foundation	Call in preparation			
La Science pour un développement durable	Service fédéral public de programmation scientifique, Belgium	Mobilities and long term location choices in Belgium	Philippe Gerber	CEPS/Instead	110,456
		Towards a sustainable management of pond diversity at a landscape level	Henri-Michel Cauchie	CRP Gabriel Lippmann	118,510
ERA-Net MATERA 2006 Call	RANNIS, Iceland/ MHEST, Slovenia	Wear resistant ductile iron	Nathalie Valle	CRP Gabriel Lippmann	150,000
STEREO II, recherche en observation de la terre	Service fédéral public de programmation scientifique, Belgium	Inégration de la télédétection radar et de la modélisation hydrologique et hydraulique pour la gestion de l'eau de surface	Lucien Hoffmann	CRP Gabriel Lippmann	298,625
		Monitoring soil organic carbon in croplands using Imaging Spectroscopy	Lucien Hoffmann	CRP Gabriel Lippmann	22,174
		Utilisation conjointe des techniques terrestres et satellitaires comme outil d'évaluation du risque volcanique et de l'impact sur la santé dans la région de Goma (North Kivu, RDC)	Nicolas d'Oreye, Antoine Kies	National Museum of Natural History/ University of Luxembourg	85,300
Scientific cooperation agreement	Centre national de la recherche scientifique, France	Call open			
Materials World Network, 2006 Call	National Science Foundation, United States	One project undergoing evaluation			
Société et avenir	Service fédéral public de programmation scientifique, Belgium	Call open			
FLARE	ERA-Net ERA-AGE	Call in preparation			
				TOTAL:	1,041,065

ATTRACT Programme

Attract Researchers to Luxembourg: Opportunities for Outstanding Young Researchers in Luxembourg

Duration: 2006-2012

Total Budget: EUR 6,000,000

1st Call Planned for 2007

Deadline: 1 June 2007

The ATTRACT programme aims to build on the excellence, dynamism and creativity of research in Luxembourg by attracting young researchers with a high level of ability in science or technology and proven experience in a professional research context.

The programme is designed for researchers not yet established in Luxembourg; it offers them the opportunity to set up a research team within a public-sector research institution in Luxembourg that is willing to host them. Research proposals should therefore be submitted jointly by the candidate and the host institution. Host institutions will offer candidates the prospect of integration in the medium and possibly long term into their activities.

Projects submitted should be innovative and of high scientific quality and candidates must be able to show that they have gained a minimum of two and a maximum of eight years' professional experience since successful completion of doctoral studies. Projects selected under the ATTRACT programme have a lifespan of five years and the financial contribution by the Fund will be up to EUR 1,000,000.





International Cooperation

• INTER Programme - Promotion of International Cooperation

In order to reinforce and facilitate the cooperation between Luxembourg researchers and international scientists, the Fund has developed a new multi-annual research programme for the promotion of international cooperation (INTER). INTER's main utility is the added flexibility by which the Fund can support Luxembourg research in the priority domains of the Fund, and permit access to the various funding initiatives that present themselves in the European context and worldwide (for further details, see Chapter III of the present report).

• ESF - European Science Foundation

The European Science Foundation (ESF) is an umbrella organisation for national funding organisations and research institutions, founded in 1974, with the objective of reinforcing scientific co-operation in Europe. The ESF is primarily a platform for science policy-making organisations but also offers researchers a whole series of funding schemes, which support cross-border research co-operation, networking and the expansion of infrastructures. Since 1 January 2002, the Fund has been a member of the European Science Foundation (ESF). The reason for joining the ESF was to facilitate and promote contacts and cooperation by Luxembourg researchers with their colleagues abroad.



National Representatives

- Standing Committee for Physical and Engineering Sciences:
2005-2007: **Henri-Noël Migeon,**
CRP Gabriel Lippmann
- European Medical Research Councils:
2005-2007: **Charles Pull,**
Centre Hospitalier de Luxembourg
- Life, Environmental and Earth Sciences:
2005-2007: **Olivier Francis, European Centre of Geodynamics and Seismology**
University of Luxembourg
- Standing Committee for the Humanities:
From 2006 on: **Claudine Moulin,**
University of Luxembourg
- Standing Committee for the Social Sciences:
2005-2007: **Georges Steffgen,**
University of Luxembourg
- Governing Council:
2005-2007: **Raymond Bausch,**
National Research Fund
- Financial and Audit Committee:
2005-2006: **Raymond Bausch,**
National Research Fund
From 2007 on: **Romain Henrion,**
National Research Fund

Research Networking Programmes

Luxembourg researchers participate in the following ESF Research Networking Programmes:

Frontiers of Functional Genomics

2006-2010: **Evelyne Friederich, CRP Santé**

This new ESF programme addresses advances in functional genomics technologies, the integration of data through systems biology approaches, applications in biomedicine and the environment, and implications for society at large. Through various activity instruments, the programme will pursue the goal of promoting connections between:

- scientists involved in cutting edge developments in new functional genomics technologies, in order to strengthen European science,

- new technologies by encouraging innovative multi-disciplinary and integrative approaches,
- academic groups and industry in order to optimise the economic impact of European research,
- a large panel of international organisations, European 6th Framework Projects and Networks, which include functional genomics in their remit,
- the scientific community involved in functional genomics research and the general public.

European Polar Board

Participation since 2003:

Antoine Kies, University of Luxembourg

Established in 1995, the European Polar Board is the ESF's committee of experts in the field of research in the polar regions. It is an interdisciplinary programme bringing together highly diverse disciplines, including the earth sciences and environmental sciences.

Quantitative Methods in the Social Sciences

2003-2007: Gaston Schaber, CEPS/INSTEAD

This programme aims to strengthen competence in Europe in the analysis of complex databases which are necessary to provide information to those responsible at political level and, in particular, to encourage the development of European networks of young researchers.

Representations of the Past:

The Writing of National Histories in Europe

2004-2007: Michel Margue, University of Luxembourg

This programme involves cooperation by more than 60 leading scholars from more than 20 European countries. Its agenda will be implemented by four teams which will investigate:

1. the institutions, networks and communities which produced national histories and were themselves influenced by the idea of national history,
2. the construction, erosion and reconstruction of national histories in their relationship with competing perceptions structured by the social divides in a society (such as class, race/ethnicity, religion and gender),
3. national histories and their relationship with regional, European and world histories, and
4. national histories in their spatial relationships and mutual interdependency with other national histories.

EUROQUAL: Qualitative Research in the Social Sciences in Europe

2006-2010: Helmut Willems, University of Luxembourg

ESF supports a four-year programme on qualitative methods in the social sciences in Europe in order to:

- a) advance knowledge of the methods of analysing increasingly complex social science data;
- b) increase the human capacity to analyse such data; and
- c) advance comparative qualitative social science. A series of integrated workshops and seminars will provide training for junior social scientists in the latest methods of analysis of social scientific data and also provide the opportunity for senior researchers working through Europe at the cutting edge of analysis and methodological innovation to share their research.

Harmonic and Complex Analysis and its Applications

From 2007 on: Martin Schlichenmaier, University of Luxembourg

European Network of Self and Social Identity

From 2007 on: Lony Schiltz, CRP Santé

Mapping the Detailed Composition of Surface-Adsorbed Protein Layers on Biomaterials and Nanoparticles

From 2007 on: Jean-Nicolas Audinot, CRP Gabriel Lippmann

Magnetic and Electromagnetic Fields Effects on Materials Behaviour During Processing

From 2007 on: Salim Belouettar, CRP Henri Tudor

EUROCORES (European Science Foundation Collaborative Research Programme)

The EUROCORES programme provides support for research projects involving a number of international partners. Projects are subject to an international evaluation administered by the ESF, while financing is provided by the participating organisations at national level. In 2006, the National Research Fund has increased its participation in EUROCORES programmes initiated by the ESF via its multi-annual programme 'Promotion of International Cooperation' (INTER).

A call for project proposals was issued in the EUROCORES programme ECRP (European collaborative research projects in the Social Sciences) in 2006.

The ECRP Programme is designed to advance international research collaboration in the social sciences by encouraging European academic networking and pooling of research expertise. The programme offers the opportunity to conduct problem-driven multilateral projects on any topic within the social sciences that demonstrate an international framework for research collaboration. Projects need not be exclusively European in their topic focus. Unfortunately, no project proposal with participation of a Luxembourg research institution was submitted to the ESF.

Further information can be found on www.esf.org

• ERCIM – European Research Consortium in Informatics and Mathematics

ERCIM is a consortium bringing together the research institutes of 18 European countries in the field of information technology and applied mathematics.

ERCIM aims to:

- strengthen the European Community in the fields of information and communication science and technology and applied mathematics;
- identify emerging research fields in Europe;
- assist its partners in their relations with the European Community and other international bodies;

- foster the engagement and international cooperation with leading research institutions of Europe in the corresponding areas for research;
- promote synergies between complementary programmes; and
- bring together resources and expertise in order to strengthen Europe's position in research and innovation transfer.

The main decision-making bodies of ERCIM are the Board of Directors and the Executive Committee, which coordinate the consortium's activities and act as intermediaries between the national research communities and ERCIM.



Luxembourg representatives in the committees and working groups of ERCIM in 2006 are:

- Board of Directors:
2002-2006: Eric Dubois, CRP Henri Tudor
- Executive Committee:
2002-2006: Leon van der Torre,
University of Luxembourg
- Editorial Board:
2002-2006: Patrik Hitzelberger,
CRP Gabriel Lippmann
- Working Group on Electronic Commerce:
2002-2006: Benoît Otjacques,
CRP Gabriel Lippmann
2002-2006: Djamel Khadraoui, CRP Henri Tudor
- Working Group on Security and Trust:
2005-2006: Nicolas Guelfi,
University of Luxembourg
2005-2006: Djamel Khadraoui, CRP Henri Tudor
2005-2006: Leon van der Torre,
University of Luxembourg
- Task Force of European Liaison Officers:
2002-2006: Béatrix Barafort, CRP Henri Tudor
- Working Group on Applications of Numerical
Mathematics in Science:
2002-2006: Salim Belouettar, CRP Henri Tudor

- Working Group on Informatics and Mathematics Applied to Interventional Medicine:
2004-2006: Pierre Plumer, CRP Henri Tudor
- Working Group on Dependable Software - Intensive Systems:
2004-2006: Reza Razavi, University of Luxembourg
2002-2006: Steffen Rothkugel, University of Luxembourg
- Working Group on Soft Computing:
2004-2006: Pascal Bouvry, University of Luxembourg
- Working Group on Software Evolution:
2004-2006: Nicolas Guelfi, University of Luxembourg
- Working Group on Rapid Integration of Software Engineering Techniques:
2004-2006: Nicolas Guelfi, University of Luxembourg
2005-2006: Vincent Rosener, CRP Henri Tudor
- Working Group on Smart Environments and Systems for Ambient Intelligence:
2005-2006: Nicolas Guelfi, University of Luxembourg
- Task Force on ERCIM Fellowships/Bursaries:
2002-2006: Ulrike Kohl, National Research Fund

ERCIM Fellowships

ERCIM fellowships are intended to attract young researchers of post-doctoral level from anywhere in the world to work on a research problem at two research centres in the ERCIM network. Applicants wishing to benefit from these fellowships send their applications at the indicated deadlines (2 per year) to ERCIM using a form which can be downloaded from www.ercim.org. ERCIM then draws up a list of all applications submitted, together with applicants' CVs and project proposals, which is then forwarded to ERCIM's partner institutions, including the National Research Fund.

In 2006, the following candidates were selected for a fellowship financed by the Fund:

- Baptiste Alcalde (of French nationality), for a twelve-month period at the University of Luxembourg (contact: Prof. Sjouke Mauw)
- Manuel Maarek (of French nationality), for a twelve-month period at the CRP Henri Tudor (contact: Dr Thibaud Latour)

Further information can be found on www.ercim.org

• COST – European Cooperation in the Field of Scientific and Technical Research

COST is a European cooperation measure in the field of scientific and technical research, established in 1971 at the initiative of France. COST coordinates the research activity of 34 countries in the geographical area of Europe in a very wide range of fields.

Projects presented at the initiative of researchers involve between five and 25 countries (15 on average). Financing is restricted to coordination expenses (meetings between teams, publication expenses, short travel assignments of young researchers, etc.); the cost of the research itself is borne by each country under national programmes.

National COST coordination is provided by the National Research Fund together with the Ministry of Research.

National representatives:

- National coordination:
Josiane Entringer, Ministry of Culture, Higher Education and Research
Carlo Duprel, National Research Fund
- Domain Committee on Biomedicine and Molecular Biosciences:
Evelyne Friederich, CRP Santé, University of Luxembourg
- Domain Committee on Earth System Science and Environmental Management:
Lucien Hoffmann, CRP Gabriel Lippmann
- Domain Committee on Food and Agriculture:
Jean François Hausman, CRP Gabriel Lippmann

- Domain Committee on Forests, their Products and Services:
Frank Wolter, Administration des Eaux et Forêts
- Domain Committee on Individuals, Societies, Cultures and Health:
Dieter Ferring, University of Luxembourg
- Domain Committee on ICT:
Leon van der Torre, University of Luxembourg
- Domain Committee on Materials, Physical and Nanosciences:
David Ruch, CRP Henri Tudor

Further information can be found on www.cost.esf.org

• ERA-NET – EUROPEAN RESEARCH AREA NETWORKS

In 2006, the National Research Fund continued to cooperate in three ERA-NET networks financed by the European Union's Sixth Framework Programme in order to strengthen the European Research Area by bringing together organisers of research programmes in various European countries.

ERA-NET MATERA



Sixteen organisations from 14 countries financing public and private research have been meeting since 1 February 2005 (until 2009), in connection with the ERA-NET MATERA Coordinated Action (financed by the Sixth Framework Programme), to prepare joint calls in the field of materials science and engineering. The National Research Fund is Luxembourg's contract partner.

Other organisations and countries participating are as follows: Tekes (Finland, coordinator); AKA (Finland); IWT (Flanders, Belgium); DGTRE (Wallonia, Belgium); MIWFT (Germany, North Rhine-Westphalia); RANNIS (Iceland); EI (Ireland) MIUR (Italy); LCS (Lithuania); RCN (Norway); WUT (Poland); MHEST (Slovenia); KTI/CTI (Switzerland); Invest NI (Great Britain, Northern Ireland); and MOST (Israel).

In 2006, a first MATERA call was launched. The project evaluation was carried out at national/regional level and the final project selection was made jointly by the partners.

One project with Luxembourg participation was retained for financing:

Project: Wear resistant ductile iron

Coordinator: RANNIS (Iceland)

Partners: CRP Gabriel Lippmann (Luxembourg), MHEST (Slovenia)

The funding of the Luxembourg participant is provided by the National Research Fund through its INTER programme. A second MATERA call is planned for February 2007.

Further information can be found on www.matera.fi

ERA-NET NEURON

The purpose of ERA-NET NEURON is to set up a network linking national and regional European research projects in the field of diseases connected with the neurosciences. Neurological disorders affect over a billion persons throughout the world.

The priority fields of the research programmes supported by the institutions involved in this project are neurological degeneration and neural repair.

Twelve partner institutions, among which the National Research Fund, drew up a proposal for a future funding of the ERA-NET NEURON, which was accepted in the call of the Sixth Framework Programme. The ERA-NET NEURON officially starts in 2007. Partners include: Deutsches Zentrum für Luft- und Raumfahrt e.V., PT-DLR, Germany; National Research Fund, FNR, Luxembourg; Ministry of Scientific Research and Information Technology, MSRIT, Poland; Israel Ministry of Health, CSO-MOH, Israel; Austrian Science Fund, FWF, Austria; Institut national de la santé et de la recherche médicale, INSERM, France; Academy of Science, AKA, Finland; Swedish Research Council, SRC, Sweden; Medical Research Council, MRC, United Kingdom; Ministry of Education and Research, MER, Romania; Centre National de la Recherche Scientifique, CNRS, France; and Ministry of Health, Italy.

ERA-NET ERA-AGE

The ERA-AGE network (2004-2009) is coordinated by Professor Alan Walker of the University of Sheffield and includes 12 European partners:

University of Sheffield (UK); Austrian Academy of Sciences (Austria); Finnish Academy of Sciences (Finland); CNAV/Direction des recherches sur le vieillissement (France); National Research Fund (Luxembourg); Netherlands Organisation for Health Research and Development (Netherlands); Research Council of Norway (Norway); Executive Agency for Higher Education and Research Funding (Romania); Swedish Council for Working Life and Social Research (Sweden); Projektträger Deutsches Zentrum für Luft- und Raumfahrt e.V. (Germany); Medical Research Administration/Ministry of Health (Israel); and Istituto Superiore di Sanità (Italy).



In 2006, the ERA-AGE partners launched a first common call entitled "FLARE: Future Leaders of Ageing Research in Europe". Previous to the call, a "Memorandum of Understanding" was signed defining the call modalities. The FLARE call offers post-docs the possibility to obtain a three-year financial support for the realisation of a research project within or in collaboration with a research group on ageing. FLARE projects must foresee a mobility period of six to twelve months. Furthermore, call participants will contribute to the organisation of common activities, such as a summer school that will take place in 2008, once the research projects have started.

In the framework of the FLARE call, the National Research Fund will support a maximum of two projects. Following the FLARE call, the ERA-AGE partners will prepare a more substantial call in 2007 with the aim to supporting multilateral projects between several partners within the network. An additional financing of the network will be applied for in the framework of the FP7 "ERA-NET Plus" calls of the European Commission.

Further information can be found on www.era-agegroup.shef.ac.uk

• Annual Meeting of the Advisory Councils for Research and Technology

The National Research Fund regularly takes part in the annual meetings of the Presidents and Secretaries General of the Advisory Councils for Research and Technology of the European Union member states. During these meetings, representatives of the member states present the activities of their councils and discuss measures to be taken in order to reinforce the link between research and the industry.

• European Network on Research Careers (ENRC)

On 8 November 2006, the National Research Fund took part in the meeting of the European Network on Research Careers (ENRC). The ENRC is coordinated by Dr Beate Scholz of the Deutsche Forschungsgemeinschaft, and once or twice a year it brings together representatives of foundations or ministries from some 20 European countries to exchange information on programmes or policies promoting scientific careers (e.g. doctoral or post-doctoral grants).

• International Council of Scientific Unions (ICSU)

The National Research Fund regularly takes part in the meetings of the European members of the ICSU to discuss and coordinate European activities within the ICSU. The Fund's membership in the ICSU facilitates international cooperation with non-European countries.

Further information can be found on www.icsu.org





Accompanying Measures

In order to supplement research financing as such, the National Research Fund also applies the following accompanying measures (Mesures d'accompagnement – MA) in order to support the general framework of scientific research in Luxembourg.

In 2006, the Fund selected a total of 144 activities from 165 proposals submitted. It should be noted that activities selected in 2006 may take place in 2006 or be extended over subsequent years. Activities selected in preceding years are no longer mentioned in this report.

MA1: Various measures to promote scientific culture, international scientific cooperation or national coordination in the research field

MA1 measures are chiefly intended to stimulate scientific interest among young people through experimentation, but also to interest a wider audience in the sciences by showing them the importance of scientific research. These measures also aim to support innovative and original activities promoting research or supporting cooperation between different players in the R&D sector, whether at national level or, in specific cases, international level.

MA2: Active participation of novice researchers in scientific conferences

Through MA2, the Fund supports scientific presentations at international conferences by young researchers undertaking doctoral studies for up to four years after defending their theses by financing their travel expenses and registration fees. This measure is intended to encourage researchers to present the results of their research abroad and thereby to establish scientific contacts that may be important in their future careers.

MA3: Organisation of scientific conferences in Luxembourg

MA3 is intended to co-finance national or international scientific conferences organised in Luxembourg by public research bodies or associations. The conferences must be organised by a scientific committee. In the same category, the Fund also finances public events arranged by interested parties from Luxembourg or abroad to present the state of the art in a particular scientific field to a specialist or non-specialist audience.

MA4: a) Publication of doctoral theses

MA4 is subdivided into two parts. The first part (MA4a) covers the financing or co-financing of the printing or publication of a doctoral thesis. The maximum amount of the grant from the Fund is EUR 3,000.

MA4: b) Publication of scientific works

In parallel with the financing of doctoral theses, under MA4b the Fund also co-finances the publication of scientific works up to a maximum of EUR 3,000.

MA5: Preparation of European research projects

MA5 makes it possible to refund the costs of preparing European research projects incurred by Luxembourg public bodies which coordinate this kind of project.

MA6: Mobility of researchers

MA6 aims to encourage international collaboration by attracting foreign researchers to institutions in Luxembourg or enabling Luxembourg researchers to spend periods at research bodies abroad. Applications must relate to a research project to be executed jointly.

MA7: Training in research project management

MA7 encourages participation in a seminar or a conference in connection with research project management (for example seminars organised by EARMA - www.earma.org - or similar seminars organised at a national or international level) or with the management of intellectual property in the R&D sector.

For measures MA1, MA3 and MA6, the deadlines for the receipt of proposals are set annually at 1 April and 1 October. For measures MA2, MA4, MA5 and MA7, the deadline is set in relation to the launch date of the activity.

A new measure MA8 - National Research Coordination will be implemented in 2007.

SF: Science Festival

Every two years the Fund supports the Science Festival, organised by the National Museum of Natural History (www.science-festival.lu). The Science Festival hosts a variety of activities (workshops, talks, exhibitions, shows, etc.) aimed at all age groups.

Overview of Activities in 2006

Code	Title of measure	Number of proposals submitted	Number of proposals accepted	Total FNR* contributions in 2006 (EUR)
MA1	Various measures for promoting R&D	27	19	167,636.00
MA2	Active participation of novice researchers in conferences	50	46	49,357.36
MA3	Organisation of scientific conferences in Luxembourg	42	38	365,581.00
MA4	Scientific publications	25	24	50,187.36
MA5	Preparation of EU projects	1	1	10,000.00
MA6	Mobility of researchers	18	14	143,220.00
MA7	Training in research project management	2	2	2,543.22
SF	Science Festival	/	/	0.00
	Totals	165	144	788,524.94

* preliminary estimates

Accompanying Measures MA1: Various measures to promote international scientific cooperation or national coordination

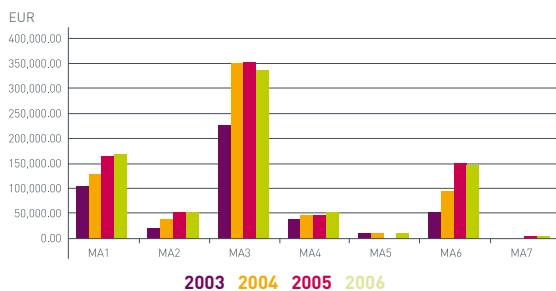
Accepted Proposals in 2006

MA1: Various measures to promote scientific culture, international scientific cooperation or national coordination in the research field

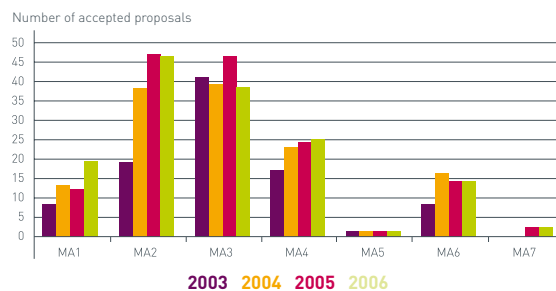
FNR/06/MA1/01		
Musée National d'Histoire Naturelle	2007	€ 25,000.00
Galileo Science Mobil 2007 ALINE FISCHER		
FNR/06/MA1/02		
Musée National d'Histoire Naturelle	2007	€ 25,000.00
Science Club 2007 PATRICK DELHALT		
FNR/06/MA1/03		
Musée National d'Histoire et d'Art	15 avril - 15 juin 2007	€ 25,000.00
Exposition «Pierre-Ernest de Mansfeld (1517-1604), prince de la Renaissance» MICHEL POLFER		
FNR/06/MA1/04		
CRP Gabriel Lippmann	1 ^{er} juin 2006 - 31 mai 2007	€ 10,000.00
e-quizz 2006 (4e édition) FERNAND REINIG		
FNR/06/MA1/05		
Section des Sciences de Institut Grand-Ducal	16 octobre - 18 décembre 2006	€ 8,000.00
Les Chercheurs Luxembourgeois à l'Etranger 2006 PIERRE SECK		
FNR/06/MA1/06		
Musée National d'Histoire Naturelle	20 - 21 octobre 2006	€ 10,000.00
Journées Luxembourgeoises de l'Astronomie ERIC BUTTINI		
FNR/06/MA1/07		
European Association for Astronomy Education	20 octobre 2006	€ 1,728.00
Conférence «Les planètes extra-solaires» FERNAND WAGNER		
FNR/06/MA1/08		
CRP Henri Tudor	2 ^e trimestre 2007	€ 4,500.00
Conférence de promotion du domaine et des métiers de l'aérospatial OLIVIER DE COLNET		
FNR/06/MA1/09		
CRP Henri Tudor	21 - 26 octobre 2006	€ 5,880.00
Esch se met au libre PATRICK HARPES		
FNR/06/MA1/10		
CRP Henri Tudor	1 - 4 juillet 2006	€ 5,700.00
Exposition «Le Tour de l'innovation à vélo» SERGE QUAZZOTTI		

FNR/06/MA1/13		
Forum Europa a.s.b.l.	1 ^{er} octobre 2006 - 1 ^{er} octobre 2007	€ 3,700.00
Forschung made in Luxembourg LEX FOLSCHIED		
FNR/06/MA1/15		
Université du Luxembourg	23 novembre 2006	€ 3,200.00
Education & Teachers Day ANTOINE KIES		
FNR/06/MA1/16		
Université du Luxembourg	1 ^{er} trimestre 2007	€ 1,548.00
Physique du football MASSIMO MALVETTI		
FNR/06/MA1/17		
Archives de la Ville de Luxembourg	8 janvier - 31 août 2007	€ 24,640.00
Scientific description in view of multilingualism in selected records in the archives of the city of Luxembourg EVAMARIE BANGE		
FNR/06/MA1/22		
Les Humanités Associées a.s.b.l.	1 ^{er} janvier - 30 juin 2007	€ 5,000.00
Conception et mise en ligne d'un site internet à l'animation d'un réseau de jeunes chercheurs en sciences sociales et humaines au Luxembourg et à la diffusion d'informations scientifiques CHRISTOPHE SOHN		
FNR/06/MA1/23		
Université du Luxembourg	1 ^{er} janvier - 31 décembre 2007	€ 2,500.00
Young Scientists MASSIMO MALVETTI		
FNR/06/MA1/24		
COLUPO (Comité Luxembourgeois pour l'Année Polaire Internationale)	mars 2007	€ 3,000.00
Lancement IPY (International Polar Year) ANTOINE KIES		
FNR/06/MA1/25		
Université du Luxembourg	avril ou mai 2007	€ 1,240.00
Global Change and the Groenland Ice Cap ANTOINE KIES		
FNR/06/MA1/26		
Université du Luxembourg	1 ^{er} mars - 30 juin 2007	€ 2,000.00
Les Jeudis des Sciences (12 ^e semestre) MASSIMO MALVETTI		

Expenditure per Accompanying Measure per year
2003 - 2006



Accepted proposals per Accompanying Measure per year
2003 - 2006



Accompanying Measures MA2: Active participation of novice researchers in scientific conferences

Accepted Proposals in 2006

MA2: Active participation of novice researchers in scientific conferences

FNR/06/MA2/01		
Université Henry Poincaré Nancy I	2 - 7 avril 2006	€ 1,042.80
<p>European Geosciences Union 2006 à Vienne Relation between structural control and fluid characteristics, considering rocks migrating through the brittle/ductile transition during the development of a Metamorphic Core Complex (MCC), Naxos Island, Greece LUC SIEBENALLER</p>		
FNR/06/MA2/02		
Agriculture and Agri-Food Canada	13 - 15 mars 2006	€ 1,427.68
<p>Isotopes as Tracers of Ecological Change à Tomar, Portugal € 15N and € 18O values of N₂O from horizontal soil gas sampling tubes from distinct agricultural plots representing different crops and nitrogen amendments LUC ROCK</p>		
FNR/06/MA2/03		
University of Ghent Department of Organic Chemistry	3 - 8 septembre 2006	€ 729.68
<p>29th European Peptide Symposium à Gdansk, Pologne Evaluation of a steroidal scaffold for the conformational restriction of peptides in the development of peptide vaccines CATHERINE BODÉ</p>		
FNR/06/MA2/04		
London School of Economics	9 - 13 juillet 2006	€ 1,377.34
<p>20th International Political Science Association (IPSA) - World Congress à Fukuoka Political Representation and Committee Attendance in the European Parliament PIERRE HAUSEMER</p>		
FNR/06/MA2/05		
Albert-Ludwig-Universität Freiburg	28 août - 1 ^{er} septembre 2006	€ 939.52
<p>5th Plant Biomechanics Conference à Stockholm Evaluating secondary growth processes in <i>Aristolochia macrophylla</i> by experiments and modelling TOM MASSELTTER</p>		
FNR/06/MA2/06		
Georg-August-Universität Göttingen	9 - 14 juillet 2006	€ 735.93
<p>16th International Congress of the International Organization of Mycoplasma (IOM) à Cambridge Characterization of a glycerol-3-phosphate dehydrogenase mutant from <i>Mycoplasma pneumoniae</i> CLAUDINE HAMES</p>		
FNR/06/MA2/07		
Centre de Recherche Public Henri Tudor	26 - 28 avril 2006	€ 1,012.78
<p>9th International ESAFORM Conference on Material Forming à Glasgow A numerically based approach for the blank design of thin precision metallic parts obtained by stamping MOHAMED AZAOUZI</p>		
FNR/06/MA2/08		
Service de Santé au Travail Multisectoriel	7 - 10 juillet 2006	€ 1,007.49
<p>XIV^e Congrès AIPTLF de psychologie du travail et développement des personnes et des organisations à Hammamet Facteurs psychosociaux et TMS: comparaison de la douleur musculosquelettique perçue entre le salarié et le médecin AURÉLIE DUVEAU</p>		

FNR/06/MA2/09		
University of Oxford	18 - 22 juin 2006	€ 856.13
XIV ^e Symposium International sur l'Artériosclérose à Rome Identification of apolipoprotein A-I as a plasma ligand for macrophage scavenger receptor A. CLAUDINE NEYEN		
FNR/06/MA2/10		
Centre de Recherche Public Gabriel Lippmann	21 - 25 août 2006	€ 1,175.65
XXII ^e Conférence Internationale sur les Polyphénols à Winnipeg, Canada Variability of antioxidants in a genetically diverse <i>Solanum tuberosum</i> L. collection CHRISTELLE ANDRÉ		
FNR/06/MA2/11		
Eidgenössische Technische Hochschule Zürich	25 - 30 juin 2006	€ 920.37
9 th International Conference on Probability Theory and Mathematical Statistics à Vilnius Diffusion in random environment TOM SCHMITZ		
FNR/06/MA2/12		
Université Catholique de Louvain	22 - 27 août 2006	€ 1,061.38
Molecular Genetics of Bacteria and Phages à Cold Spring Harbor GIL01 and relatives, a new generation of tectiviruses infecting <i>Bacillus thuringiensis</i> NADINE FORNELOS		
FNR/06/MA2/13		
Universität Heidelberg - Ruprecht Karls	30 avril - 4 mai 2006	€ 1,101.28
ARVO 2006 Annual Meeting à Fort Lauderdale Adaptive Optics with Phase Plate Precompensation for the Retina Scanning Closed-Loop System OLIVIER LA SCHIAZZA		
FNR/06/MA2/14		
Albert-Ludwig-Universität Freiburg	22 - 25 août 2006	€ 769.95
5 th European Conference on Ecological Restoration à Greifswald, Allemagne Floodplain restoration and extensive grazing in Luxemburg – aims, concept and first results of an interdisciplinary research project in the Syr valley HARALD SCHAICH		
FNR/06/MA2/15		
Université du Luxembourg/Campus Kirchberg	26 - 28 juin 2006	€ 980.00
The 6 th IASTED International Conference on European Power and Energy Systems - EuroPES 2006 à Rhodes Calculating the potential of biomass for a sustainable energetic use STEFAN KÖNIG		
FNR/06/MA2/16		
Centre de Recherche Public Henri Tudor	9 - 13 juillet 2006	€ 1,707.66
3 rd Biennial Meeting of the International Environmental Modelling and Software Society à Burlington Problems and errors in up- and down-scaling in environmental modelling for the policy scale ULRICH LEOPOLD		
FNR/06/MA2/17		
Universitätsklinikum des Saarlandes	17 - 20 juin 2006	€ 1,041.71
Heart Failure 2006 à Helsinki The PPARgamma agonist rosiglitazone exerts direct anti-apoptotic effects in hypoxia/reoxygenation MARC WERNER		
FNR/06/MA2/18		
Université Libre de Bruxelles	13 - 17 juillet 2006	€ 292.63
Eighth International Meeting of the Society of Social Choice and Welfare à Istanbul Comparison of the unique prudent order with Borda, Copeland, Slater and Kemeny Ranking CLAUDE LAMBORAY		
FNR/06/MA2/19		
Centre de Recherche Public Gabriel Lippmann	5 - 7 juillet 2006	€ 1,052.25
7 th International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences à Lisbonne Hydraulic and event knowledge to reduce the positional uncertainty in SAR flood images for improved flood model calibration and development GUY SCHUMANN		

FNR/06/MA2/20		
Université Catholique de Louvain	15 - 20 juillet 2006	€ 1,174.89
10 th International Conference on Alzheimer's Disease and Related Disorders à Madrid		
1) Increase in the production of Amyloid beta-peptide by lithium chloride is independent from its inhibition of GSK3		
2) Lack of phosphorylation of the Amyloid Precursor Protein on Thr668 residue increases the g-cleavage of the protein		
CHRISTINE FEYT		
FNR/06/MA2/21		
Centre de Recherche Public Henri Tudor	16 - 22 juillet 2006	€ 1,538.12
7 th World Congress on Computational Mechanics - WCCM à Los Angeles		
Linear and nonlinear analysis for sandwich structures by using Arlequin method		
HENG HU		
FNR/06/MA2/22		
Université Henry Poincaré Nancy I	30 juillet - 2 août 2006	€ 1,355.77
15 th IEEE International Symposium on the Applications of Ferroelectrics à Sunset Beach, Caroline du Nord		
Achievement of SAW Devices Based on 36° YX LiTaO3 Substrates Using Electron Beam Lithography		
PHILIPPE KIRSCH		
FNR/06/MA2/23		
Centre de Recherche Public Gabriel Lippmann	3 - 7 septembre	€ 1,062.10
7 th Siena Meeting from Genome to Proteome: Back to the Future à Siena		
Proteomics as a tool to understand the abiotic stress tolerance underlying cryopreservation in potato		
BRAM CRIEL		
FNR/06/MA2/24		
Österreichische Akademie der Wissenschaften	1 - 7 septembre 2006	€ 1,077.64
23 rd International Papillomavirus Conference à Prague		
Human papillomavirus type 16 E7 oncoprotein enhances polyubiquitination and proteasomal degradation of nuclear insulin-like growth factor binding protein-3 in cervical epithelial cells		
FRÉDÉRIC SANTER		
FNR/06/MA2/25		
Centre de Recherche Public Henri Tudor	10 - 14 septembre 2006	€ 1,271.73
IWA World Water Congress and Exhibition 2006 à Pékin		
Implementation of an integrated model for optimised urban wastewater management in view of better river water quality: A case study		
ANNE-MARIE SOLVI		
FNR/06/MA2/26		
Laboratoire National de Santé(Institute of Immunology)	17 - 20 septembre 2006	€ 1,139.29
Nuclear Receptors Meeting 2006 à Stockholm		
Nuclear receptors in human immune cells: expression and correlations		
ANDREA SCHOTE		
FNR/06/MA2/27		
University of California	20 - 25 août 2006	€ 1,393.55
11 th International Symposium on Microbial Ecology à Vienne		
Environmental proteomics, a new window on microbial community function		
PAUL WILMES		
FNR/06/MA2/28		
Imperial College London	6 - 9 septembre 2006	€ 1,042.78
1 st Joint Meeting of European National Societies of Immunology à Paris		
Quantifying antibody responses against multiple VACCINIA VIRUS antigens: a benchmark for smallpox vaccination		
MIKE PÜTZ		
FNR/06/MA2/29		
Centre de Recherche Public Henri Tudor	24 - 26 juillet 2006	€ 1,098.72
Mechanics and Materials in Design - M2D'2006 à Porto		
New estimates of the effective elastic properties of semi-crystalline polymers: application to polyethylene		
OLIVIER GUEGUEN		
FNR/06/MA2/30		
University of Sussex	25 - 28 octobre 2006	€ 698.32
6 th International Symposium on Wild Boar (Sus scrofa) and on Sub-order Suiformes à Chypre		
Impacts of supplemental feeding on wild boar Sus scrofa		
SANDRA CELLINA		

FNR/06/MA2/31		
Centre de Recherche Public Santé	30 août - 1 ^{er} septembre 2006	€ 510.50
Congrès ADELFI-EPITER 2006 à Dijon Rapports de moyennes géométriques pour évaluer la sensibilité in vitro de Plasmodium falciparum aux antipaludéens en Casamance (Sud-Ouest du Sénégal) MICHEL VAILLANT		
FNR/06/MA2/32		
University of Oxford	6 - 9 septembre 2006	€ 842.43
1 st Joint Meeting of European National Societies of Immunology à Paris Structures and interactions of CD21-CD23 and their role in allergic disease MARTINE BOMB		
FNR/06/MA2/33		
Universität Karlsruhe	6 - 11 août 2006	€ 1,015.25
11 th International Congress of Parasitology à Glasgow Effects of the inauguration of the Main-Danube-Canal on the biodiversity in the river Rhine, with special emphasis on eel parasites FRANKIE THIELEN		
FNR/06/MA2/34		
Laboratoire National de Santé(Institute of Immunology)	24 - 27 septembre 2006	€ 1,000.74
7 th International Congress of Veterinary Virology à Lisbonne Molecular differences and similarities between southeastern chinese and southwestern nigerian avian viruses: molecular epidemiology of HPAI H5N1 avian influenza virus, chicken anemia virus, infectious bronchitis virus and avian metapneumovirus MARIETTE DUCATEZ		
FNR/06/MA2/35		
University of Sheffield	23 - 27 septembre 2006	€ 1,251.32
13 th Annual Wildlife Society Conference à Anchorage Non-invasive genetic typing in the study of badger ecology: Past research and future directions ALAIN FRANTZ		
FNR/06/MA2/36		
University of Sussex	23 - 27 septembre 2006	€ 1,113.38
13 th Annual Wildlife Society Conference à Anchorage Non-invasive genetic typing in the study of badger ecology: Past research and future directions THOMAS SCHEPPERS		
FNR/06/MA2/37		
University of Sussex	20 - 22 octobre 2006	€ 400.64
29 ^e colloque francophone de mammalogie de la SFEPM à Lyon Eco-éthologie de la fouine en milieu urbain au Luxembourg JAN HERR		
FNR/06/MA2/38		
University of Sheffield	1 - 5 novembre 2006	€ 1,126.03
2006 Annual Meeting of the Society for Social Studies of Science à Vancouver Making the absent present MORGAN MEYER		
FNR/06/MA2/39		
Cranfield University	5 - 9 novembre 2006	€ 1,301.34
Water Quality Technology Conference à Denver Impact of continuous MIEX®DOC resin use on downstream water treatment processes MAXIME MERGEN		
FNR/06/MA2/40		
Centre de Recherche Public Henri Tudor	15 - 19 octobre 2006	€ 1,989.81
Material Science & Technology Conference 2006 Effect of inorganic nanoparticles incorporation in poly (vinyl chloride) / poly (vinyl butyral) binary blends for thermal stability improvement STÉPHANIE ETIENNE		
FNR/06/MA2/41		
Centre de Recherche Public Gabriel Lippmann	21 - 26 janvier 2007	€ 1,152.47
Temperature Stress in Plants Conference à Ventura Physiological response and proteomic changes in poplar cuttings during and after a heat constraint THOMAS DURAND		

Accompanying Measures MA2: Active participation of novice MA3: Organisation of scientific conferences in Luxembourg

FNR/06/MA2/42

Université du Luxembourg/Campus Limpertsberg	20 - 21 novembre 2006	€ 999.00
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Swansea University Conference 2006 - The European Charter for Regional or Minority Languages: Legal Challenges and Opportunities à Wales

Linguistic rights v. EU freedoms
ANTOINE MASSON

FNR/06/MA2/43

University of Technology Vienna	11 - 15 décembre 2006	€ 1,133.66
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AGU Fall Meeting 2006

Virtual Polar Motion and Universal Time Variations in Space Geodetic Techniques due to Atmospheric Pressure Loading
PAULO JORGE MENDES-CERVEIRA

FNR/06/MA2/44

Musée National d'Histoire Naturelle	20 au 23 février 2007	€ 838.15
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9. Jahrestagung der Gesellschaft für Biologische Systematik - Gene in Raum und Zeit à Vienne

Gene in Raum und Zeit: Phylogeographische Untersuchungen am *Melanargia galathea* / *Melanargia lachesis* - Artkomplex
JAN-CHRISTIAN HABEL

FNR/06/MA2/45

Université Pierre & Marie Curie	11 - 15 décembre 2006	€ 1,197.5
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AGU Fall Meeting 2006 à San Francisco

Carbonate geochemistry and organic biomarkers evolutions during the Early Toarcian in the Paris Basin
MICHAËL HERMOSO

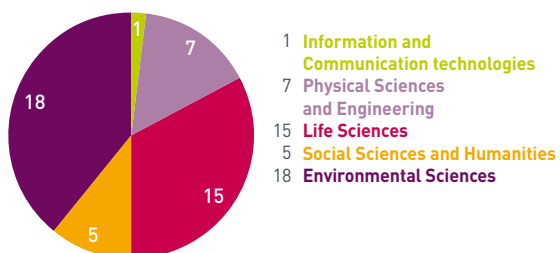
FNR/06/MA2/46

Eidgenössische Technische Hochschule Zürich	11 - 15 février 2007	€ 1,400.00
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Space Technology and Applications International Forum (STAIF) 2007

Thermal Control Architecture for a Planetary and Lunar Surface Exploration Micro-Robot
BRIAN BURG

Accompanying Measure MA2
Active participation of researchers
in scientific conferences - Domains



Accepted Proposals in 2006

MA3: Organisation of scientific conferences in Luxembourg

FNR/06/MA3/01		
Université du Luxembourg/Campus Limpertsberg	26 - 28 mars 2007	€ 23,712.00
Conférence «Fast Software Encryption» JEAN-CLAUDE ASSELBORN		
FNR/06/MA3/02		
Retrovirology Laboratory Luxembourg	6 - 7 octobre 2006	€ 21,858.00
Workshop «Novel Molecular Targets in Cancer» JORGE TERZIS		
FNR/06/MA3/03		
Centre de Recherche Public Gabriel Lippmann	15 - 18 novembre 2006	€ 23,586.00
Symposium «National Plant Genetic Resources Programmes: from research to policy-making» JEAN-FRANÇOIS HAUSMAN		
FNR/06/MA3/04		
Institut Européen des Itinéraires Culturels	21 - 23 septembre 2006	€ 25,000.00
Conférence «Finale Picture» - Gestion pro-active de l'impact du tourisme culturel sur l'économie et les ressources urbaines SORINA CAPP		
FNR/06/MA3/05		
Université du Luxembourg/Campus Limpertsberg	8 - 9 février 2007	€ 14,952.00
Colloque «European Administrative Law in the 21 st Century - The Move Towards an Integrated Administration» HERWIG HOFMANN		
FNR/06/MA3/06		
Computer Security Research and Response Team-Luxembourg	19 - 21 octobre 2006	€ 12,600.00
Hack.lu (Briding ethics and security in computer science) FRED ARBOGAST		
FNR/06/MA3/07		
Université du Luxembourg/Campus Limpertsberg	18 - 19 janvier 2007	€ 5,232.00
ORBEL 21 - Méthodes quantitatives de décision (21 ^e conférence annuelle de la société belge de recherche opérationnelle SOGESCI-B.V.W.B) RAYMOND BISSORFF		
FNR/06/MA3/08		
Centre de l'Appareil Locomoteur, de Médecine du Sport et de Prévention - Clinique d'Eich	10 mai 2006	€ 2,740.00
1 st International Schengen Sports Medicine Symposium ROMAIN SEIL		
FNR/06/MA3/09		
Centre de Recherche Public Henri Tudor	9 et 10 novembre 2006	€ 12,000.00
En route vers Lisbonne JEAN-CHARLES BERNACCONI		
FNR/06/MA3/10		
Université du Luxembourg/Campus Limpertsberg	29 - 30 septembre 2006	€ 7,146.00
Mini colloque sur la philosophie politique LUKAS K. SOSOE		

Accompanying Measures MA3: Organisation of scientific con

FNR/06/MA3/11

Université du Luxembourg/Campus Limpertsberg	Début 2007	€ 8,652.00
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Workshop «Intergenerational Relations and Intergenerational Justice: European and Multidisciplinary Perspectives»
DIETER FERRING

FNR/06/MA3/12

The «Art»er asbl	15 - 16 juin 2006	€ 1,980.00
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Colloque «Theater mit Kindern und Jugendlichen im sozio-kulturellen Kontext»
DÉLIA DIESCHBURG

FNR/06/MA3/13

Université du Luxembourg/Campus Limpertsberg	10 - 12 mai 2006	€ 12,427.00
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Colloque «Métamorphoses»
MARION COLAS-BLAISE

FNR/06/MA3/14

Université du Luxembourg/Campus Limpertsberg	10 - 13 octobre 2006	€ 6,944.00
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14^e journées Lotharingiennes: La Lotharingie en question: identités, oppositions, intégration
MICHEL MARGUE

FNR/06/MA3/15

Université du Luxembourg/Campus Limpertsberg	8 - 10 novembre 2006	€ 6,416.00
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Colloque «Dépasser le cadre national des Lieux de mémoire»
MICHEL MARGUE

FNR/06/MA3/16

Centre de Recherche Public Gabriel Lippmann	automne 2006	€ 3,960.00
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Séminaire «Santé et Environnement»
FERNAND REINIG

FNR/06/MA3/18

Fondation Hëllef fir d'Natur	6 octobre 2006	€ 3,042.00
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Bëschsymposium
JEAN-PIERRE SCHMITZ

FNR/06/MA3/19

Fondation Hëllef fir d'Natur	6 - 7 novembre 2006	€ 4,865.00
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Conférence «Die Wasserrahmenrichtlinie in Theorie und Praxis»
JEAN-PIERRE SCHMITZ

FNR/06/MA3/21

Université du Luxembourg/Campus Kirchberg	septembre 2006 - janvier 2007	€ 2,000.00
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Les jeudis des Sciences
MASSIMO MALVETTI

FNR/06/MA3/22

Institut de Formation Sociale	septembre - décembre 2006	€ 3,258.00
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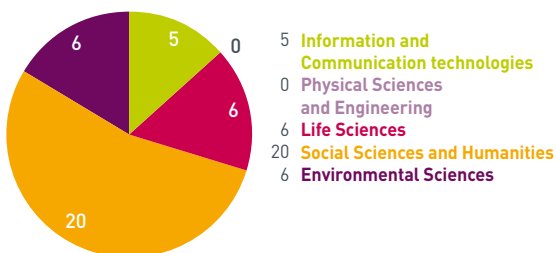
Cycle de conférences «Quelle place pour la/les Culture(s) dans la cité?»
FRÉDÉRIC MERTZ

FNR/06/MA3/23		
Université du Luxembourg/Campus Limpertsberg	automne 2006	€ 4,410.00
Cycle de conférences «Effet du climat scolaire sur la violence» GEORGES STEFFGEN		
FNR/06/MA3/24		
Centre de Recherche Public Santé	8 - 9 février 2007	€ 20,328.00
Grand Colloque scientifique international «Promotion de la santé et éducation pour la santé: état des connaissances et besoins de recherche» LAURENCE FOND-HARMANT		
FNR/06/MA3/25		
Centre de Recherche Public Gabriel Lippmann	19 - 20 avril 2007	€ 16,644.00
SWAP 2007 - First European Symposium on Waterborne pathogens in surface and drinking water FERNAND REINIG		
FNR/06/MA3/26		
Musée National d'Histoire Naturelle	18 - 20 octobre 2007	€ 11,760.00
Symposium of westpaleartic postglacial relicts JAN CHRISTIAN HABEL		
FNR/06/MA3/27		
Université du Luxembourg/Campus Limpertsberg	4 - 6 octobre 2007	€ 19,056.00
Internationale Tagung des Arbeitskreises «Historische Stadtsprachenforschung» MICHEL PAULY		
FNR/06/MA3/28		
Université du Luxembourg/Campus Limpertsberg	10 - 11 mai 2007	€ 12,500.00
Colloque «Racines et développements de la Gouvernance européenne: l'apport du Traité de Rome instituant la Communauté économique européenne (mars 1957)» RENÉ LEBOUTTE		
FNR/06/MA3/29		
Centre de Recherche Public Henri Tudor	21 - 22 février 2007	€ 7,061.00
Colloque «Terminologies et Classifications dans le domaine de la Santé» PIERRE PLUMER		
FNR/06/MA3/30		
Musée National d'Histoire Naturelle	9 - 10 mars 2007	€ 6,210.00
Colloque sur le patrimoine naturel et la biodiversité. Thème 2007: La coopération transfrontalière dans la Grande Région GEORGES BECHET		
FNR/06/MA3/31		
Centre de Recherche Public Henri Tudor	31 janvier - 2 février 2007	€ 8,460.00
6 ^e conférence régionale «LinuxDays 2007» PATRICK HARPES		
FNR/06/MA3/32		
Université du Luxembourg/Campus Limpertsberg	31 mai - 2 juin 2007	€ 7,032.00
Colloque «Le principe du procès équitable et la réalisation dans la pratique procédurale du droit pénal européen des affaires» STEFAN BRAUM		

Accompanying Measures MA3: Organisation of scientific con

FNR/06/MA3/33		
Université du Luxembourg/Campus Limpertsberg	20 ou 27 avril 2007	€ 7,110.00
Colloque «Le Contrat en Europe: réformes récentes et perspectives d'avenir» ANDRÉ PRÜM		
FNR/06/MA3/34		
Université du Luxembourg/Campus Limpertsberg	8 - 10 novembre 2007	€ 7,522.00
Colloque scientifique international «Le jansénisme et l'Europe» RAYMOND BAUSTERT		
FNR/06/MA3/35		
Université du Luxembourg/Campus Limpertsberg	17 - 19 mai 2007	€ 5,256.00
Colloque «Konzepte der Luxemburgischen Literatur(en): Historiographie, Kulturpolitik, Autorpoetik» GEORG MEIN		
FNR/06/MA3/37		
Université du Luxembourg/Campus Limpertsberg	7 - 10 juin 2007	€ 7,260.00
Colloque scientifique international «Migration und Globalgeschichte» JEAN-PAUL LEHNERS		
FNR/06/MA3/38		
Université du Luxembourg/Campus Limpertsberg	février, mars ou avril 2007	€ 4,542.00
Colloque «Der Sozialstaat im Wandel? Grundlagen und Perspektiven der Sozial- und Solidarwirtschaft in Luxemburg» DIETER FERRING		
FNR/06/MA3/39		
Convivium a.s.b.l.	8 - 9 juin 2007	€ 10,200.00
Colloque «Rêves d'Italie, Italies de Rêves» (Réalités et imaginaires autour de la présence italienne au Luxembourg et dans la Grande Région) MARIA LUISA CALDOGNETTO		
FNR/06/MA3/41		
Université du Luxembourg/Campus Limpertsberg	16 janvier - 26 juin 2007	€ 3,000.00
Cycle de conférence «Tuesday Seminars in Biosciences» IRIS BEHRMANN		
FNR/06/MA3/42		
Université du Luxembourg / LIASIT	1 ^{er} janvier - 30 juin 2007	€ 4,860.00
Cylce de conférences «Trust, Security and reliability» THOMAS ENGEL		

Accompanying Measure MA3
Organisation of a scientific conference
in Luxembourg - Domains



Accompanying Measures MA4a: Publication of doctoral theses

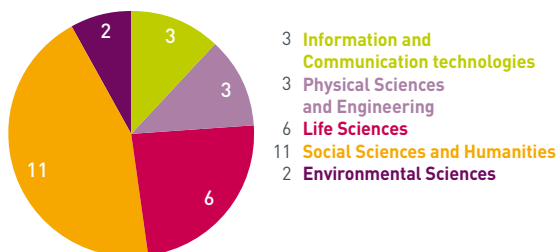
Accepted Proposals in 2006

MA4a: Publication of doctoral theses

FNR/06/MA4a/01	
Universität Innsbruck	€ 373.00
Design and in vivo evaluation of novel oral drug delivery systems for hydrophilic macromolecules THIERRY SCHMITZ	
FNR/06/MA4a/02	
University of East Anglia	€ 842.14
Metaproteomic Investigations of Enhanced Biological Phosphorus Removal in Activated Sludge PAUL WILMES	
FNR/06/MA4a/03	
Universität Karlsruhe	€ 1,465.00
Der Einfluss einwandernder Amphipoden auf die Parasitözönose des Europäischen Aals (<i>Anguilla anguilla</i>) FRANKIE THIELEN	
FNR/06/MA4a/04	
Université Libre de Bruxelles	€ 3,000.00
La production des espaces publics dans la ville contemporaine CHRISTIAN DESSOUROUX	
FNR/06/MA4a/05	
Eidgenössische Technische Hochschule Zürich	€ 483.12
Laser Interaction with Materials: from Transparent Materials to Thin Films THOMAS DUMONT	
FNR/06/MA4a/07	
Université du Luxembourg/Campus Limpertsberg	€ 3,000.00
Hospitaler zwischen Maas und Rhein im Mittelalter MICHEL PAULY	
FNR/06/MA4a/08	
Eidgenössische Technische Hochschule Zürich	€ 450.00
Diffusions in random environment and ballistic behaviour TOM SCHMITZ	
FNR/06/MA4a/09	
Universität Leipzig	€ 698.06
Studie zum zusatztlichen Eintrag von Hormonen in die menschliche Nahrungskette durch das Schlachten von trachtigen Rindern in der Europaischen Union am Beispiel von Luxemburg und Italien KATIA DI NICOLO	
FNR/06/MA4a/10	
Université du Luxembourg/Campus Walferdange	€ 3,000.00
Publication d'une thèse de doctorat intitulée «Identitatskonstruierende Migrationseffekte am Beispiel portugiesischer Frauen in Luxemburg» CHRISTEL BALTES-LÖHR	

FNR/06/MA4a/11	
Universität des Saarlandes, Medizinische Fakultät	€ 1,271.87
Publication d'une thèse de doctorat intitulée «Die Reproduzierbarkeit der röntologischen Bestimmung von Vorder- und Hinterhornansatz des Außenminiskus zur Planung der Meniskustransplantation» PHILIPPE WILMES	
FNR/06/MA4a/12	
Université Louis Pasteur	€ 1,627.00
Publication d'une thèse de doctorat intitulée «Cyclodextrines endofonctionnalisées. Synthèse et propriétés de ligands chélatants hautement préorganisés» LAURENT POORTERS	
FNR/06/MA4a/13	
Universität Trier	€ 3,000.00
Publication d'une thèse de doctorat intitulée «Unruhehäufungen und ihre Zusammenhänge in Städten des Reiches zu Beginn des 14. Jahrhunderts (1300 - 1305)» VOLKER TURNAU	
FNR/06/MA4a/14	
Centre de Recherche Public Santé	€ 1,502.60
Viral and host factors in HIV-1 entry: pathogenic and therapeutic implications for HIV-1 infection FRANÇOIS ROMAN	
FNR/06/MA4a/15	
Universität Bonn	€ 3,000.00
Todesarten. Zu den Poetologien des Ekels in der Prosa Thomas Bernhards CLAUDE HAAS	

Accompanying Measure MA4
Scientific Publications - Domains



Accompanying Measures MA4b: Publication of scientific works of European research projects

Accepted Proposals in 2006

MA4b: Publication of scientific works

FNR/06/MA4b/01	
Centre de Recherche Public Henri Tudor	€ 1,249.00
Actes de la «Image J User and Developer Conference» PIERRE PLUMER	
FNR/06/MA4b/02	
Centre de Recherche Public Henri Tudor	€ 1,860.00
Actes de la «6 th International SPICE Conference (Software Process Improvement and Capability d'Etermination)» BÉATRIX BARAFORT	
FNR/06/MA4b/03	
Université du Luxembourg/Campus Limpertsberg	€ 1,950.00
Representation of Justice in Civil law and Common law countries HERWIG HOFMANN	
FNR/06/MA4b/04	
Centre National de Littérature	€ 3,000.00
Dictionnaire bio-bibliographique des auteurs luxembourgeois GERMAINE GOETZINGER	
FNR/06/MA4b/05	
Centre de Recherche Public Henri Tudor	€ 3,000.00
Actes de la «18 th International Conference on Advanced Information Systems Engineering - CaiSE'06» ERIC DUBOIS	
FNR/06/MA4b/06	
Université du Luxembourg/Campus Limpertsberg	€ 3,000.00
Actes de la conférence «Métamorphoses» MARION COLAS-BLAISE	
FNR/06/MA4b/07	
Lëtzebuurger Aktiounskrees Psychomotorik	€ 3,000.00
Actes de la conférence «Allen Gewalten zum Trotz sich erhalten - ADHS im Lebenslauf» SUZETTE EVERLING	
FNR/06/MA4b/08	
Bibliothèque nationale de Luxembourg	€ 3,000.00
Die Echternacher Handschriften bis zum Jahre 1628 THOMAS FALMAGNE	
FNR/06/MA4b/09	
Centre de Recherche Public Henri Tudor	€ 1,824.00
Actes de la conférence «GISEH 2006» DAVID EVARISTO	
FNR/06/MA4b/10	
Université du Luxembourg/Campus Limpertsberg	€ 3,000.00
Vivre dans la Grande Région FERNAND FEHLEN	
FNR/06/MA4b/11	
Centre Hospitalier de Luxembourg	€ 3,000.00
Actes du colloque «Groupement des hôpitaux de jour» CHARLES PULL	

Accepted Proposals in 2006

MA5: Preparation of European research projects

FNR/06/MA5/01

Université du Luxembourg/Campus Limpertsberg

€ 10,000.00

u-2010 Enterprise Next Generation Network Vision 2010
THOMAS ENGEL

Accepted Proposals in 2006

MA6: Mobility of researchers

FNR/06/MA6/01		
Université du Luxembourg/Campus Limpertsberg	15 novembre 2006 - 15 février 2007	€ 9,200.00
<p>Séjour du Dr Michel Marso du Forschungszentrum Jülich à l'Université du Luxembourg. Sujet activité: Untersuchung zu Einzelantennen und Antennenarrays für den Einsatz in sogenannten Photomasken bei hohen Frequenzen bis in den Terahertz-Bereich MASSIMO MALVETTI</p>		
FNR/06/MA6/02		
Université du Luxembourg/Campus Limpertsberg	22 mai - 28 septembre 2006	€ 9,426.00
<p>Séjour de Mme Sabrina Brécard de l'Université du Luxembourg à l'Université de Cardiff. Sujet activité: Rôle du calcium dans la translocation de p67phox à la membrane phagosomale dans les neutrophiles ERIC TSCHIRHART</p>		
FNR/06/MA6/03		
Université du Luxembourg/Campus Limpertsberg	15 septembre - 15 décembre 2006	€ 7,641.00
<p>Séjour de M. Todorov Rumenov de l'Université de Sofia à l'Université du Luxembourg. Sujet activité: Determination of radionuclides in water by LSC and Alpha Counting ANTOINE KIES</p>		
FNR/06/MA6/04		
Centre de Recherche Public Gabriel Lippmann	1 ^{er} octobre - 31 décembre 2006	€ 1,250.00
<p>Séjour de M. Fabrizio Fenicia du CRP Gabriel Lippmann à la Oregon State University. Sujet activité: Hydrological research FERNAND REINIG</p>		
FNR/06/MA6/06		
Centre de Recherche Public Henri Tudor	1 ^{er} septembre - 30 novembre 2006	€ 9,150.00
<p>Séjour du Prof. Hakim Naceur de l'Université de Technologie de Compiègne au CRP Henri Tudor. Sujet activité: Optimisation mathématiques du procédé d'emboutissage de pièces de précision en tôle fine SALIM BELOUETTAR</p>		
FNR/06/MA6/07		
Centre de Recherche Public Henri Tudor	1 ^{er} juillet - 30 septembre 2006	€ 9,673.00
<p>Séjour de Dr Lahcen Azrar de l'Université Abdelmalek Essaadi de Tanger au CRP Henri Tudor. Sujet activité: Non-linear vibration analysis of actively loaded sandwich piezoelectric SALIM BELOUETTAR</p>		
FNR/06/MA6/08		
Université du Luxembourg/Campus Limpertsberg	15 août - 15 novembre 2006	€ 10,550.00
<p>Séjour du Dr Richard Gross du Jet Propulsion Laboratory de Pasadena, Californie à l'Université du Luxembourg. Sujet activité: Synthesis of time variable geometry and gravity of the Earth to assess change in terrestrial waterstorage, its effect on sea level, and Earth rotation TONIE VAN DAM</p>		
FNR/06/MA6/09		
Centre de Recherche Public Santé	1 ^{er} juillet - 31 décembre 2006	€ 18,170.00
<p>Séjour de Mme Colette Andrée de l'hôpital universitaire de Zurich au CRP-Santé. Sujet activité: Analyse et présentation des résultats de l'impact de la migraine et des maux de tête chroniques au GDL MARIE-LISE LAIR-HILLION</p>		

FNR/06/MA6/11

Centre de Recherche Public Santé	1 ^{er} janvier 2007 - 31 décembre 2008	€ 12,500.00
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Séjour de M. Michel Vaillant du CRP-Santé à l'Organisation Mondiale de la Santé à Genève
 Sujet activité: Collaborations dans le domaine de la recherche clinique, en particulier sur les aspects méthodologiques des études cliniques avec une application aux analyses de sensibilité in vitro aux médicaments
 MARIE-LISE LAIR-HILLION

FNR/06/MA6/12

Université du Luxembourg/Campus Walferdange	1 ^{er} août - 31 décembre 2007	€ 15,230.00
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Séjour de M. Daniel Palacios de l'Université Jaume I de Castellón à l'Université du Luxembourg.
 Sujet activité: A generic framework for computer assisted problem understanding and solving
 ROMAIN MARTIN

FNR/06/MA6/13

Université du Luxembourg/Campus Kirchberg	1 ^{er} mai - 31 juillet 2007	€ 8,000.00
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Séjour de M. Jörg Kienzle de la Mc Gill University de Montréal à l'Université du Luxembourg.
 Sujet activité: Model-driven engineering of dependable systems
 NICOLAS GUELFY

FNR/06/MA6/14

Université du Luxembourg/Campus Kirchberg	2 avril - 2 octobre 2007	€ 18,130.00
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Séjour de M. Jean-Marc Franssen de l'Université de Liège à l'Université de Luxembourg
 Sujet activité: Etude de la robustesse dans les lois constitutives multiaxiales du béton
 CHRISTOPH ODENBREIT

FNR/06/MA6/15

Université du Luxembourg/Campus Limpertsberg	22 janvier - 12 mai 2007	€ 8,200.00
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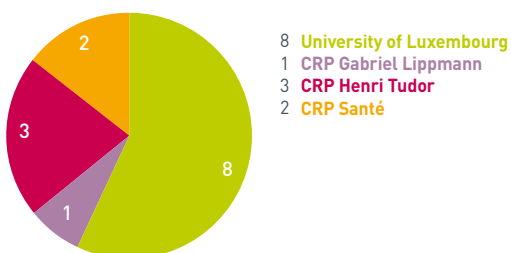
Séjour de Mme Dessislava Dimitrova du Institute for Nuclear Research and Nuclear Energy de Sofia à l'Université du Luxembourg.
 Sujet activité: Radiochemical methodologies; plutonium in environmental samples
 ANTOINE KIES

FNR/06/MA6/16

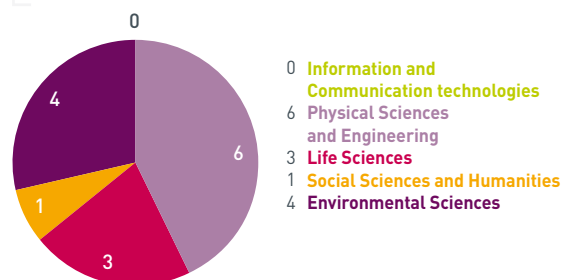
Centre de Recherche Public Henri Tudor	1 ^{er} avril - 31 mai 2007	€ 6,100.00
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Séjour de M. Ahmed Makradi de l'Université Louis Pasteur de Strasbourg au CRP Henri Tudor.
 Sujet activité: Modelling and simulations of the Mechanical Behaviour of Polymers: effects of strain rate, temperature, pressure and strain induced crystallization
 SALIM BELOUETTAR

Accompanying Measure MA6
 Mobility researchers - Number of proposals per institution



Accompanying Measure MA6
 Mobility of researchers - Domains



Accepted Proposals in 2006

MA7: Training in research project management

FNR/06/MA7/01		
Centre de Recherche Public Henri Tudor	31 janvier - 1 ^{er} février 2006	€ 1,120.22
INTERFACE EUROPE - Formation aux programmes de recherche européens à Paris PASCAL LHOAS		
FNR/06/MA7/02		
Centre de Recherche Public Henri Tudor	25 - 26 mai 2006	€ 1,423.00
SEC Project Management Seminar à Budapest SERGE GILLÉ		

Activities Planned for 2007



Activities Planned for 2007 Finalisation of Programmes Second Call for Project Proposals under the BIOSAN Programme

Finalisation of the FNR Foresight Exercise and Drawing up of New Research Programmes

After its preparation in 2005, the forecasting exercise FNR Foresight was officially launched on 20 January 2006. Generally speaking, the FNR Foresight will aim to consolidate the views of the main parties involved in public and private research in Luxembourg, and to identify for the public sector the research fields and priority aims of medium- and/or long-term interest to society in Luxembourg. Based on this, the National Research Fund's new multi-annual research programmes starting in 2007/2008 will be drawn up.

The FNR Foresight exercise has been designed as a two phase process. The first phase lasted from January to August 2006. During the second phase (September 2006 - June 2007), 6 expert panels, each consisting of around 15 to 25 Luxembourg and international experts, meet twice with the Fund and the consultants accompanying the exercise. The aim is to identify priority domains for the six priority research fields retained during the first phase of the exercise. Concrete priorities are due to be submitted to the Government in June 2007. The Government will then decide on which research priorities to focus national efforts, and implementation of these priorities will be discussed with the relevant stakeholders.

At the end of 2007, and based on the Foresight results, the Fund will then submit proposals for new multi-annual research programmes to the Government with a view to getting them under way in 2007/2008.

For further information, see the chapter on the FNR Foresight in the present report or go to www.fnrforesight.lu

Second Call for Project Proposals under the SECAL Programme

As part of the "Food Safety" (SECAL) programme, launched in 2003, the Fund will issue a second call for project proposals in February 2007 with a total budget of EUR 2.3 million.

Further information is published on the Fund's website www.fnr.lu.

Second Call for Project Proposals under the BIOSAN Programme

As part of the "Biotechnology and Health" (BIOSAN) programme, launched in 2000, the Fund will issue a second call for project proposals in February 2007 with a total budget of EUR 2.1 million.

Further information is published on the Fund's website www.fnr.lu.



First Call of the Programme ATTRACT: Attract Researchers to Luxembourg - Opportunities for Outstanding Young Researchers in Luxembourg

The new programme "Attract Researchers to Luxembourg: Opportunities for Outstanding Young Researchers in Luxembourg" (ATTRACT) was drawn up by the National Research Fund in 2005 and submitted to the Government in 2006.

ATTRACT aims to build on the excellence, dynamism and creativity of research in Luxembourg by integrating researchers with a high level of ability in science or technology and proven experience in a professional research context. The programme is designed for researchers not yet established in Luxembourg; it offers them the opportunity to set up a research team within a public-sector research institution in Luxembourg that is willing to host them. Research proposals should therefore be submitted jointly by the candidate and the host institution. Host institutions will offer candidates the prospect of integration in the medium and possibly long term into their activities.

Projects submitted should be innovative and of high scientific quality and candidates must be able to show that they have gained a minimum of two and a maximum of eight years' professional experience since successful completion of doctoral studies. Projects selected under the ATTRACT programme have a lifespan of five years and the financial contribution by FNR will be up to EUR 1,000,000.

The first call will be launched in January 2007 with the following mandatory deadlines:

15 March 2007: Joint submission by the candidate and the Luxembourg host research institution of a declaration of intent with a brief project description

1st June 2007: Joint submission of the full proposal

In so far as possible, the Fund will take a decision on the financing of proposals by October 2007. In principle, the Fund will select only one project proposal per call. Should a call not result in a successful selection of a candidate, the Fund may select up to two projects during the next call.

Further information is published on the Fund's website www.fnr.lu

First Call of the Programme ATTRACT: Attract
Researchers to Luxembourg - Opportunities for
Outstanding Young Researchers in Luxembourg

Activities Planned for 2007 Promoting Scientific Awareness

recherche from the Ministry of Research to the National Research

Promoting Scientific Awareness

Informing the general public, and above all young people, on research activities in Luxembourg and encouraging students of all ages to take up a career in research is a priority for the National Research Fund.

To that effect the Fund will join up with other players from the public research sector in 2007, as in previous years, to finance and co-organise several activities with the aim to raising scientific awareness:

- **Science Circus**

The Science Circus, a special edition of the Science Festival, will be organised by the National Museum of Natural History on 22 and 23 September 2007 in and around the National Museum of Natural History and the Centre Culturel de Rencontre Abbaye de Neumünster. The Science Circus is funded by "Luxembourg and the Grande Région, European Capital of Culture 2007" and also supported by the National Research Fund.

- **Foire de l'étudiant 2007**

Together with other players from the public sector, the Fund will again be present at the Foire de l'étudiant 2007 with the aim of informing young students on research opportunities in Luxembourg and encouraging them to choose a career in research.



State Secretary Octavie Modert visits the stand *Firwat net Fuerscher?* at the *Foire de l'étudiant 2006*



Students on the research information stand *Firwat net Fuerscher?*

- **Job Fair meet@uni.lu 2007**

In December 2007, the Fund will again be present at the job fair meet@uni.lu, organised by the University of Luxembourg, where it will present research activities in Luxembourg to university students from the Grand-Duchy and abroad.

Additionally, the National Research Fund will organise in early 2007 a "Workshop on Communication and the Promotion of Scientific Awareness" which will bring together public-sector players with the aim of developing a common vision of science communication and promotion in Luxembourg, in view of a better cooperation in this domain in the future.

In parallel, a survey among the Luxembourg population will be carried out in order to define how the general public perceives Luxembourg research and what its expectations are.

Transfer of the Bourses de formation recherche from the Ministry of Research to the National Research Fund

The Luxembourg Research-Training Fellowship Scheme, the so-called Bourses de Formation-Recherche, goes back to the Framework Law on Research in 1987 and is currently managed under the auspices of the Ministry of Research. Within the reform of the scheme, the management of the future PhD and postdoctoral scheme will be transferred to the National Research Fund after the adoption of a new law, probably in early 2008.

2007 Survey – Accompanying Measures of the National Research Fund

Since 2001, the National Research Fund has been subsidising Accompanying Measures to strengthen the general framework of scientific research in Luxembourg and to complement the existing funding tools.

In order to better meet the expectations of the beneficiaries, the Fund will conduct a survey in 2007 with a view to obtaining an objective assessment of the existing Accompanying Measures. The survey will be aimed at both actual and potential beneficiaries of the FNR funding opportunities and at Luxembourg R&D players in general.

The feedback collected through the survey will constitute a valuable tool for the Fund, enabling it to improve the design and management of the Accompanying Measures so as to better fulfil the needs and expectations of its beneficiaries.

A close-up photograph of a green leaf with water droplets and a small red ladybug, with a person's face blurred in the background. The text "Tasks and Operation" is centered on the image, flanked by white L-shaped brackets.

Tasks and Operation



Tasks

Under the terms of Article 2 of the Law of 31 May 1999 establishing a national Research Fund in the public sector, the tasks of the Fund are:

- to receive, manage and use funds and donations from public or private sources to promote research and technological development in the public sector at national level, referred to as "R&D", and
- to maintain an ongoing process of reflection in the field of national R&D policy orientation, according to economic data and scientific and technological developments, as well as on the basis of in-depth studies.

Role of the Fund

- to develop proposals relating to the objectives of national R&D policy;
- to suggest priority actions to achieve these objectives;
- to develop multi-annual activity programmes on the basis of the priorities adopted and thereby contribute to the establishment of a multi-annual R&D programme at national level;
- to secure the implementation of these multi-annual activity programmes by allocating the financial resources made available to it and to monitor their implementation;
- to ensure systematic and continuous evaluation of the results obtained, in order to facilitate any readjustment of priorities which may prove necessary;
- generally, to promote the efficient coordination of national R&D activities and Luxembourg participation in international R&D cooperation programmes; and
- to present to the Minister responsible for scientific and applied research, on its own initiative, any proposal, suggestion and information regarding the implementation of national R&D policy.

The Beneficiaries

- The public research centres set up on the basis of the Law of 9 March 1987 to facilitate:
 1. the organisation of technological research and development in the public sector,
 2. technology transfer and scientific and technical cooperation between private companies and the public sector;
- the University of Luxembourg;
- the Centre d'Études de Populations, de Pauvreté et de Politiques Socio-Économiques (Centre for Studies on Population, Poverty and Socio-Economic Policy), a public establishment created by the Law of 10 November 1989; and
- the public bodies, services and establishments authorised to undertake research and development and technology transfer activities in their fields of competence, with the aim of promoting scientific progress and technological innovation.

Resources Provided

In the performance of its tasks, the Fund may:

- organise activities to promote scientific culture,
- allocate bursaries to researchers and scientists,
- give grants to individuals and associations pursuing activities of a scientific nature, and
- enable the beneficiaries mentioned above to participate in programmes organised by the European Community or by international organisations.

Operation

The National Research Fund is a public establishment with scientific, financial and administrative autonomy and is managed by a Board of Administration, assisted by a Scientific Council and a Secretariat.

The Board of Administration

The Board of Administration consists of:

- a member nominated by each of the Ministers concerned, whose areas of responsibility cover scientific research and applied research, higher education, industrial research and development, technology transfer or the budget,
- two members nominated by the Government Council after consultation with the other Ministers organising R&D,
- six members nominated by the Government from among figures in the private sector recognised for their competence in the field of R&D.

Members of the Board of Administration from 2005-2009

President:

- Romain Henrion, Arcelor S.A.

Vice-President:

- Pierre-Marie Valenne, Banque Privée Edmond de Rothschild Europe
- Raymond Bausch, Ministry of Culture, Higher Education and Research
- Jean Bergh, Goodyear S.A.
- Germain Dondelinger, Ministry of Culture, Higher Education and Research
- Yves Elsen, Hitec Luxembourg S.A.
- Jean-Marie Haensel, Inspection Générale des Finances
- Danielle Hansen-Koenig, Ministry of Health
- Romain Keiser, Galvalange s.à r.l.
- Henri Metz, Section Médicale de l'Institut Grand-Ducal
- François Meyer, Gencell SAS, France
- Marco Valentiny, Ministry of Economy and Foreign Trade

The Scientific Council

The Scientific Council assists the Board of Administration as a consultative body on scientific matters.

The Scientific Council consists of:

- a representative of each public research centre (CRP Henri Tudor, CRP Gabriel Lippmann, CRP Santé),
- a representative of the Centre d'Études de Populations, de Pauvreté et de Politiques Socio-Économiques (CEPS/INSTEAD),
- two representatives of the University of Luxembourg established by the Law of 12 August 2003,
- figures external to the bodies mentioned above, whether from Luxembourg or abroad, selected on the basis of their competence. Their number exceeds that of the bodies listed by one.

Members of the Scientific Council from 2005 to 2009

President:

- Jean-Frank Wagner, University of Trier, Germany
- Jean de la Hamette, Public Research Centre Henri Tudor
- Adelheid Ehmke, University of Luxembourg, until April 2006
- Eric Tschirhart, University of Luxembourg, since April 2006
- Gusty Feyder, DuPont Teijin Films Luxembourg S.A.
- Marc Gengler, École Supérieure d'Ingénieurs de Luminy/Marseille, France
- Jean-Paul Lehnert, University of Luxembourg
- Fernand Muller, Dometic s.à r.l.
- Délia Nilles, University of Lausanne, École des HEC, Switzerland
- Fernand Reinig, Public Research Centre Gabriel Lippmann
- Gaston Schaber, Centre d'Études de Populations, de Pauvreté et de Politiques Socio-Économiques
- Fernand Wagner, Public Research Centre Santé, until June 2006
- François Schneider, National Health Laboratory, since September 2006
- Pierre Wiltzius, Beckman Institute, University of Illinois, USA

Tasks and Operation The Secretariat General Procedures for the Selection of Research Projects

The Secretariat

The Secretariat of the Fund consists of:

- Raymond Bausch, Secretary General, raymond.bausch@fnr.lu
- Frank Bingen, Programme Manager, frank.bingen@fnr.lu
- Carlo Duprel, Programme Manager, carlo.duprel@fnr.lu
- Frank Glod, Programme Manager, frank.glod@fnr.lu
- Christiane Kaell, Programme Manager, christiane.kaell@fnr.lu
- Ulrike Kohl, Programme Manager, ulrike.kohl@fnr.lu
- Andreea Monnat, Programme Manager, andreea.monnat@fnr.lu
- Anne Schroeder-Van den Bulcke, Communication Manager, anne.schroeder@fnr.lu
- Jill May-Mousel, Assistant of the Secretary General, jill.mousel@fnr.lu
- Elvire Geiben, Administrative Assistant, elvire.geiben@fnr.lu
- Sylvie Heinisch, Administrative Assistant, sylvie.heinisch@fnr.lu
- Yi Lin, Administrative Assistant, yi.lin@fnr.lu
- Susana Pinto, Administrative Assistant, susana.pinto@fnr.lu
- Annelise Baltes, on a temporary placement from 27 March to 23 June 2006
- Bob Mousel, from 1 July to 31 July 2006 (student vacation assignment)
- Marco Marques Pinto, from 1 August to 31 August 2006 (student vacation assignment)
- Frédéric Wagner, from 14 August to 8 September 2006 (student vacation assignment)



From left to right and from top to bottom: Raymond Bausch, Frank Bingen, Carlo Duprel, Frank Glod, Christiane Kaell, Sylvie Heinisch, Anne Schroeder, Elvire Geiben, Andreea Monnat, Yi Lin, Ulrike Kohl, Jill May-Mousel.

Absent: Susana Pinto

General Procedures for the Selection of Research Projects

The procedures for the selection of research projects are based on the Law of 31 May 1999 establishing the National Research Fund and the Grand-Ducal Regulation of 27 July 2000. The Fund draws up multi-annual research programmes and issues calls for project proposals within the framework of those programmes.

Once a call is launched, the Fund's Scientific Council appoints an expert, known as rapporteur, whose task it is to coordinate the evaluation of projects submitted and to present the evaluation results to the Fund's Scientific Council. The rapporteur appoints three to four independent experts for each research project. The Board of Administration and Scientific Council have the right to appoint additional experts where necessary.

Project proposals are evaluated by independent experts according to the following criteria:

- Scientific quality;
- Socio-economic value;
- Cost-effectiveness;
- Consistency with the objectives and priorities set out in the ongoing research programmes;
- Realistic nature within the Luxembourg context;
- Mobilisation of national resources;
- Balanced distribution of budgetary resources.

Following the experts' evaluation, the rapporteur submits to the Scientific Council a list of project proposals to be selected for a financial contribution. The final decision is taken by the Board of Administration following a scientific advice from the Scientific Council. Thus a project proposal may be:

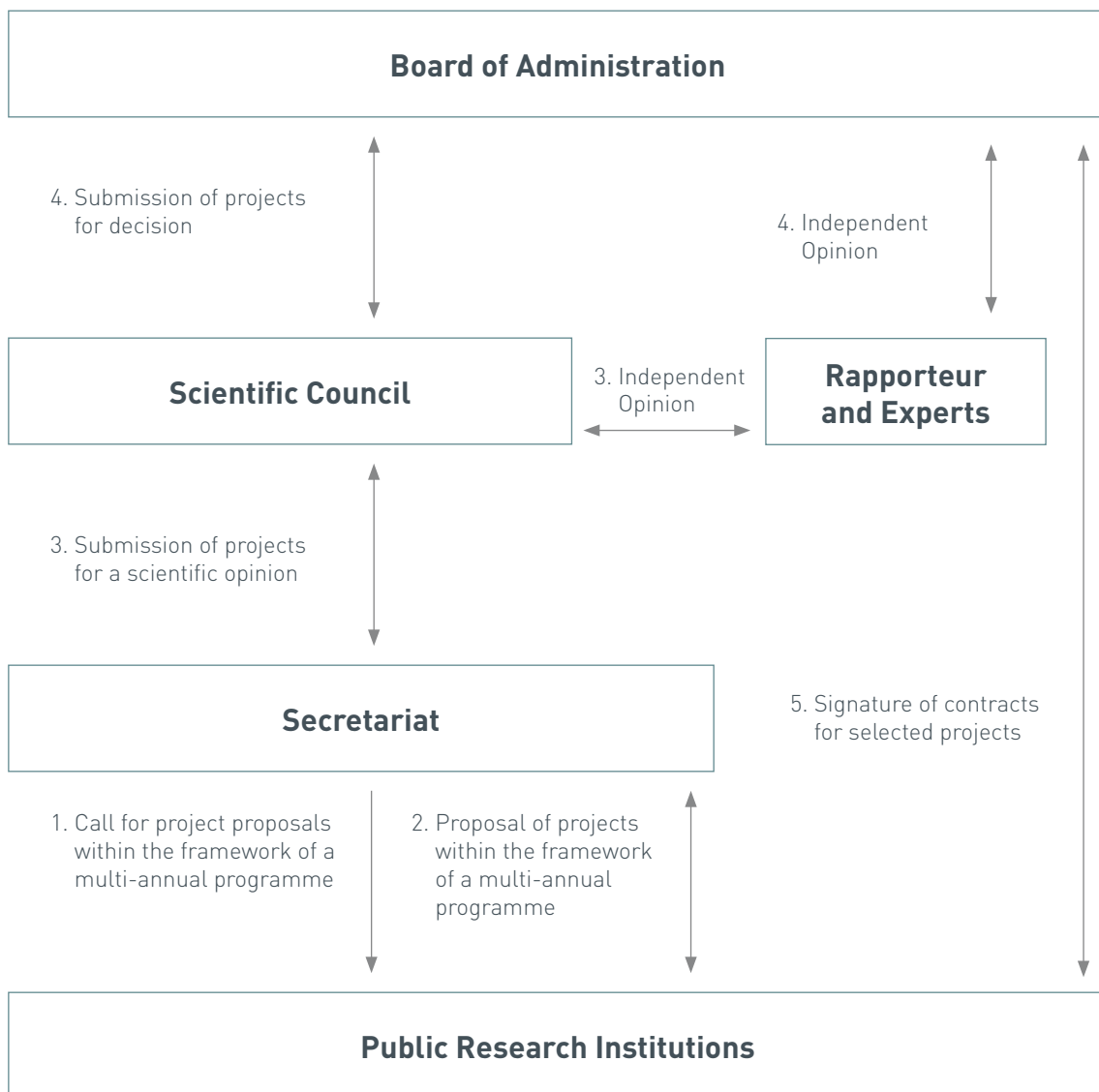
- accepted,
- rejected, or
- subject to amendment.

Project proposers are informed in writing of the results of the evaluation. When a project has been accepted, an agreement is negotiated and concluded between the Fund and the contracting parties.

If a project is subject to amendment, the rapporteur reviews the amended proposal together with the Secretariat, and sometimes in consultation with other experts, the Scientific Council and the Board of Administration.

Tasks and Operation General Procedures for the Selection of Multi-annual Research Programmes

Fig.: Current procedures for the selection of National Research Fund projects



For further details on the project selection procedure, please visit the Fund's website www.fnr.lu

General Procedures for the Selection of Multi-annual Research Programmes

At the outset, the Fund drew up its multi-annual activity programmes on the basis of proposals from relevant national bodies in the field of R&D.

During the preparation of its first multi-annual programmes in 2000 and 2002, the Fund issued two calls for programme proposals in which relevant research bodies in the public and private sectors and individual or institutional actors could submit suggestions. Proposals were selected following evaluation by the Scientific Council and the Board of Administration on the basis of the following criteria:

- Scientific quality;
- Socio-economic value;
- Realistic nature within the Luxembourg context;
- Mobilisation of national resources;
- Balanced distribution of budgetary resources.

The Fund's Board of Administration decided what proposals to select following a scientific advice from the Scientific Council.

A group of experts was then formed to draw up the specific content of the programmes. After incorporating amendments suggested by the Scientific Council and international experts, a final text and proposed budget were submitted to the Government.

Currently, the FNR is carrying out a national Foresight exercise, together with the Luxembourg Ministry of Research and the actors involved in Luxembourg research, with the objective of identifying important future research domains for Luxembourg, and using this information to feed into governmental research policy and to shape new FNR research programmes.

For further details on the programme selection procedure and on the FNR Foresight exercise, please visit the Fund's websites www.fnr.lu and www.fnrforesight.lu



Annual Accounts 2006



Report of the réviseur d'entreprises

To the Board of Administrators
NATIONAL RESEARCH FUND
Luxembourg, March 16, 2007

Following our appointment by the General Meeting of the Board of Administrators, we have audited the annual accounts of the National Research Fund, which comprise the balance sheet as at December 31, 2006, and the income statement as well as a summary of significant accounting policies and other explanatory notes.

Board of Administrators' responsibility for the annual accounts

The Board of Administrators is responsible for the preparation and fair presentation of these annual accounts in accordance with the Luxembourg legal and regulatory requirements. This responsibility includes: designing, implementing and maintaining internal control relevant to the preparation and fair presentation of annual accounts that are free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

Responsibility of the réviseur d'entreprises

Our responsibility is to express an opinion on these annual accounts based on our audit. We conducted our audit in accordance with International Standards on Auditing as adopted by the Institut des Réviseurs d'Entreprises. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the annual accounts are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the annual accounts. The procedures selected depend on the judgement of the réviseur d'entreprises, including the assessment of the risks of material misstatement of the annual accounts, whether due to fraud or error. In making those risk assessments, the réviseur d'entreprises considers internal control relevant to the entity's preparation and fair presentation of the annual accounts in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control.

An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the Board of Administrators, as well as evaluating the overall presentation of the annual accounts. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the annual accounts give a true and fair view of the financial position of the National Research Fund as of the December 31, 2006 and of its financial performance for the year then ended in accordance with the Luxembourg legal and regulatory requirements.

Tom Pfeiffer
Associé

Ronald Weber
Associé

ABAX Audit
Réviseurs d'Entreprises

Balance Sheet

ASSETS	2006 EUR	2005 EUR
FIXED ASSETS	34,711.93	36,675.95
Intangible assets (note 3)	-	0.04
Tangible assets (note 4)	34,711.93	36,675.91
CURRENT ASSETS	31,756,341.75	23,748,258.06
Other debtors	1,266,941.31	76,554.95
Cash at bank and in hand	30,489,400.44	23,671,703.11
PREPAYMENTS AND ACCRUED INCOME	21,395.17	38,886.33
	31,812,448.85	23,823,820.34
LIABILITIES		
CAPITAL AND RESERVES	4,072,277.90	2,246,885.40
Reserve fund (note 5)	2,246,885.40	1,884,907.99
Surplus/(deficit) for the year	1,825,392.50	361,977.41
CREDITORS	323,975.49	952,983.41
Trade creditors	40,623.06	55,636.76
Tax and social security debt	24,211.46	20,070.08
Other creditors	259,140.97	877,276.57
PREPAYMENTS AND ACCRUED INCOME	27,416,195.46	20,623,951.53
Deferred contributions and funds (note 6)	27,416,195.46	20,623,951.53
	31,812,448.85	23,823,820.34
Contributions and funds (note 6)	2,730,000.00	1,270,000.00
Other operating income (note 7)	26,212.92	-
Other external charges	(1,162,813.26)	(842,901.14)
Staff costs (note 9)	(608,987.98)	(498,671.22)
Value adjustments in respect of tangible and intangible assets (notes 3 and 4)	(20,515.76)	(25,653.06)
OPERATING RESULT	963,895.92	(97,225.42)
Other interests receivable and similar income	865,229.77	460,870.55
Interest payable and similar income	(3,733.19)	(1,667.72)
Financial result	861,496.58	459,202.83
PROFIT AND LOSS ON ORDINARY ACTIVITIES	1,825,392.50	361,977.41
Extraordinary income	-	-
SURPLUS/(DEFICIT) FOR THE YEAR	1,825,392.50	361,977.41

NOTE 1 - GENERAL

The NATIONAL RESEARCH FUND (hereafter called the "FUND") is a public institute created by the law of May 31st, 1999.

The FUND is responsible for:

- receiving, managing and using funds and donations from public or private sources with a view to promoting research and technological development in the public sector at national level, referred to as "R&D", and
- maintaining an ongoing process of reflection in the field of national R&D policy orientation, according to economic data and scientific and technological developments, as well as on the basis of in-depth studies.

The FUND is managed by a Board of Administrators, constituted of representatives of ministries and the private sector, under the trust of the Minister in charge of scientific research and applied research.

The Board of Administrators is assisted by the Scientific Council, which is its consultative organ for scientific matters .

The FUND has its registered office at 6, rue Antoine de Saint-Exupéry L-1017 Luxembourg - Kirchberg.

The accounts of the FUND are held according to the principles and modalities of business accounting.

NOTE 2 – ACCOUNTING PRINCIPLES, RULES AND METHODS

General

The annual accounts are prepared in conformity with generally accepted accounting principles and in agreement with the laws and regulations in force in the Grand-Duchy of Luxembourg .

The main methods used for the establishment of the annual accounts, in conformity with these principles, are described below:

Conversion of foreign currencies

The company maintains its accounting records in EUR and the balance sheet and the profit and loss account are expressed in this currency. The assets and liabilities expressed in another currency are converted into EUR at the prevailing exchange rate of the balance sheet date.

Intangible assets

Intangible assets are recorded at the acquisition cost and depreciated on a straight-line basis over their estimated service life. The value adjustments are calculated linearly during a 3 year period.

Tangible assets

Tangible assets are recorded at purchase price and appear in the balance sheet depreciated from their cumulative value adjustments. The value adjustments are calculated linearly on the basis of the estimated service life of the individual elements constituting the aforementioned assets.

Debtors and Creditors

Debtors are valued in the balance sheet at their lowest nominal value or their estimated realizable value. A value adjustment is carried out when the estimated realizable value is lower than the nominal value. Creditors are value in the balance sheet at their nominal value.

Capital

The Fund was not endowed with any capital at its constitution. The capital will be established by the operating annual profits, as far as the Board of Administrators decides to allocate them to this item.

Prepayment and accrued income Liabilities – Deferred contributions and funds

The allowances received from the State of Luxembourg, according to the mission the Fund was entrusted by the law of May 31st, 1999, are accounted for in prepayment and accrued income - liabilities. Only the operating allowances are included in the result, since the allowances intended for the research programs and for the "accompanying measures" are paid to the beneficiaries on the basis of the falling due provided for in contracts.

NOTE 3 – INTANGIBLE ASSETS

	Patents, licences, etc. EUR
Acquisition cost	
At 1.1.2006	9,114.86
Acquisitions of the financial year	-
At 31.12.2006	9,114.86
Value adjustments	
At 1.1.2006	(9,114.82)
Adjustment of the financial year	(0.04)
At 31.12.2006	(9,114.86)
Net book value at 31.12.2006	-

NOTE 4 – TANGIBLE ASSETS

	Other fixtures and fittings, tools and equipment EUR
Acquisition cost	
At 1.1.2006	122,658.53
Acquisitions of the financial year	18,551.74
At 31.12.2006	141,210.27
Value adjustments	
At 1.1.2006	(85,982.62)
Adjustment of the financial year	(20,515.72)
At 31.12.2006	(106,498.34)
Net book value at 31.12.2006	34,711.93

NOTE 5 – RESERVE FUND

	EUR
At 1.1.2006	1,884,907.99
Movements on the year Allocation of the 2005 profit according to the Board of Administrators meeting of 10/03/2006	361,977.41
At 31.12.2006	2,246,885.40

NOTE 6 – PREPAYMENT AND ACCRUED INCOME - LIABILITIES

During the year 2006, the Fund received the amount of EUR 14,500,000.00 (2005: EUR 13,090,000.00) as subsidy for the year 2006. Considering the transfer of last year of EUR 46,838,900.00, the available amount comes to EUR 61,338,900.00 and concerns the programs, the "mesures d'accompagnement" and the other affectations:

	2006 EUR	2005 EUR
Program "SECOM "	7,500,000.00	6,830,000.00
Program "NANO "	6,700,000.00	6,350,000.00
Program "EAU "	5,000,000.00	4,600,000.00
Program "BIOSAN "	8,500,000.00	7,750,000.00
Program "VIVRE "	11,000,000.00	8,250,000.00
Program "TRASU "	4,500,000.00	3,000,000.00
Program "SECAL "	4,000,000.00	2,300,000.00
Program "INTER "	1,500,000.00	-
Program "ATTRACT "	1,000,000.00	-
"Accompanying measures "	4,540,000.00	3,420,000.00
Operating charges	7,098,900.00	4,368,900.00
	61,338,900.00	46,838,900.00

The available funds have been appropriated as follows:

	EUR
Deferred contributions and funds	
At 1.1.2006	20,623,951.53
Movements on the year	
Funds received	14,500,000.00
Allocation to research programs	(4,091,194.60)
Allocation to the "accompanying measures"	(886,561.47)
Operating adjustments	(2,730,000.00)
At 31.12.2006	27,416,195.46

NOTE 7 – OTHER OPERATING INCOME

The other operating income mainly correspond to a reversal of a provision regarding a grant that was not accepted by the recipient amounting to EUR 25,000.00.

NOTE 8 – TAXATION

In accordance with the article 16 of the law of May, 31, 1999, the Fund has been granted an exemption from taxation by state and local governments except for value added tax and salary taxes.

NOTE 9 – PERSONNEL

	2006	2005
Average number of persons employed during the financial year	10	8

NOTE 10 – TRANSLATION

It should be noted that these annual accounts provided to you in English are a free translation of the French original version which is considered the legally binding document.

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This report is also available online at www.fnr.lu

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