Fonds National de la Recherche Luxembourg

Annual Report 2007

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Recherche Luxembourg

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Summary

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.

How to participate in these programmes?

For the programmes SECOM, NANO, EAU, BIOSAN-PROVIE, VIVRE, TRASU, and SECAL, no further calls for project proposals are foreseen.
For the new thematic CORE programme, which covers priority thematic domains for Luxembourg, and for the ATTRACT programme, calls for proposals are launched annually.
For the INTER programme, calls for proposals are launched regularly.

Further details on the open calls for research projects and evaluation procedures are available at 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.

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 & extension Medical Aspects of Ageing (BIOSAN-PROVIE)	EUR 10,500,000
2002-2011	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 7,700,000
2006-2012	Attract Researchers to Luxembourg - Opportunities for Outstanding Young Researchers in Luxembourg (ATTRACT)	EUR 6,000,000
2008-2010	CORE Thematic Programme 2008 Call: 2009 Call: 2010 Call:	EUR 22,000,000 EUR 28,000,000 EUR 31,000,000
Total	**102 projects financed since 2000**	**EUR 149,900,000**

International Collaboration:

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),
- the European Cooperation in the Field of Scientific and Technical Research (COST),
- three European Research Area Networks: ERA-Age, MATERA and NEURON,
- the International Council for Science (ICSU).

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 framework of scientific research in Luxembourg.

The accompanying measures are split into the following categories:

AM1 - Promotion of Scientific Culture
AM2 - Training and Mobility
  a: Active Participation of Researchers in Scientific Conferences Abroad
  b: Training for Researchers (including summer schools)
  c: Mobility of Researchers
AM3 - Organisation of Scientific Conferences in Luxembourg
AM4 - Scientific Publications Including PhD Theses
AM5 - National Research Coordination
  a: Thematic and Structural Research Platforms
  b: Public Data Access for Research
AM6 - International Collaboration
  a: Preparation of a European Union Research Project
  SF: Science Festival

Annual Awards - Best Scientific Publication(s) of the Year and Best Promotion of Scientific Culture of the Year.

How to apply for these measures?

For the measures AM1, AM2c, AM3 and AM5, the submission deadlines are on 1 April and 1 October of each year. The submission deadline for the Annual Awards is on 1 April of each year. For the remaining measures, deadlines are fixed according to the beginning of the activities.

Further details on applying for the accompanying measures are available on 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 teachers and students.

Promotion of Scientific Culture:

The FNR wishes to strengthen the links between science and society and the general public to feel concerned with science. Promoting scientific culture is mostly targeted to young people, since they will be tomorrow's citizens and researchers.

A key instrument to do so is the ProScience group, which was set up by the Fund in 2007 and regroups all public research actors as well as the Ministry of Education and the Service National de la Jeunesse. This group's objectives are to facilitate the organisation of promotion activities and to increase the research institutions' support of promoting scientific culture. Another key instrument is the Accompanying Measure AM1 for promoting scientific culture. The biannual Science Festival, for instance, is partly funded through this measure.

In addition, the participative and open approach launched through the Foresight Exercise is a way forward to strengthen the links between those who produce scientific research and those who are the users of research.

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.

Foreword Rapid Growth A New Stra

Romain Henrion

Jean-Frank Wagner

Dear Reader,

We are pleased to present you the Annual Report 2007 of the National Research Fund Luxembourg, which aims to provide a general outline of the Fund's main activities in 2007.

Rapid Growth

The National Research Fund took up its work in 1999 and is now quickly approaching its 10th anniversary. In the year 1999, we started our funding work with a small number of multi-annual research programmes that were to be multiplied over the years to reach a total of seven thematic and two structural programmes in 2007. Additionally, our accompanying measures were put into place, so as to complement the multi-annual programmes.

Besides our core business – the funding of public research in Luxembourg – we have contributed to coordinating research activities on the national level, to foster new and strengthen existing competences, in short to do our bit to make the Luxembourg research environment more attractive. Especially, we have encouraged researchers to increase their international visibility, and we will continue to do so.

This short summary of FNR activities just to remind you what the FNR has achieved over the first years and where it is currently standing. Since taking up work in 1999, we believe the FNR has achieved a lot, it has learned a lot and it has built up an impressive pool of knowledge and expertise regarding Luxembourg public research.

The rapid growth and evolution of our young funding agency and the fact that the first of the FNR's multi-annual research programmes are currently coming to an end culminated in the FNR Foresight study, which was carried out in 2006 and 2007 to determine the future thematic orientations of Luxembourg research. The Foresight study, together with the OECD report on the Luxembourg innovation policy as well as the Performance Contracts that have been or are about to be signed with the Government, were for us an opportunity to rethink our position, our work, our strategy.

A New Strategy

This reflection process has brought about several changes in our strategic orientation and influenced the choice of our future funding instruments. We have readjusted our vision and strategy so as to organise our activities around three main objectives:

1. Support researchers to build up scientific quality and excellence
2. Contribute to a favourable research environment
3. Promote scientific culture

To cover and address these three objectives, a range of thematic and structural instruments is currently being put into place.

2008 – Year of Action

Following a year of many changes and transitions, 2008 will be a year of action.

Starting in 2008, the new thematic research programme CORE – which is based on the outcomes of the Foresight exercise and the subsequent Government decision on future national research priorities – will cover all of the FNR's thematic priority domains. CORE's main objective will be to foster scientific quality. Through streamlined and transparent procedures based on a stringent peer-review system and an efficient monitoring system, we hope to contribute to improving the scientific quality and excellence in Luxembourg. In parallel, more specific and severe guidelines will be put into place, so as to avoid further delay when starting projects, to name but one example.

Our ongoing multi-annual research programmes will of course be keeping up their activities until the end of each programme, the last thematic programmes to come to an end being the BIOSAN and VIVRE programmes in 2011.

Additionally, the FNR will continue to address structural issues. Through the ATTRACT programme we will continue to attract outstanding young post-docs to Luxembourg, whereas the INTER programme will continue to provide researchers with a wide range of opportunities for international collaboration. Further ideas for structural instruments are currently being analysed and, if appropriate, will be put into place in due time.

Our Accompanying Measures have also been reformed, based on the experience gained so far and on the survey carried out among applicants in 2007. Through the reform we hope to make the measures even more efficient, transparent and user-friendly.

Furthermore, the Ministry of Research, together with the FNR, is currently preparing a reform of the Bourses de formation-recherche (research grants) as well as the subsequent transfer of the grant scheme to the FNR, probably in 2008. The objective of this reform and transfer is to better promote the training of PhDs and post-docs by adapting the current system to international best practice and by increasing the scope of the system with a strongly increasing number of beneficiaries in the next few years.

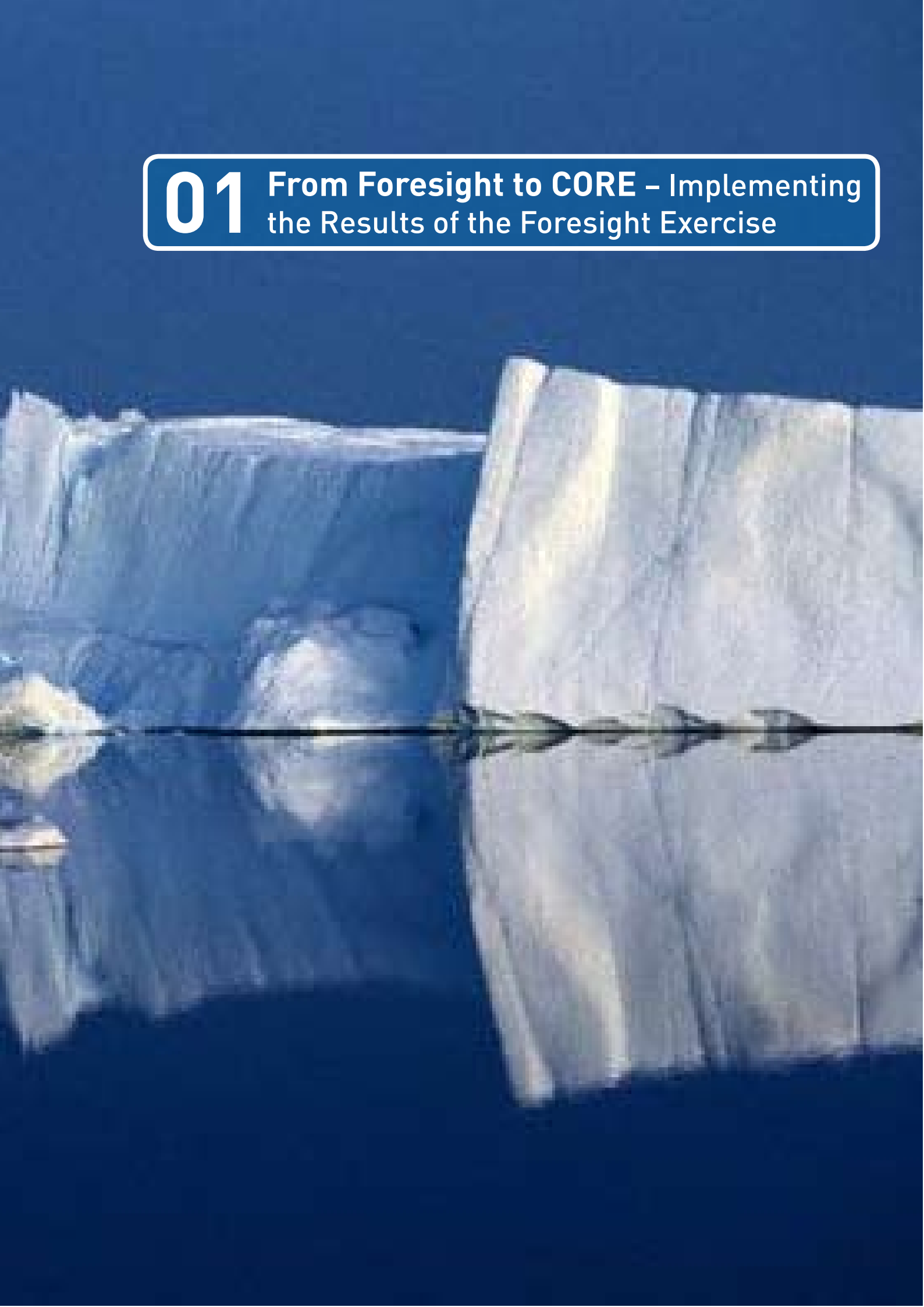
Another priority that has grown in importance is the promotion of scientific culture. Indeed, the need for changing the public's – and above all the young's – ambiguous perception of science is more pressing today than ever before, notably in the light of the growing R&D budgets and the lack of researchers. In this context, the FNR plays a leading role to facilitate the organisation of promotion actions and to lobby in favour of increasing support for the promotion of scientific culture among the Luxembourg research institutions.

Wishing you pleasant reading!

Romain Henrion
President of the Board of Administration

Jean-Frank Wagner
President of the Scientific Council

01 From Foresight to CORE – Implementing the Results of the Foresight Exercise



From Foresight to CORE – Implementing the Results of the F

Implementation Themes Identified Scientific Quality and Colla

In a small country like Luxembourg priority setting is essential. Even though substantial increases in funding have taken place (and will continue to do so) Luxembourg has limited budgets available for research activities. This makes prioritisation even more important, not least to improve the quality of scientific research. The Foresight Exercise, carried out between January 2006 and July 2007, has enabled the definition of national research priorities. This represents a key moment in research policy, since for the first time ever prioritisation of research has taken place. Importantly, this has happened through an interplay between "bottom-up" and "top-down" mechanisms.

Now that the Foresight Exercise has come to an end, efforts are being put into implementing its results. The direct outcome of the Foresight Exercise and the subsequent decision by the Government to define national research priorities is the creation of a new thematic research programme of the FNR called CORE. The prime objective of CORE is to foster scientific quality in Luxembourg public research in selected research areas. CORE projects should build the residing capacity of expertise in these areas, thus ensuring long-term socio-economic benefits.

Implementation

The Foresight Exercise has created a clear output (this is not always the case with foresight exercises in other countries, many of which have no direct outputs). More so, the translation from the Foresight Exercise into the CORE programme has been a relatively short process. During the policy process, the themes identified through the Foresight Exercise have not been modified to a great extent, even though some priorities have been sub-prioritised into "essential" and "necessary" priorities.

Now, the challenge lies in implementing these future visions, that is turning discourse into practice. This is a very important step - from thinking about the future to writing about and deciding upon the future.

Themes Identified

The themes identified through the Foresight Exercise and implemented through the CORE programme should all be able to tackle the major challenges that the Luxembourg environment, society and economy faces. The priorities identified should allow sufficient flexibility for researchers to define their own topic of interest. It is, after all, scientists themselves who should develop breakthrough ideas. To put it this way: CORE has set the frame (the "playing field") within which researchers can be creative.

Within the framework of the Foresight results and the Government decision on national research priorities, the following research priorities will be opened for financial support within the 2008 call of the CORE programme. For the calls in 2009 and 2010, the FNR intends to continue the support of these research priorities and if necessary the FNR will widen the range of targeted research priorities.

Innovation in Services	Development and Performance of the Financial Systems
	Business Service Design
	Information Security and Trust Management
	High Performance Telecommunication Networks
Sustainable Resource Management in Luxembourg	Sustainable management of water resources
	Sustainable Uses and Sources of Energy
New Functional and Intelligent Materials and Surfaces, and New Sensing Applications	New functional and intelligent materials and surfaces
Biomedical Sciences/ Regulation of Chronic, Degenerative and Infectious Diseases	Regenerative Medicine in Age-related Diseases
	Translational Biomedical Research
Labour market, educational requirements and social protection	Challenges for the Educational System, Labour Market, Social Protection Including Territorial Aspects
Identities, Diversity and Integration	Identities, Diversity and Integration

With the clear definition of specific themes in which to carry out research, other important aspects have also been clarified, most notably that the FNR's main interest lies in fostering scientific quality within the themes identified.

Scientific Quality and Collaborations

The key rationale behind the CORE programme is the following one: improving the quality of scientific research, making Luxembourg's research environment more attractive, as well as fostering international collaborations. The FNR is putting emphasis on the output of research projects. For this reason, some common indicators will be used when assessing the training of people (be it PhD students or existing staff members), publications of scientific results, and/or the valorisation of intellectual property (e.g. patents).

The CORE programme should enable new research projects to develop but also to extend and build upon past projects. This makes collaborations between various researchers, institutions and universities a very important aspect. Yet, scientific collaboration is not something tangible. For instance, it can be difficult to assess the usefulness of data produced and exchanged with partners. In most cases, however, collaborations enable the strengthening and improvement of research projects and research ideas. Thus, what the FNR expects are clear and effective collaborations, with tangible funding from partners.

From Foresight to CORE – Implementing the Results of the F

Networking and Wider Context Outstanding Issues

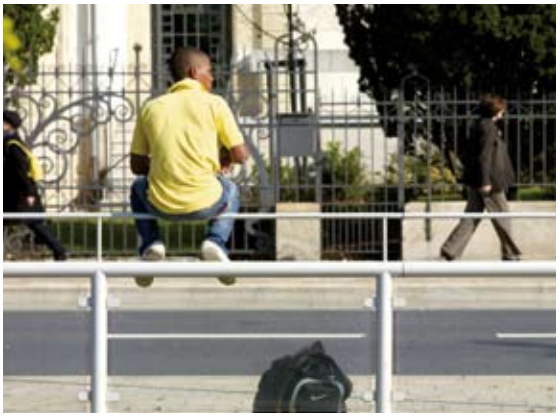
Networking and Wider Context

Apart from the themes identified, the Foresight Exercise has also helped to "wire-up" the national innovation system. Thus, an important outcome of the Foresight Exercise is all the networking activities that have taken place between research actors. The platforms that are being (or will be) set up and the creation of Les Humanités Associées (a network for young researchers in the social sciences and humanities) are some examples worth to mention.

Importantly, the CORE programme should be seen in relation to the FNR's wider strategy - the current transformation of the Bourses de formation-recherche (BFR) into the Aides à la formation-recherche (AFR), the INTER programme, the various Accompanying Measures, etc. It is through the combined efforts of these instruments, that the FNR aims to set out a robust science policy.

Outstanding Issues

The FNR has recognised that the Foresight Exercise has not been perfect; adjustments have to be made and mistakes in the current approach have to be addressed in the next exercise(s).
Thus, the Foresight Exercise is due to continue in the future, in some guise or form. While there won't probably be any "big" – that is, all-encompassing – exercise, we might see the emergence of foresight exercises targeted to specific domains. Hence, there will be more of a "roulement" of smaller foresight exercises, which will allow for a more flexible approach.



oresight Exercise

Today, around 20% of the total public research spending is destined to fund research that takes place within defined priority domains. Conversely, mechanisms to steer the remainder of public research money towards the priority domains have currently not been elaborated. It thus remains to be seen to what extent the definition of research priorities will have a leverage effect on other (non-prioritised) research funding and if, in the future, a greater fraction of public research money will be prioritised.

Further details on the FNR Foresight and the new CORE thematic programme are available on www.fnrforesight.lu and www.fnr.lu.

02 Strategy of the FNR

Strategy of the FNR Supporting Researchers to Build up Scient
Improving the Research Environment Promoting Scientific Cul

The FNR sees itself as one of the main drivers of high quality research in Luxembourg. In order to fulfil this role, it aims to steer public research through its research programmes and tackle structural issues through its various other instruments.

Since its creation in 1999, the FNR has been developing its strategy and articulating its vision of Luxembourg research.

Two key questions drive the FNR's philosophy:

- 1. What is, and should be, the aim of scientific research?
- 2. How can these aims be attained?

The aims and objectives of scientific research are manifold. Research should address the challenges and problems a society faces. In general terms, research activities should be in line with the goals of the Lisbon agenda, that is turning Europe into the world's most competitive knowledge economy as well as improving its social and environmental features. The future of Europe lies in making this transition towards a knowledge economy.

At the same time, the impact of scientific research should be maximised. This calls for selecting priorities in research and striving for high quality. Thus, the FNR expects researchers in Luxembourg to increasingly meet international standards, since they are the key to guarantee quality.

For the FNR, the chief role of public sector research is to provide valuable knowledge and guidance in relation to the aspects that are important for Luxembourg's economy, society and its environment. Unfortunately, however, a large number of decision makers and stakeholders only seem to value application and market-driven research and tend to underestimate the societal benefits of research in the social sciences and humanities. Yet, if Luxembourg wants to successfully achieve its transition to a knowledge society and address its future challenges, it is of utmost importance to strengthen research in the so-called soft sciences and not only focus on research with a direct economic impact. In other words, the FNR wants to take a balanced approach to research policy, encouraging research that addresses the challenges of Luxembourg's economy and its society and its environment.

The objective of the FNR is thus threefold: to invest in human resources, in institutions and in knowledge. Hence, the FNR's strategy pursues three main objectives:

1. Supporting Researchers to Build up Scientific Quality and Excellence

Excellent researchers are the cornerstone of a productive research landscape. The FNR wants to foster scientific quality by:

- implementing a research programme (CORE programme) which covers most of the research domains identified in the Foresight Exercise, with streamlined procedures based on a stringent peer-review system with scientific quality as the prime criterion;
- attracting outstanding young post-docs to Luxembourg via the ATTRACT programme.
- improve young researchers' training conditions and enhance the career development of researchers through the reformed AFR grants (Aides à la formation-recherche).

2. Improving the Research Environment

The FNR aims to improve Luxembourg's research environment and institutional framework through:

- developing a strategic orientation for the INTER programme, thus providing researchers with a wide range of opportunities for international collaborations;
- improving existing and developing new Accompanying Measures;
- improving networking among researchers;
- assuring the valorisation of research results;
- improving access to data.

3. Promoting Scientific Culture

The FNR also wishes to strengthen the links between science and society and the general public to feel concerned with science. Promoting scientific culture is mostly targeted to young people, since they will be tomorrow's citizens and researchers.

A key instrument to do so is the ProScience group, which was set up by the Fund in 2007 and regroups all public research actors as well as the Ministry of Education and the Service National de la Jeunesse. This group's objectives are to facilitate the organisation of promotion activities and to increase the research institutions' support of promoting scientific culture. Another key instrument is the Accompanying Measure AM1 for promoting scientific culture. The biannual Science Festival, for instance, is partly funded through this measure.

In addition, the participative and open approach launched through the Foresight Exercise is a way forward to strengthen the links between those who produce scientific research and those who are the users of research.

In parallel to these objectives, the FNR also aspires to strengthen the collaboration and coordination between all the stakeholders in the innovation system:

- the Ministry of Culture, Higher Education and Research;
- the Ministry of Economy;
- Luxinnovation;
- the public research institutions;
- other organisations from the public and private sector.

While developing, implementing and assessing its policy tools, the FNR aims to be transparent, efficient, professional and accountable.

03 Multi-annual Research Programmes

Success Stories

Design, Growth and Properties of Boron-based Thin Films for Electronics and Nanosized Electronics

The Science and Analysis of Materials Department (SAM) at the CRP Gabriel Lippmann is currently undertaking a three-year project within the scope of the INTER Programme entitled 'Design, Growth and Properties of Boron-based Thin Films for Electronics and Nanosized Electronics'. The project, headed by Henri-Noël Migeon and Nathalie Valle, is being run in collaboration with the University of Texas in Austin and aims to perfect the technique of growing, analysing, and studying the electric properties of nano-layers in boron carbonitride (BCN) ultra-thin films. The FNR funds the Luxembourg part of this collaborative project, while the U.S. National Science Foundation funds the U.S. part.

It is hard to comprehend the size of the thin films the project is studying. A nanometre is a 1,000th of a micrometer, which in turn is 1,000th of a millimetre, in other words there is a factor of one million between a millimetre and a nanometre (the same factor between a millimetre and a kilometre). The films, which the project is studying, are on average five nanometres (nano-layers) thick.

The BCN films have to be applied in the Integrated Circuit (IC) fabrication by the semi-conductor industry (although these films can be used by high precision toolmakers thanks to their good mechanical properties). The most advanced IC technologies use copper to connect millions of silicon-based components, but the copper can easily diffuse into other materials, especially to the porous adjacent films. So barrier films are required to minimise the IC damage by copper diffusion. BCN films are good candidates to replace the currently used SiCN barrier films, thanks not only to their low permittivity value but also to their better adhesion both with copper and with porous dielectric films.

The largest part of this research work at SAM concerns the characterisation of BCN films using a high performance technique called Secondary Ion Mass Spectrometry. This is a highly complex and specialised subject, due mainly to the small size of the films. In order to be able to determine the composition of the films they have to first perfect the technique of analysis. They are part-way through doing this by using a technique which they developed and patented in the laboratory (Caesium Deposition for Analytical Purposes), whereby they inject caesium onto the BCN surface in order to reach 100% ionisation efficiency, which then has to be quantitative. This technique works well with electronegative elements such as carbon and nitrogen.

One of the most challenging aspects at the start of the project was to find three PhD students with the competence to work in this field. As Migeon says, 'It is becoming more and more difficult to find top students specialising in this field, even for universities like Oxford. We sometimes have to abandon projects because we can't find the right people to work with'. Luckily for Migeon they were able to find the best people relatively quickly and they currently have two of the PhD students working in Texas and one at SAM in Luxembourg.

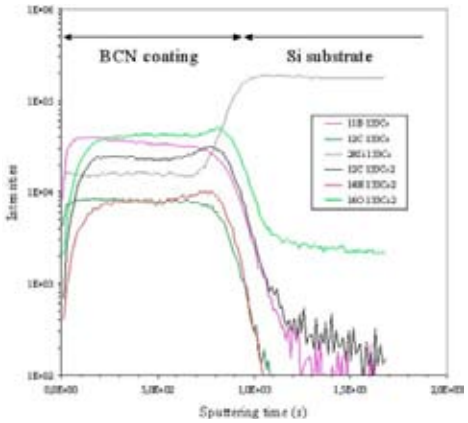


Figure 1: In-depth analysis of BCN coating on silicon substrate.

The synergy between the University of Texas and SAM is paramount to this project as they are both experts in different aspects; Texas has highly specialised equipment CVD (Chemical Vapour Deposition) from which they can prepare the material for analysis and SAM has cutting-edge technology and proficiency in the characterisation of surfaces. SAM is also in the process of perfecting a technique called PVD (Physical Vapour Deposition), which will allow the clinic to modify different compositions of the layers. At present it is very much in the preliminary stages and although they have managed to perfect the technique using thicker film (approximately 20 nm) they are still adapting the technique for the thinner 5nm film where it will remain stable enough to work with.

The quantitative measure of these layers (films) is not done to this scale elsewhere at the present time and although there is much research undertaken in the semi-conductor industry world-wide, using mainly silicon carbonitride (SiCN), SAM hopes to be the first laboratory to perfect the technique of using BCN film.

This is not the first SAM project which the FNR has supported (in fact they are also currently running a project under the TRASU and NANO programmes) but their contribution to the development of this new technology is unquestionable. Some of the equipment can only be found elsewhere in places like Harvard and Oxford University and NASA. This is invaluable to the development of nano-analysis in Luxembourg as without these highly-sophisticated tools advanced research could not be undertaken.

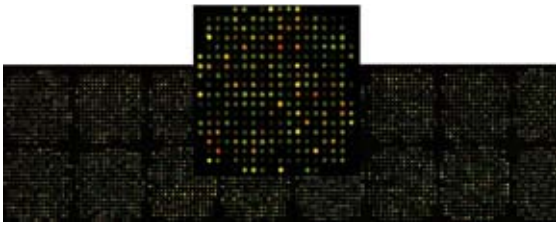
***CMS (cation mass spectrometer)**, a new powerful technique, designed by the SAM department, for quantitative characterisations.*

Success Stories

DNA Chips - Creation of a New Competence in Bio-Informatics and of a Technical Platform for Large-Scale Genomic Analysis

One of the first projects funded by the FNR was the "Creation of a New Competence in Bio-Informatics and of a Technical Platform for Large-Scale Genomic Analysis". Started in early 2002, within the BIOSAN programme, the Microarray Centre team (headed by Evelyne Friederich and coordinated by Laurent Vallar) has spent the last six years building expertise in microarray technology to advance scientific research in areas as diverse as health, food tracing and environmental issues. The microarray centre provides support to academic and industrial laboratories from Luxembourg and the surrounding regions.

The advent of the microarray has led to a major methodological advance in scientific research and allows scientists to analyse the expression of thousands of genes quickly and efficiently in a single experiment; before the introduction of the microarray, traditional methods meant that researchers were only able to study a relatively small number of genes at any one time. This technology gives the scientist the necessary tools to understand the fundamental aspects of development and to examine underlying causes of many human diseases, such as cancer, immunological disorders, cardio-vascular and neuro-degenerative diseases. Although still in its infancy, microarray technology is a significant step towards understanding and cataloguing the human genome.



Retchip microarrays were designed and produced by the Microarray Center. These are thematic arrays representing a limited number of genes involved in specific biological functions (e.g. biology and diseases of the retina for Retchip).

The first part of the project aimed at setting up the microarray technology and to gather a team of experts who could work together in this highly specialised field. The grant enabled them to purchase expensive equipment (€ 120,000 for one of the machines) and gave them time to develop the necessary expertise. The project was conducted in partnership with the Santec department of the CRP Henri Tudor for the development of specific software packages (ImageQualityQuantificator) designed for quality assessment of microarray images for further analysis. With thousands of data spots being on each microarray sampling, this is an important part of the microarray analysis process.

Particularly useful in the oncology field, the initial research aim of the project was to gain better understanding of a key step of tumour progression through which epithelial cancer cells become invasive, and give rise to life threatening secondary tumours; the metastases. Using a specific cellular model developed in Friederich's lab, the Microarray Centre mapped the genes expressed at different time points of this process and gathered important new information on the underlying molecular mechanisms.

Microarray genome analysis also makes it possible to look at the genetic DNA makeup of a tumour, as well as the expression of proteins within the tumour cell and gain a full picture of what is going wrong. In the future this approach could lead to recognising the potential outcome of a tumour, i.e. how the tumour is at the present time and a prognosis of how it could develop in the future; thereby allowing tailoring a more personalised and well adapted treatment for cancer patients.

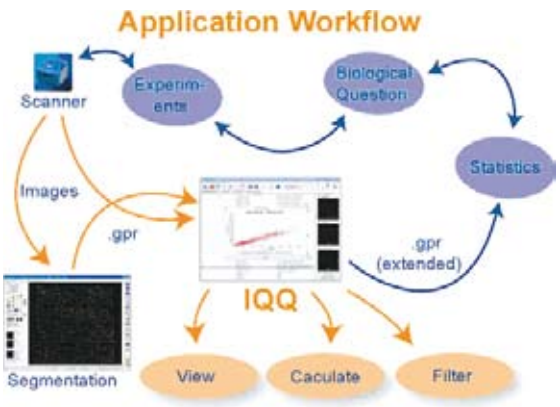
ps - Creation of a New Competence
e Genomic Analysis

The Microarray Centre team collaborated with the Institut de Génétique, Biologie Moléculaire et Cellulaire, Strasbourg, and within this cooperation developed several bioinformatics tools for the design of thematic DNA microarrays that are produced by the team. Competences gained within this cooperation were applied to one of the projects the research team have participated in on a European level; the 2006 European Integrated project Evi-Genoret, where approximately 60 laboratories from 12 countries were involved in studying the retina. Based on a list of about 2,000 genes that are important in the degeneration of the retina as identified by members of the Evi-Genoret consortium, the Microarray Centre developed and produced a microarray (Retchip) that can investigate key transitional changes in retinopathies – vision-related diseases. This chip is now being used by research laboratories throughout Europe to understand and study diseases of the retina.

"Without the FNR it would not have been possible to bring this advanced technology to Luxembourg," says Vallar. Friederich added, "The grant from the FNR was extremely important, as we gained the skills and competence in this field and learnt how it could evolve over time." The goal of the team is to be the national platform for microarray in Luxembourg; they already work on diagnostic analysis with doctors from the Centre Hospitalier, environmental scientists from Gabriel Lippmann and researchers from the University. Having such advanced technology also puts Luxembourg firmly on the map as a serious player in the research and technology field.

The microarray chip heralds a huge advancement on the technology of scientific and medical research, which to most people conjures up an image of a lone scientist peering down a microscope; with the microarray, data can be accessed and analysed by multiple people at any one time and it can also be stored and retrieved at a later stage, without the possibility of accidental or age-related damage.

The project came to an end at the beginning of 2007 and the Microarray Centre team are now running primarily under the auspices of the CRP Santé.



Success Stories

Mobile Expert & Networking System for Systematic Analysis of Nutritional-based Allergies (MENSSANA)

Faced with a row of brightly-packaged, mouth-watering food do you really know what you will be digesting? Look at the ingredients and you can probably distinguish only a handful. For some people, this can be a matter of life or death. Food allergy is on the rise and, while there are many studies being undertaken to find the reasons, the MENSSANA project is offering an alternative solution.

This ongoing project, started in 2004 under the SECAL programme banner, is headed by Norbert Rösch, who has been developing with his team a technology-based information system (the MENSSANA Electronic Information System for Allergy) designed to interact between the patient and their food consumption, and provide a complete picture of the patient's health for their physician.

The system works in two parts. The patient carries a Personal Allergy Assistant (PAA), which is a mobile pocket computer, equipped with a personalised electronic food diary and a built-in barcode scanner. When the patient consumes something (or wants to find out the ingredients in a food package), he simply scans the package's barcode, the information is immediately processed by the PAA and he is informed whether or not the food is safe to eat (the research team has also created special barcodes for items such as fruit and vegetables). He can also store in the PAA information such as illness, reaction after food consumption and pharmaceuticals. Once or twice a week the patient synchronises his diary remotely with the main database held by his physician and all the new information is updated and automatically catalogued on his health record. His doctor then has a complete record of his patient's health and whether he has reacted to a particular food, and can adapt his medication or treatment accordingly.

This sounds like an ingeniously simple design and it is; although unquestionably complicated in its innovation. For instance it took fifteen months of labour-intensive work to create the computer programme, which would analyse ingredient lists of food products in such a way that derivatives of basic food could be easily identifiable. Creating a PAA®, which would be convenient and simple to use, has also been a challenge and the device has evolved several times to the present system of a Smart phone, which allows the data to be scanned quickly and then synchronised. However the team are currently working on a software package which will eventually allow the patient to use their own mobile phone.

Personal Allergy Assistant

Expert & Networking System
SANA)

One of the most challenging aspects of the project has been collecting data about food products. Although food producers are required by law to print ingredient lists on the package of food products, they are not obligated to declare ingredient lists to any governmental or private institution for consumer information or protection. This fact led the team to create the WikiFood initiative. Wikifood (www.wikifood.lu) is a database-centred website that holds information on the ingredients of thousands of food products. It can be accessed, and added to, by any member of the public who are interested in knowing what they are consuming. At present there are approximately 13,000 products listed on the site (with more added every day) but the team aim to have at least 30,000 to create a credible information centre and will be working more closely with major food producers in the coming months to achieve this. The Wikifood initiative was launched, with tremendous response, September 2006 at the AEDA-Allergy Congress in Wiesbaden and approximately 120 articles were written about it throughout Europe.

The research team is now ready to undertake a clinical trial and will work with 100 patients and their physicians, in particular Dr Feidert from the Centre Hospitalier, to see how the system functions in day-to-day life, and also whether it makes a significant difference to their health, quality of life and treatment rather than using the traditional method of allergy assessment, e.g. hand-written diaries and more regular doctor's visits. The trial will run for twelve months to take into account seasonal changes and other allergies, such as hay fever.

There has already been a significant amount of public interest in the project from companies such as Cactus, whose support has been invaluable in gathering product information from food producers, and RTL, who has made a short information film about the project. The FNR has strongly supported the project by bringing in experts to give advice and they have been open to the different directions the project has led to. MENSSANA has recently received additional funds to continue work on the project and to build up a virtual community for patients, food producers and health professionals.

Success Stories

SUGAR – Monitoring of New Forms of Electronic Cooperation via Graphical Tools for Operational Analysis

The SUGAR project, headed by Benoît Otjacques and which ended in December 2007, has spent the past two years studying and designing a revolutionary new visual method of analysing computer data. The two main aims of the CRP Gabriel Lippmann team were to first imagine a completely new method of graphics, which could be simply interpreted but could potentially hold vast amounts of data for analysis; and then to develop a software prototype to implement them.

Collecting and analysing data is paramount to the successful running of any organisation and while collecting the data is simple enough, analysing it in a meaningful way is time-consuming, laborious work; primarily because the information is presented in a complex, two-dimensional way. We have all been faced at some point with a vast spreadsheet of data, containing row upon row of figures, which has taken hours of intricate analysis to interpret. Information Visualisation looks at how information (for instance a company budget or annual schedule) can be presented in an easy, understandable manner; working with layers of shapes and colours, which are more easily processed by the cognitive part of the human brain. As Otjacques says, "It is well known that a picture is worth a thousand words but most reports are still presented as text-based documents."

Working on this premise the SUGAR team have developed a new technique called ellimap, which aims to visualise weighted hierarchies, using layers of different sized and coloured ellipsis, each one representing a piece of data. Ellipses are among the most easily understandable shapes for the human brain and what is interesting with the ellimap technique is that you can immediately get an overview of the data you are looking at.

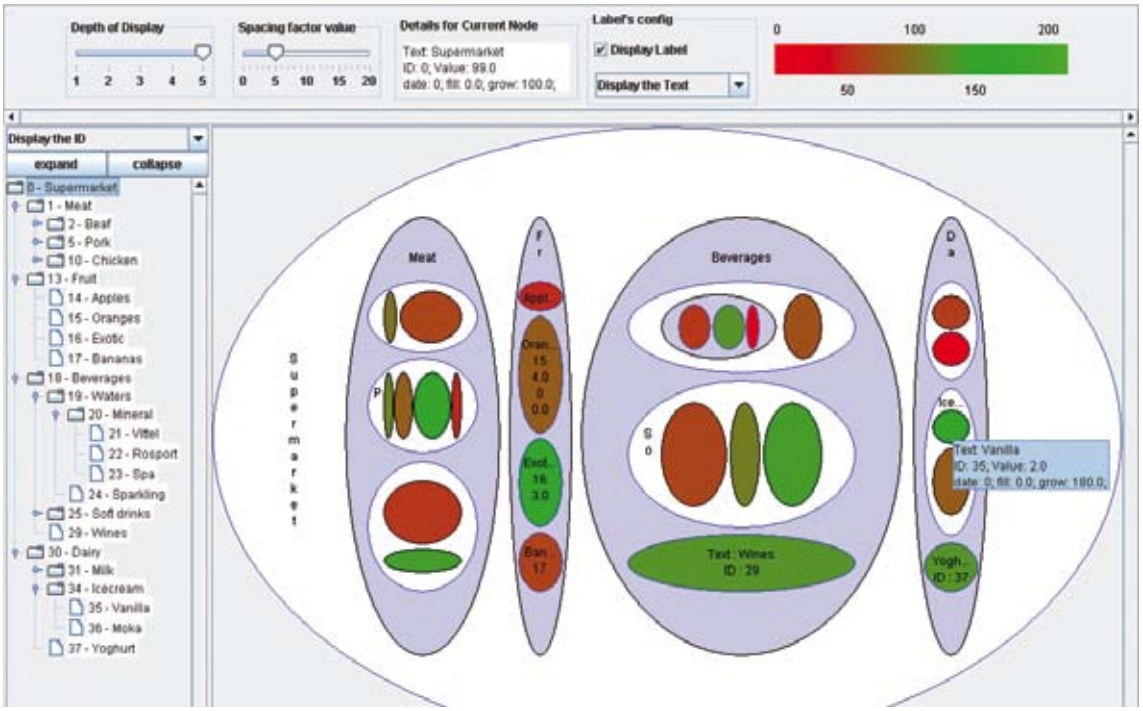
Say for instance you wanted to analyse the stock in a supermarket, your ellimap would show a large outer ellipsis (A) which represented the supermarket itself and inside there would be a number of slightly smaller ellipses (B) to represent the different departments (e.g. meat, fruit, dairy etc.). The size and shape of these ellipses would represent the percentage of takings that department generated (e.g. meat 20% would be round, fruit 10% would be thin). Inside the B ellipses are smaller ellipses (C) that represent the type of food (e.g. pork, beef, chicken etc.), again with differing shapes and sizes according to their contribution. The ellipses (D) inside the C ellipses represent the products (e.g. chicken legs, whole chicken, free-range etc.), again with different shapes and sizes but also coloured in a sliding scale from red to green depending on their popularity. If you hover over an ellipsis with your mouse you can see the information relating to that particular ellipsis (e.g. product name, price, amount sold). If you click into an ellipsis you will go into the next layer that you can study in more detail.

Data is still imputed in the traditional spreadsheet manner but the software behind the ellimap converts the data into readable graphics. You also have the possibility of mining out information you don't need or changing the look of the ellimap depending on how closely you wish to study it.

It is a simple idea (and once you have mastered the technique of it you will be able to search through data quickly and efficiently) but as with any new technique it took months of intensive work to achieve; particularly when developing the software. The team started with three possible ideas of how the graphics could look but after a few months decided to focus on the ellimap, which was unfortunately the most complex software to develop. During the initial stages of the development they worked in cooperation with SICOV (a FNR funded project developing virtual platforms for organisations) and were able to use the data from some of the platforms as a basis from which to develop the visualisation technique, giving them more time to focus on the visualisation issues. They also dedicated a large part of the research project to evaluating how people respond to ellimap by setting up a specific testing environment called "Festiv", from which they could carry out controlled experiments. The results from these tests were extremely positive not just about the overall look of the visuals but also the ease at which data can be processed and analysed.

Although the FNR project is now completed, the team is using this technique to work on a new project with the city of Esch-sur-Alzette for visualising administrative data, which will give them the chance to refine the programme. They are also working on a proposal with the Luxembourg School of Finance to develop similar techniques for visualising financial data and will submit the proposal to the next call of the FNR CORE programme.

Otjacques is clear about the contribution from the FNR, "because of the unusual nature of our research, which is not really known, it is extremely difficult to obtain funding from outside sources. How can you go to a company and say you want to develop innovative graphics that you can't even sketch! The FNR have played a major role in the development of this technique by funding during the more fundamental part of the research process."



Success Stories

The Luxembourg School System Tomorrow

Education, one of the fundamental necessities of any society, is a highly complex and emotive subject. How do you get the best out of a child, while at the same time having structure and coherence in the teaching method?

This question has been the priority of Romain Martin since he began work on the VIVRE Project: The Luxembourg School System Tomorrow, at the beginning of 2004. The main aim of the research was to gather cohesive information about the strengths and weaknesses of the school system at present and to look at other educational systems throughout the world in order to ascertain whether a fundamentally different system could function successfully in Luxembourg. The study will be used as a foundation for opening up discussions on a national basis with governmental bodies, including the Education Authority and, while it is still too early to draw concrete conclusions, present them with different scenarios of how the education system could be changed.

The research was broken into three steps: part 1, to analyse data from existing databases, mainly the International PISA studies of 2000 and 2003, alongside the last-known Luxembourg school system database MAGRIP from 1968; part 2, to collect views about the current and potential future functioning and structure of the Luxembourg school system within focus groups made up of collective bodies of the education system; and part 3, to conduct an in-depth study amongst pupils, parents and teachers to ascertain their relationship towards education as a whole.

Most important in the first step of the project was to fully understand how the school system works today and compare it with developments in other countries, in particular Canada and Scandinavia who have a radically different school system from Luxembourg and who achieve a continually high performance in the PISA studies. In those countries schooling is adapted around the individual child and his or her learning proficiency (e.g. if they excel in mathematics they will automatically advance to a higher level in that particular subject), rather than fitting the child into standardised groups which is how the school system in Luxembourg functions. At present if a child does badly in one subject (e.g. German language), they will automatically be held back and asked to repeat a class regardless of how they are doing with other subjects. This can be very demotivating, especially if the child is excelling in a different subject and is perhaps struggling with German due to the fact that his/her mother-tongue is English or Portuguese.

'One of our main problems is that we have a very heterogeneous population, which is a big challenge for the school system to deal with. We should be the champions of managing heterogeneity but we really are not as we are functioning still with the mechanics of the past; which is to try and get out of this heterogeneity, homogeneous groups,' explains Martin.

What came out of this part of the study was that the education system has not changed fundamentally since the last data study in 1968, even though the population has altered significantly.

The difficulty at the moment is to imagine how a completely different school system could function in Luxembourg. Although the general consensus points towards a new method (the disappointing results from the PISA studies have underlined this and indeed the study from 2000 was one of the benchmarks for the necessity of the research programme), it is fundamental to be sure the changes will work better for Luxembourg's diverse population and not just revolutionise for the sake of it. What the research project has done is gather together the information and tools necessary to open discussions and look at the possibilities.

But already there are changes on the horizon. A new, experimental primary school (www.eisschoul.lu) is to be opened later this year, and will be part run by the Luxembourg University. It has been inspired partially by the results from the research project and will include areas such as abandoning class repeating and looking at different ways to manage our diverse population. This is a very important step in being able to research and evaluate how a different school system could function in Luxembourg and, interestingly enough, the demand from parents to place their children there is over five times greater than the 100 pupil limit for the first year.

The contribution from the FNR has been more than financial and one of the most important points Martin found was their flexibility, 'There is a quality control based on your reports but if you feel that the project is developing in a new direction, they will listen to your arguments and, if they feel it is important to the research, will allow you to adapt to your new findings. That is very, very helpful as you never know where you'll end up when you start a three-year project.

While it is clear that we are still a long way from implementing the ultimate school system for Luxembourg, without this research there would be no basis to work from and no possible scenarios for understanding the necessity for change. Now that the groundwork has been done the team will continue working on the research with the Ministry of Education to assist and guide them in making informed decisions to finding the correct solution to the situation and there will be a more coherent and continual system of data gathering in order to build up a fuller picture of how the education system is functioning.

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.

In total, the Fund has financed 11 projects in the framework of the SECOM programme.

Ongoing SECOM Projects:

Project Code	Title	Contact	Coordinating Institution(s)	Contracting Partner(s)	Starting Date	Closing Date	FNR Contribution (in EUR)
FNR/04/01/02	**Towards a Secured, Efficient Platform for the e-Commerce of Personalised Health Products (RESIST)**	Nicolas Guelfi	University of Luxembourg	CRP Henri Tudor	01.05.2006	30.04.2008	399,147
FNR/04/01/03	**Security Identity Management (SIM)**	Christophe Incoul Christophe Feltus	CRP Henri Tudor	University of Luxembourg	01.08.2005	30.06.2008	540,043
FNR/04/01/05	**Techniques for Secure Grid and Ad-Hoc Networks (TeSeGrAd)**	Franck Leprévost	University of Luxembourg		01.06.2005	30.06.2008	151,378
FNR/05/01/03	**An incremental Decision Support System for IT and Operational Risk Analysis within Evolving Organisations and IT Systems (RiskDESANA)**	André Rifaut	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	30.06.2008	197,764
						TOTAL:	1,430,738

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/01/01/05	**Creation of an NICT System Faciliting the Electronic Business of Virtual Organisations (SICOV)**	Fernand Feltz Guy Simon	CRP Gabriel Lippmann	CEPS/INSTEAD	01.11.2001	31.12.2007	1,512,150
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/01/01/07	**e-Business Framework for an Efficient Capture and Implementation of End-to-End Transactions (EFFICIENT)**	Eric Dubois Sophie Ramel	CRP Henri Tudor	University of Luxembourg CRP Gabriel Lippmann	01.11.2001	31.12.2007	1,499,978
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
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	31.12.2007	310,968
						TOTAL:	5,805,465

For a detailed summary of each project as well as other information, please refer to www.fnr.lu.

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.

In total, the Fund has financed 6 projects in the framework of the NANO programme.

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	**Exploring Detection Limits of Advanced SIMS Technology in Cellular and Sub-Cellular Biological Systems**	Claude P. Muller	CRP Santé Laboratoire National de Santé	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 Jean-Nicolas Audinot Lucien Hoffmann	CRP Gabriel Lippmann	University of Luxembourg	01.04.2002	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)**	Gast 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

For a detailed summary of each project as well as other information, please refer to www.fnr.lu.

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.

The EAU programme came to and end on 31 December 2007. In total, the Fund has financed 9 projects in the framework of the programme.

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 Lacustrian 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		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	31.08.2005	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
FNR/01/03/07	**Modelling of a Sewage Network: Contribution to the Management of Pollution Risks at the Haute-Sûre Drinking Water Reservoir (RESEAUSURE)**	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	495,847
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	01.07.2006	31.12.2006	195,000
						TOTAL:	4,647,789

For a detailed summary of each project as well as other information, please refer to www.fnr.lu.

BIOSAN-PROVIE Programme

Biotechnology and Health & Extension Medical Aspects of Ageing

Duration: 2000-2011
Total Budget: EUR 10,500,000
1st BIOSAN Call in 2001: 7 Projects Selected
1st PROVIE Call in 2003: 4 Projects Selected
2nd PROVIE Call in 2006: 3 Projects Selected
2nd BIOSAN Call in 2007: 6 Projects Selected

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.

The aim of the extension "Medical Aspects of Ageing" is to study the epidemiological, psychosocial and biological aspects of the neurodegenerative diseases of old age in Luxembourg and to 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 is 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 February 2007, the Fund launched a 2nd call for the BIOSAN Programme. 6 projects were selected among 14 proposals submitted.

In total, the Fund has thus financed 20 projects in the framework of the BIOSAN-PROVIE programme.

Ongoing BIOSAN-PROVIE 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**	Jos Even	Laboratoire National de Santé CRP Santé	University of Luxembourg	01.11.2001	28.02.2009	1,043,603
FNR/01/04/09	**Creation of a New Competence in Bio-Informatics and of a Technological Platform for Large-scale Genomic Analysis (DNA Chips)**	Laurent Vallar Evelyne Friederich	CRP Santé	University of Luxembourg CRP Henri Tudor	01.02.2002	31.01.2009	1,400,000
FNR/01/04/11	**Vaccines against Low Molecular Antigens: Novel Strategies and Application**	Claude P. Muller	CRP Santé Laboratoire National de Santé		01.06.2002	31.12.2008	1,546,503
FNR/03/04/02	**Prospective Evaluation of Neuropsychological and Biological Characteristics of Mild Cognitive Impairment and of Associated Sub-Clinical Health Problems**	Magali Perquin	CRP Santé	University of Luxembourg	01.07.2005	31.12.2009	1,092,491
FNR/06/04/01	**Microglial Activation and Differentiation: Analysis of Signal Transduction and Phenotype Acquisition**	Paul Heuschling	University of Luxembourg	CRP Gabriel Lippmann CRP Santé	01.02.2007	31.01.2009	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 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 J. Diederich	Centre Hospitalier de Luxembourg	CRP Santé	01.01.2007	31.12.2008	249,000
FNR/ BIOSAN/07/01	**Genetic Variants of the MMP-9 Gene in Patients with Acute Myocardial Infection**	Daniel R. Wagner	CRP Santé		01.09.2007	31.08.2009	397,500
FNR/ BIOSAN/07/03	**Exercicse Training and Ventricular Remodeling in the Mouse: Effects of Adenosine and Matrix Metalloproteinases**	Daniel R. Wagner	CRP Santé		01.11.2007	31.10.2009	127,500
FNR/ BIOSAN/07/12	**Proteo-Genomics Approaches to Assess Molecular Circuits of Epithelial Cancer Invasion: Implication of MicroRNAs**	Evelyne Friederich	University of Luxembourg	CRP Santé CRP Gabriel Lippmann	01.01.2008	31.12.2009	372,500
FNR/ BIOSAN/07/19	**Constrained peptides as Small Antagonists of the Chemokine Receptor CXCR4**	Sabrina Deroo	CRP Santé		01.09.2007	31.08.2009	297,497
FNR/ BIOSAN/07/21	**Investigation of the Role(s) of the Neurotrophins GDNF and Neurturin in Allergic Asthma in Mouse Models**	Jacques Zimmer	CRP Santé		01.01.2008	31.12.2009	287,500
FNR/ BIOSAN/07/22	**Implication of the h Topolα in Telomere Maintenance in Leukemia**	Thomas Wenner	CRP Santé		01.12.2007	30.11.2009	152,500
						TOTAL:	7,588,594

Finished BIOSAN-PROVIE 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	CRP Santé Centre Hospitalier de Luxembourg		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	CRP Santé Centre Hospitalier de Luxembourg		01.05.2002	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	Laboratoire National de Santé	01.07.2002	31.12.2005	490,000
FNR/01/04/08	**Luxembourg Heart Failure Project: Home-Monitoring of Patients with Severe Heart Failure**	Daniel R. Wagner Norbert Rösch	CRP Santé	CRP Henri Tudor Centre Hospitalier de Luxembourg	01.01.2002	31.07.2007	720,000
FNR/03/04/04	**Microglial Activation and Differentiation: Balance between Proinflammatory Secretions and Beta-amyloid Clearance**	Paul Heuschling	University of Luxembourg	CRP Santé Laboratoire National de Santé	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	CRP Santé Centre Hospitalier de Luxembourg		01.12.2004	30.11.2005	75,000
FNR/03/04/07	**Cognitive Neuropsychology of Ageing in Schizophrenia**	Anne-Marie Schuller Charles Pull	CRP Santé	Centre Hospitalier de Luxembourg	01.10.2004	30.09.2007	315,000
						TOTAL:	2,216,184

For a detailed summary of each project as well as other information, please refer to www.fnr.lu.

VIVRE Programme

Living Tomorrow in Luxembourg

Duration: 2002-2011
Total Budget: EUR 12,000,000
1st Call in 2002: 14 Projects Selected
2nd Call in 2005: 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. 20 projects have started in 2007, one will start in January 2008.

In total, the Fund has financed 35 projects in the framework of the VIVRE programme.

Ongoing VIVRE Projects:

Project Code	Title	Contact	Coordinating Institution(s)	Contracting Partner(s)	Starting Date	Closing Date	FNR Contribution (in EUR)
FNR/02/05/14	**Application of Arts Therapies to Some Crucial Problems of our Society**	Lony Schiltz	CRP Santé		01.09.2004	31.08.2008	210,000
FNR/02/05/24	**Cultural Heritage**	Foni Le Brun-Ricalens	Musée national d'histoire et d'art		01.04.2003	31.03.2008	390,000
FNR/VIVRE/06/03/01	**Collective Experiences, Intergenerational Memory and Identity Constructions in Luxembourg: Witnesses of World War II, Peasants, Industrial Workers, Immigrants (LUX-ID)**	Michel Margue Elisabeth Boesen	University of Luxembourg		15.01.2007	15.01.2010	500,000
FNR/VIVRE/06/40/02	**Metropolisation and Urban Governance in Luxembourg and the Cross-Border Areas (METROLUX)**	Christophe Sohn	CEPS/INSTEAD	University of Luxembourg	01.01.2007	31.12.2008	235,000
FNR/VIVRE/06/36/04	**Mapping of Hydrological Risk in Real-Time Flood Forecasting and in Floodplain Management**	Patrick Matgen Renaud Hostache	CRP Gabriel Lippmann	Administration de la Gestion de l'Eau	01.02.2007	31.01.2010	215,000
FNR/VIVRE/06/20/05	**Technologies de l'Information pour accompagner le Vieillissement de la Population Luxembourgeoise (TIVIPOL)**	Benoît Otjacques	CRP Gabriel Lippmann	University of Luxembourg	01.10.2007	31.12.2009	250,000
FNR/VIVRE/06/06/06	**Living in the Grand-Duchy of Luxembourg after a Stroke: Impact on Patients, their Families and their Quality of Life. Equality of Access to Care and Social Resources (AVC)**	Michèle Baumann	University of Luxembourg	CRP Santé	01.03.2007	31.03.2011	500,000
FNR/VIVRE/06/25/07	**Les réalités des politiques migratoires et leur perception par les populations concernées (MIGRAPOL)**	Claudia Hartmann-Hirsch	CEPS/INSTEAD	University of Luxembourg	01.09.2007	31.08.2010	470,000
FNR/VIVRE/06/15/08	**Advances in the Measurement of Discrimination, Inequality and Mobility (MEDIM)**	Philippe Van Kerm	CEPS/INSTEAD		01.03.2007	28.02.2010	329,821
FNR/VIVRE/06/01/09	**Values and Social Cohesion (VALCOS)**	Monique Borsenberger	CEPS/INSTEAD		01.02.2007	31.01.2011	290,000
FNR/VIVRE/06/30/10	**The Impact of Real and Financial Integration on Asset Price Co-Movement with Application to Luxembourg (BEIBERTCOS)**	Michel Beine	University of Luxembourg		01.06.2007	31.05.2010	400,000
FNR/VIVRE/06/02/11	**Intergenerational Relations in Luxembourg: Solidarity, Ambivalence, Conflict? (INTERGEN)**	Dieter Ferring	University of Luxembourg	CEPS/INSTEAD	01.08.2007	31.07.2010	495,000

Ongoing VIVRE Projects:

Project Code	Title	Contact	Coordinating Institution(s)	Contracting Partner(s)	Starting Date	Closing Date	FNR Contribution (in EUR)
FNR/VIVRE/06/08/12	**Health State and its Determinants: an Approach in Terms of Health Social Inequalities (ESANDE)**	Anastase Tchicaya	CEPS/INSTEAD		01.04.2007	31.03.2010	325,000
FNR/VIVRE/06/14/13	**Key Competences for Lifelong Learning (BASICS)**	Claude Houssemand	University of Luxembourg		01.10.2007	30.09.2010	469,922
FNR/VIVRE/06/26/14	**Towards a Deepening of the Luxembourg Model of Professional Relations (LUXMODEL)**	Franz Clement	CEPS/INSTEAD		01.04.2007	31.03.2010	235,000
FNR/VIVRE/06/43/15	**Erschließung und Vernetzung lexikographischen Wissens über das Luxemburgische (LEXICOLUX)**	Claudine Moulin Peter Gilles	University of Luxembourg		15.04.2007	15.04.2010	420,000
FNR/VIVRE/06/10/16	**A Quality Control System for Assessment Processes by Means of a Collaborative Internet-Based Assessment Platform (TAQ-QUAL)**	Romain Martin Gilbert Busana	University of Luxembourg	CRP Henri Tudor	01.04.2007	31.03.2009	300,000
FNR/VIVRE/06/31/17	**Banques, marchés financiers et législations: interdépendances et mesures comparées des performances (PLAFILOI)**	Régis Blazy Pierre-Henri Conac	University of Luxembourg		01.06.2007	31.05.2010	500,000
FNR/VIVRE/06/09/18	**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 (MAGRIP-R)**	Romain Martin	University of Luxembourg	CEPS/INSTEAD	01.10.2007	30.09.2009	380,000
FNR/VIVRE/06/28/19	**Coherence of Social Transfer Policies and Micro-Simulation (REDIS)**	Raymond Wagener Pierre Hausman	CEPS/INSTEAD		01.04.2007	31.03.2010	500,000
FNR/VIVRE/06/32/20	**Performance of Financial Services in Luxembourg (PERFILUX)**	Pierre-Armand Michel Paolo Guarda	University of Luxembourg	Banque Centrale du Luxembourg Statec	01.10.2007	30.09.2010	500,000
FNR/VIVRE/06/42/21	**Digital, Multi-Disciplinary, Interactive and Dynamic Atlas for Luxembourg and the Greater Region (LUXATLAS)**	Michel Pauly	University of Luxembourg		01.05.2007	30.04.2010	500,000
						TOTAL:	8,414,743

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/02/05/04	**History, Memory and Identities**	Michel Margue Sonja Kmec	University of Luxembourg		01.01.2003	30.04.2007	316,472
FNR/02/05/06	**Linguistic Competences**	Fernand Fehlen	University of Luxembourg		01.11.2003	31.12.2006	100,000
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 Role of School in the Luxembourg Society of Tomorrow**	Romain Martin	University of Luxembourg		01.01.2004	30.09.2007	500,000
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	Musée national d'histoire naturelle		01.09.2003	31.08.2006	250,000
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	31.12.2007	449,924
FNR/02/05/26	**Socio-economic Databases Online (SEDO)**	Uwe Warner	CEPS/INSTEAD	CRP Gabriel Lippmann	01.03.2003	31.08.2005	250,000
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	Centre national de littérature	University of Luxembourg	01.11.2003	30.04.2007	220,000
FNR/ VIVRE/06/35/03	**Quelles mobilités demain au Luxembourg et dans son espace transfrontalier ? Comprendre et simuler les interactions entre mobilités quotidienne et résidentielle (MOBILLUX)**	Philippe Gerber	CEPS/INSTEAD		01.01.2007	31.12.2007	80,000
						TOTAL:	3,532,659

For a detailed summary of each project as well as other information, please refer to www.fnr.lu.

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 varied, research projects have to involve the participation of a Luxembourg industrial partner.

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 by the CRP Gabriel Lippmann and the CRP Henri Tudor. The CRP Gabriel Lippmann focuses on fundamental research, whereas the CRP Henri Tudor concentrates on applied research.

Ongoing TRASU Project:

Project Code	Title	Contact	Coordinating Institutions	Industrial Partners	Academic Partners	Starting Date	Closing Date	FNR Contribution (in EUR)
FNR/03/06/03	**Development of Innovative Surfaces by Means of Optimised Plasma Techniques and Technology Transfer to Industries**	Patrick Choquet David Ruch	CRP Gabriel Lippmann CRP Henri Tudor	Ateliers Nic Georges Balzers Ceratizit Ceodeux-Puretec Circuit Foil Ewald Giebel Galvalange Goodyear Technical Centre Novelis TrefilArbed	Fraunhofer Institute for Surface Engineering and Thin Films, Germany Flemish Institute of Technological Research, Belgium University of Luxembourg, Ecole des Mines de Nancy, France Université de Nancy, France Ecole Nationale Supérieure de Chimie de Paris, France Université de Namur, Belgium Université de Louvain la Neuve, Belgium Université de Saarbrücken, Germany	01.05.2005	30.04.2009	6,000,000
							TOTAL:	6,000,000

For a detailed summary of the project as well as other information, please refer to www.fnr.lu.

SECAL Programme

Food Safety

Duration: 2003-2010
Total Budget: EUR 7,500,000
1st Call in 2003: 6 Projects Selected
2nd Call in 2007: 5 Projects Selected

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.

In total, the Fund has financed 11 projects in the framework of the SECAL programme.

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 (MENSSANA)**	Norbert Rösch	CRP Henri Tudor	Centre Hospitalier de Luxembourg	01.10.2004	31.01.2009	800,000
FNR/03/07/03	**Novel Protein- and DNA-Based Methods for Tracing of Food Components**	André Steinmetz	CRP Santé	Laboratoire National de Santé	01.11.2004	30.04.2008	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	CRP Santé Laboratoire National de Santé	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	Laboratoire National de Santé	Administration des Services techniques de l'Agriculture Direction de la Santé Administration des Services vétérinaires	01.07.2005	30.06.2008	849,400
FNR/SECAL/07/02	**Development of New Markers for the Identification of Mycotoxinproducing Fusarium Species**	Lucien Hoffmann	CRP Gabriel Lippmann		01.01.2008	30.06.2010	285,000
FNR/SECAL/07/03	**Mobile Expert & Networking System for Systematic Analysis of Nutrition-Based Allergies (Phase 3)**	Norbert Rösch	CRP Henri Tudor		01.12.2007	30.11.2009	450,000
FNR/SECAL/07/04	**Surveillance of Environmental Contamination and Human Exposure of Noroviruses in Luxembourg (SENSORLUX)**	Joël Mossong	Laboratoire National de Santé	CRP Gabriel Lippmann CRP Santé Direction de la Santé	01.01.2008	31.12.2009	499,958
FNR/SECAL/07/05	**Development of a Mass Flow-Based Spring Capture Zone Delineation and Immission Modelling Tool for Drinking Water Pollution Risk Management**	Paul Schosseler Luc Zwank	CRP Henri Tudor	University of Luxembourg Laboratoire National de Santé	01.02.2008	30.06.2010	499,650
FNR/SECAL/07/06	**Specific Detection of Food Allergens from Animal and Plant Origin: Molecular Characterisation for Application in Clinical Diagnosis**	André Steinmetz François Hentges	CRP Santé		01.01.2008	31.12.2009	485,530
						TOTAL:	6,901,671

Finished SECAL Project:

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 Laboratoire National de Santé Administration de la Gestion de l'Eau	01.05.2005	15.10.2006	497,133
						TOTAL:	497,133

For a detailed summary of each project as well as other information, please refer to www.fnr.lu.

INTER Programme

Promotion of International Cooperation

Duration: 2006-2011
Total Budget: EUR 7,700,000
Calls: Ongoing (for further details, visit www.fnr.lu)

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.

So far, the Fund has financed a total of 9 projects in the framework of the INTER programme.

Programme	Foreign Financing Agency	Projects funded			
		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**	Henri-Noël Migeon Nathalie Valle	CRP Gabriel Lippmann	256,000
EUROCORES EuroCyano	European Science Foundation	**No project funded**			
EUROCORES Corisk	European Science Foundation	**No project funded**			
EUROCORES ECRP 1st and 2nd call	European Science Foundation	**No project funded**			
EUROCORES ECRP 3rd call	European Science Foundation	**No project funded**			
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	52,308
		Towards a sustainable management of pond diversity at a landscape level	Henri-Michel Cauchie	CRP Gabriel Lippmann	118,512
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	**Integrating Radar Remote Sensing, Hydrologic and Hydraulic Modelling for Surface Water Management**	Lucien Hoffmann	CRP Gabriel Lippmann	216,185
		Monitoring soil organic carbon in croplands using Imaging Spectroscopy	Lucien Hoffmann	CRP Gabriel Lippmann	22,174
		The Combined Use of Ground-Based and Remote Sensing Techniques as a Tool for Volcanic Risk and Health Impact Assessment for the Goma Region (Nort Kivu, Democratic Republic of Congo)	Nicolas d'Oreye, Antoine Kies	Musée national d'histoire naturelle University of Luxembourg	85,300
Scientific cooperation agreement	Centre national de la recherche, France	**Open call**			
Materials World Network, 2006 Call	National Science Foundation, United States	**No project funded**			
Société et avenir	Service fédéral public de programmation scientifique, Belgium	**1 project proposed for funding**			
FLARE	Era-Net ERA-AGE	**The Impact of PPAR Signalling on Alzheimer's Disease**	Lynn Welter-Stahl	University of Luxembourg	242,000
ERA-Net MATERA, 2007 Call	MSHE, Poland / AKA, Finland	**Defects in Chalcopyrites - Advanced Characterisation**	Susanne Siebentritt	University of Luxembourg	250,000
Materials World Network, 2007 Call	National Science Foundation, United States	**Evaluation ongoing**			
				TOTAL FNR Contribution (in EUR)	1,392,479

For a detailed summary of each project as well as other information, please refer to www.fnr.lu.

ATTRACT Programme

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

Duration: 2006-2012
Total Budget: EUR 6,000,000
1st Call: 1 Candidate Selected
2nd Call in 2008 (Deadline: 15 April 2008)

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.

In 2007, 7 candidates and their Luxembourg host institutions submitted a proposal. From these, the following candidate / project was selected:

Photovoltaics via Electrodeposition of Compound Semiconductors - PECOS

Project Leader: Dr Phillip Dale (United Kingdom)
Host Institution: University of Luxembourg
Starting Date: 1 January 2008
Closing Date: 31 December 2012
FNR Contribution: EUR 800,000

Solar cells are an important energy generating technology for the future, and it is imperative that they are developed to make them low cost and efficient, from non-toxic abundant materials. Research has shown that photovoltaic semiconductors can be electrodeposited with a high material yield under atmospheric conditions which could replace some or all of the vacuum processing leading to lower cost solar cells. Phillip Dale has researched the electro-deposition of semiconductors for use in photovoltaic devices in the world renowned group of Professor Peter at the University of Bath for three years, giving two oral presentations at international conferences.

The best thin film devices are based on the vacuum deposition of $Cu(In,Ga)(S,Se)_2$ semiconductor and have device efficiencies of 19.5% as compared to the best electrodeposited device of 11.4%. Two exciting opportunities exist, firstly to switch from $Cu(In,Ga)(S,Se)_2$ to $Cu_2ZnSn(S,Se)_4$ which appears to have similar photovoltaic properties but only contains non-toxic abundant elements, and secondly to change the electro-deposition medium from aqueous to an ionic liquid solvent. Ionic liquids allow electro-deposition at elevated temperatures which should lead to greater crystallinity of the semiconductor material, simpler starting materials, and enhanced performance of devices.

The aim of the proposed project is to electro-deposit $Cu_2ZnSn(S,Se)_4$ from both aqueous and ionic liquid media, building on previous experience gained from depositing $Cu(In,Ga)(S,Se)_2$, for use in photovoltaic devices. The optoelectronic properties of the electrodeposited polycrystalline material will be compared with single crystal material prepared by Professor Siebentritt (University of Luxembourg) using established equipment as well as the mutually beneficial photo-electrochemical equipment of Dr Dale. The deposited semiconductor will be completed into full devices by the Hahn Meitner Institute in Berlin, allowing material parameters to be compared with device performances. The research aims to improve understanding in how these devices work, and introduce new routes to low cost energy generation.

04 Encouraging International Collaborations

Encouraging International Collaborations INTER - Promot Cooperation ERA-NET (European Research Area Networks) Mo

Luxembourg has a quite internationally oriented research community. On the one hand, students commonly undertake their studies abroad. On the other hand, in terms of human resources, there are far over 50% non-natives working as researchers in Luxembourg (most of them from Luxembourg's neighbouring countries). All these links with foreign countries are important to draw upon and they are certainly beneficial for Luxembourg research.

Indeed, scientific research is a collaborative activity which should not be limited by national borders and the FNR actively encourages research collaborations between researchers in Luxembourg and foreign researchers. Luxembourg does not possess a critical mass of researchers that would enable the creation of big research teams in all scientific domains. Hence, in order to achieve international excellence, it is paramount for researchers to work together and cross national borders, gaining access to a greater pool of knowledge. International collaborations are thus a vital feature for Luxembourg research, be it in the domain of water or nanotechnology for example. The FNR's INTER programme was designed to address the flexibility needed to carry out research across borders.

The "INTER - Promotion of International Cooperation" programme is one of the instruments through which the FNR promotes international collaboration. This programme makes it possible to put together calls with other research funds with the key criteria for attributing funds being scientific quality. The stated 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 more fruitful approach to resolve certain transnational issues; to make research in Luxembourg more visible and more competitive.

Through the FNR's financial contribution, Luxembourg research can thereby profit from gaining access to a wider research context. In the FNR's eyes, this is high added value. To date collaborations have been set up with the Belgian Research Fund, with the French CNRS, as well as with the American National Science Foundation. A cooperation agreement with the Deutsche Forschungsgemeinschaft is also under way.

The INTER programme is also important on an administrative and organisational level, for it helps to reduce the fragmentation of the research landscape at the European level and helps to ensure administrative flexibility.

As an example, INTER facilitates the FNR's participation into the ERA-NET (European Research Area Networks) scheme, one key instrument to improve international collaboration. ERA-NET aims to foster cooperation and coordination of research activities carried out across Europe through the networking of research activities conducted at national or regional level and the mutual opening of national and regional research programmes. The scheme aims to enable national systems to address tasks collectively that they would not be able to tackle on their own. To date, Luxembourg takes part in three such networks (ERA-AGE, NEURON and MATERA).

What's more, the BFR (Bourses de formation-recherche) system of the Ministry of Research is currently being transformed into the AFR (Aides à la formation-recherche) managed by the FNR. The international openness of the system will be kept, as foreign researchers coming to Luxembourg as well as Luxembourg-born researchers going to foreign countries can receive a grant. Also, the Accompanying Measure "Mobility of Researchers" has been developed with international collaboration in mind. This measure funds stays abroad from Luxembourg researchers as well as visits to Luxembourg from foreign researchers from 2 weeks to 1 year.

What counts for research also counts for research policy. The FNR sees part of its role to work together with foreign experts in research policy. Knowing the "state of the art" in terms of international research policy is crucially important. Hence, apart from the INTER programme, the FNR is now a member of various international networks: the European Union Research Organisations' Head of Research Councils (EUROHORCS) since 2002; the European Science Foundation (ESF) since 2002; the European Research Consortium in Informatics and Mathematics (ERCIM) since 2002; the European Cooperation in the field of Scientific and Technical Research (COST) since 2002; the European Research Area Networks ERA-AGE, MATERA and NEURON; and the International Council for Science (ICSU) since 2004.

Further details on International Collaboration are available on www.fnr.lu.

05 Accompanying Measures

Accompanying Measures

In order to supplement research financing as such, the National Research Fund also provides Accompanying Measures (AM) in order to support the general framework of scientific research in Luxembourg.

In 2007, the Fund selected a total of 225 activities among 237 proposals submitted. It should be noted that activities selected in 2007 may take place in 2007 or be extended over subsequent years. Activities selected in preceding years are no longer mentioned in this report.

The Measures in 2007:

MA1: Promotion of Scientific Culture

MA2: Active Participation of Researchers in Scientific Conferences Abroad

MA3: Organisation of Scientific Conferences in Luxembourg

MA4: Publication of Doctoral Theses / Publication of Scientific Works

MA5: Preparation of European Research Projects

MA6: Mobility of Researchers

MA7: Training in Research Project Management

MA8: National Research Coordination

SF: Science Festival

The Reform of the Measures in 2008

In order to respond to the recommendations received during the 2007 survey of the measures and the experience gained over the last years, the FNR's Accompanying Measures have been reformed. The new guidelines and forms are now available on www.fnr.lu.

The reformed Accompanying Measures in detail:

AM1 - Promotion of Scientific Culture

AM2 - Training and Mobility
- a: Active Participation of Researchers in Scientific Conferences Abroad
- b: Training for Researchers (including summer schools)
- c: Mobility of Researchers

AM3 - Organisation of Scientific Conferences in Luxembourg

AM4 - Scientific Publications Including PhD Theses

AM5 - National Research Coordination
- a: Thematic and Structural Research Platforms
- b: Public Data Access for Research

AM6 - International Collaboration
- a: Preparation of a European Union Research Project

Annual Awards - Best Scientific Publication(s) of the Year and Best Promotion of Scientific Culture of the Year

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.

What are the main changes to be introduced by the 2008 Reform?

- Two Annual Awards are introduced, one for the best scientific publication and another for the best promotion of scientific culture.
- Regarding the measure AM2a, researcher are now eligible up to 8 years instead of 4 years after their PhD to present their research results at scientific conferences abroad and the measure is open for researchers involved in FNR projects, in case there are no sufficient funds under the projects.
- Regarding the measure AM2b, it is extended to include not only project management, but also substantial scientific training activities (summer-schools, individually organised training sessions) for researchers, independent from their age.
- In order to ensure the selection of the proposals on the basis of quality, the measures AM1, AM2c, AM3 and AM5 will be evaluated by an external expert panel.
- The selection criteria and the selection process are described in detail for each type of measure.
- Proposals that are not retained for funding will receive a brief explanation of their refusal.
- Each AM will have its own clearly structured forms and guidelines.
- All procedures will be in English.

Overview of Activities in 2007

Code	Title of measure	Number of proposals submitted	Number of proposals accepted	Total FNR contributions in 2007 * (EUR)
MA1	Promotion of Scientific Culture	30	30	189,659.57
MA2	Active participation of novice researchers in conferences	68	68	65,041.11
MA3	Organisation of scientific conferences in Luxembourg	54	50	395,280.36
MA4	Scientific publications	36	36	66,356.27
MA5	Preparation of EU projects	15	12	22,300.00
MA6	Mobility of researchers	27	24	279,986.25
MA7	Training in research project management	1	1	1,807.03
MA8	National research coordination	6	4	364,600.00
SF	Science Festival (Science Circus)	1	1	50,000.00
	Totals	**237**	**225**	**1,435,030.50**

* preliminary estimates

Accompanying Measures

Scientific Culture Participation Or
Scientific Works Preparation European Research Projects Mo

Who is eligible?

The measures are addressed to a larger public:

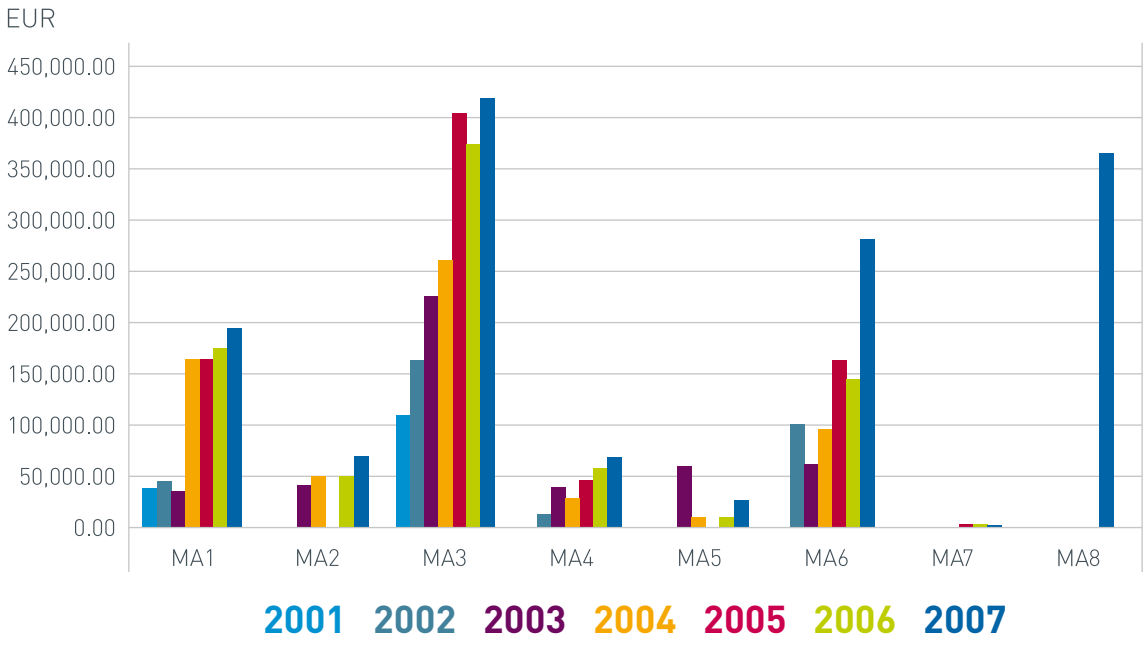
- Public institutions or services authorised to undertake R&D activities,
- Associations,
- Individuals who pursue activities of scientific nature, including teachers and students.

How to apply for the measures?

For the measures AM1, AM2c, AM3 and AM5, the submission deadlines are on 1 April and 1 October of each year. The submission deadline for the Annual Awards is on 1 April of each year. For the remaining measures, deadlines are fixed according to the beginning of the activities.

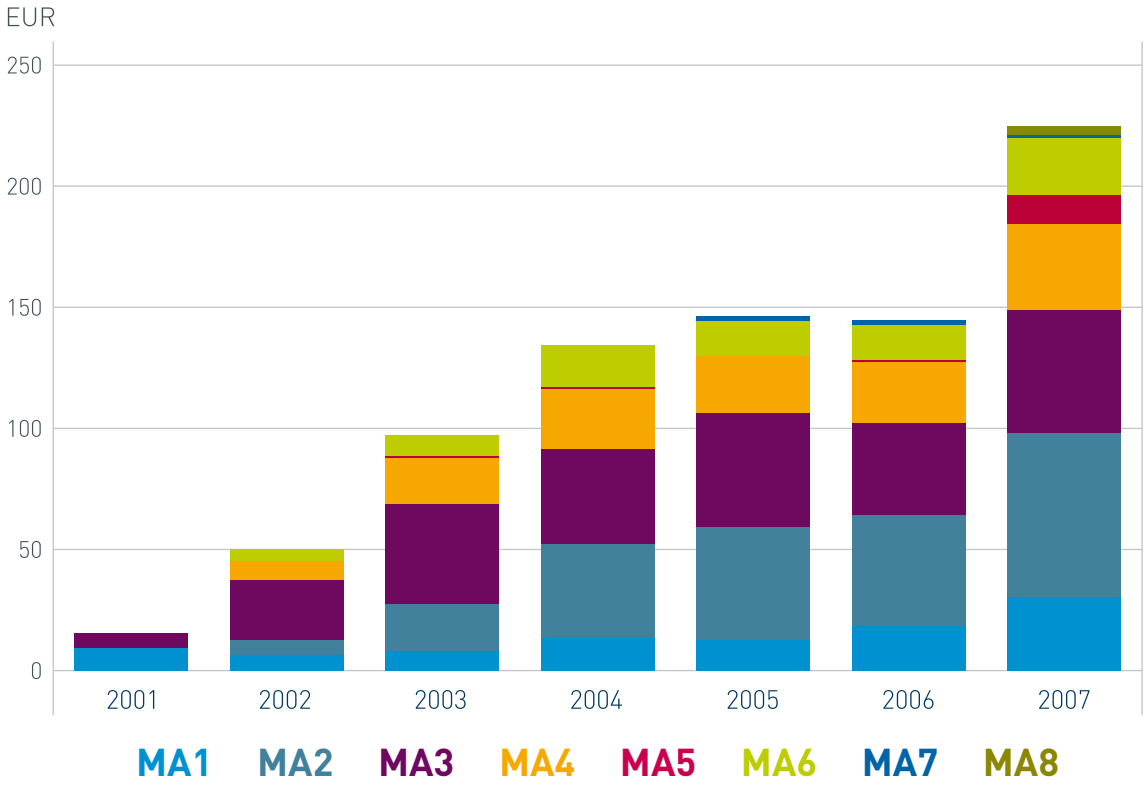
Further details on applying for the accompanying measures are available on www.fnr.lu.

Expenditure per Accompanying Measure per year 2001 - 2007



ganisation Publication Doctoral Theses
bility Training Research Science Festival

Accepted proposals per Accompanying Measure per year 2001-2007



Accepted Proposals in 2007

MA1: Promotion of Scientific Culture

Reference	Title of the Activity	Organizer	Organizing Institution	Date of the activity	FNR Contribution in EUR
FNR/07/ MA1/01	Galileo Science Mobil 2008	Sandrine Amann	Musée National d'Histoire Naturelle	2008	€ 25,000.00
FNR/07/ MA1/02	Science Club 2008	Patrick Delhalt	Musée National d'Histoire Naturelle	2008	€ 25,000.00
FNR/07/ MA1/03	E-QUIZZ 2007 - Edition spéciale année polaire	Fernand Reinig	CRP Gabriel Lippmann	1er juin 2007 - 31 mai 2008	€ 10,000.00
FNR/07/ MA1/04	Cycle de conférences 2007: Les Chercheurs Luxembourgeois à l'Etranger	Pierre Seck	Université du Luxembourg	octobre 2007 - décembre 2007	€ 8,000.00
FNR/07/ MA1/05	Les Jeudis des Sciences (13e semestre)	Massimo Malvetti	Université du Luxembourg	septembre 2007 - fin janvier 2008	€ 2,000.00
FNR/07/ MA1/06	Remise d'un prix de physique aux meilleurs bacheliers	Jean-Paul Zanter	Association Luxembourgeoise des Physiciens a.s.b.l	septembre 2007	€ 1,500.00
FNR/07/ MA1/07	Remise de prix aux lauréats en chimie de 1ère et de 13e	Albert Lambert	Association des Chimistes Luxembourgeois	21 septembre 2007	€ 1,395.88
FNR/07/ MA1/08	Découvrir le cercle polaire dans l'IPY: une initiation à la recherche scientifique	Geneviève Harles	Lycée Classique Diekirch	novembre 2007	€ 13,000.00
FNR/07/ MA1/09	Voyage éducatif aux Açores pour des jeunes de l'enseignement secondaire dans le cadre de l'Année du Dauphin (UNEP)	Gallego Pierre	Musée National d'Histoire Naturelle	14 au 28 août 2007	€ 5,800.00
FNR/07/ MA1/10	Opération Cartes Postales IPY (écoles primaires)	Antoine Kies	Université du Luxembourg	juin - décembre 2007	€ 1,500.00
FNR/07/ MA1/11	Année Polaire Internationale pour la communauté portugaise	Antoine Kies	Université du Luxembourg	septembre 2007	€ 1,500.00
FNR/07/ MA1/12	Yamal: conférences, débats, préparation de projets	Antoine Kies	Université du Luxembourg	septembre 2007	€ 2,300.00
FNR/07/ MA1/13	Conférence anthropologique	Antoine Kies	Université du Luxembourg	septembre 2007	€ 680.00
FNR/07/ MA1/14	LuSI Day (Luxemburg Safer Internet Day)	Djamel Khadraoui	CRPHenri Tudor	8 novembre 2007	€ 4,302.17
FNR/07/ MA1/15	Journée transfrontalière sur la biométhansiation 2007	Fernand Reinig	CRP Gabriel Lippmann	13 septembre 2007	€ 2,300.52
FNR/07/ MA1/16	Luxemburger Naturwissenschaftsolympiade	Jeff Kohnen	Association des Biologistes Luxembourgeois	fin janvier 2008	€ 1,200.00
FNR/07/ MA1/17	L'année polaire internationale: une occasion de découvrir la recherche scientifique et une culture locale en milieu extrême	Claude Wangen	AGEDOC a.s.b.l.	avril 2008	€ 12,200.00
FNR/07/ MA1/18	Remise d'un prix de physique aux meilleurs bacheliers	Jean-Paul Zanter	Association Luxembourgeoise des Physiciens a.s.b.l	vers le 12 septembre 2008	€ 1,500.00

Reference	Title of the Activity	Organizer	Organizing Institution	Date of the activity	FNR Contribution in EUR
FNR/07/ MA1/19	uni@kinosch	Massimo Malvetti	Université du Luxembourg	en mars ou avril 2008	€ 3,000.00
FNR/07/ MA1/20	Robosud	Massimo Malvetti	Université du Luxembourg	entre mai et juin 23008	€ 3,000.00
FNR/07/ MA1/21	Les grandes conférences de la FSTC	Massimo Malvetti	Université du Luxembourg	entre mars et juin 2008	€ 2,200.00
FNR/07/ MA1/22	Les Jeudis des Sciences (14e semestre)	Massimo Malvetti	Université du Luxembourg	entre mars et juin 2008	€ 2,000.00
FNR/07/ MA1/24	Année Polaire International	Antoine Kies	Université du Luxembourg	1er janvier - 30 juin 2008	€ 6,000.00
FNR/07/ MA1/25	Vaincre les maladies tropicales avec des techniques économiques et écologiques	Pierre Lutgen	Iwerliewen fir bedreete Volleker a.s.b.l.	janvier 2008 - décembre 2009	€ 10,000.00
FNR/07/ MA1/26	Cartographie de l'Atlas Urbain du Luxembourg	Christophe Sohn	CEPS/INSTEAD	1er janvier - 31 mars 2008	€ 17,238.00
FNR/07/ MA1/27	Catch a Star 2008	Fernand Wagner	European Association for Astronomy Education	octobre 2007 - mai 2008	€ 1,500.00
FNR/07/ MA1/28	Semaine de recherche pour les vainqueurs du jeu-concours E-Quizz 2007 - Edition spéciale année polaire	Fernand Reinig	CRP Gabriel Lippmann	entre février - avril 2008	€ 8,500.00
FNR/07/ MA1/29	Cycle de conférences sur le thème de la place de l'école dans la société luxembourgeoise de demain	Romain Martin	Université du Luxembourg	février - octobre 2008	€ 3,845.00
FNR/07/ MA1/30	Cycle de conférences «Promotion de la santé - Les facteurs de risque et de protection»	Georges Steffgen	Université du Luxembourg	mars - novembre 2008	€ 3,198.00

Accepted Proposals in 2007

MA2: Active Participation of Researchers in Scientific Conferences Abroad

Reference	Title of the Activity	Title of the Conference	Participant	Participant Institution	Date of the Conference	FNR Contribution in EUR
FNR/07/ MA2/01	Natural abundance N and O isotope composition of KCl-extractable soil nitrate from distinct agricultural treatments in southern Alberta, Canada	General Assembly 2007 of the European Geosciences Union, Vienna	Luc Rock	University Queen's Belfast	15 - 20 avril 2007	€ 905.25
FNR/07/ MA2/02	Pol Cruchten, Boys on the run and their pan-Atlantic reception	2007 Society for Cinema and Media Studies Conference, Chicago	Gérard Kraus	University of Wales Aberystwyth	08 - 11 mars 2007	€ 1,108.52
FNR/07/ MA2/03	Is migration a good substitute for education subsides?	Sixth International Conference of the Middle East Economic Association - MEEA 2007, Dubai	Ousmane Faye	Université Catholique de Louvain	14 - 16 mars 2007	€ 1,045.74
FNR/07/ MA2/04	Nature-parks as rural governance instruments in Luxembourg	The Rural Society of European Peripheral Regions Conference, Leipzig	Philippe Wealer	Universität Berlin (Humboldt-Universität)	23 - 25 février 2007	€ 347.60
FNR/07/ MA2/05	The impact of dissociation in biomass combustion on the flame temperature	Heat Transfer in Components and Systems for Sustainable Energy Technologies - HEAT SET 2007, Chambéry	Sacha Oberweis	University Staffordshire	18 - 20 avril 2007	€ 787.63
FNR/07/ MA2/06	A mathematical approch of modelling facility location of medical service in Africa	Colloque Statistique Mathématique et Statistique de la Santé organisé par la CIMPA, Yaoundé Kameroun	Guy-Aimé Tanonkou	Institut National de Recherche en Informatique et en Automatique	16 - 29 avril 2007	€ 1,143.95
FNR/07/ MA2/07	Privacy through Trust in Mobility Networks	Wireless Telecommunications Symposium, Pomona California	Dagmara Spiewak	Université du Luxembourg/ Campus Kirchberg	26 - 28 avril 2007	€ 1,007.50
FNR/07/ MA2/08	Comparison between forest floor interception of a beech, grass-moss and pine plot	European Geosciences Union - EGU 2007, Vienna	Miriam Gerrits	Centre de Recherche Public Gabriel Lippmann	15 - 20 avril 2007	€ 798.25
FNR/07/ MA2/09	Changing Campaign Coverage of German Television. A Comparison of Five Elections 1990-2005	The 57th Annual Conference of the International Communication Association, San Francisco	Reimar Zeh	Universität Erlangen-Nürnberg	24 - 28 mai 2007	€ 1,133.50
FNR/07/ MA2/10	Towards improved conceptualization in hydrological modelling: a case study on interception.	European Geosciences Union - EGU 2007, Vienna	Fabrizio Fenicia	Centre de Recherche Public Gabriel Lippmann	15 au 20 avril 2007	€ 998.70
FNR/07/ MA2/11	The competitive advantages of firms inside and outside industry clusters	The 2007 Meeting of the Association of American Geographers, San Francisco	Laurent Frideres	University of Cambridge Geographical Dept.	17 - 21 avril 2007	€ 1,148.80

Reference	Title of the Activity	Title of the Conference	Participant	Participant Institution	Date of the Conference	FNR Contribution in EUR
FNR/07/ MA2/12	The reproducibility of radiological anterior and posterior horn positioning in preoperative planning of lateral meniscus transplantations	The 6th Biennal Isakos Congress, Florence	Philippe Wilmes	Universität des Saarlandes - Orthopedie	27 - 31 mai 2007	€ 1,200.43
FNR/07/ MA2/13	Influence of bleaching on the enantiomeric disposition of amphetamine-type stimulants in hair	Annual Meeting of the Society of Hair Testing 2007, Cardiff	Liliane Martins Ferreira	Laboratoire National de Santé	14 - 15 mai 2007	€ 915.49
FNR/07/ MA2/14	Naturally acquired and vaccine induced T-cell responses in cancer patients: Is hTERTp540 a Tumor-Associated Antigen (TAA) recognized by Cytotoxic T Lymphocytes (CTL)?	13th International Congress of Immunology, Rio de Janeiro	Lynn Wenandy	University of Herlev - Hematology Dept.	21 - 25 août 2007	€ 1,530.53
FNR/07/ MA2/15	Comparison of one-photon and two-photon excited autofluorescence of RPE cells from human donor eyes	ARVO 2007 Annual Meeting, Fort Lauderdale	Olivier La Schiazza	Universität Heidelberg - Ruprecht Karls	06 - 10 mai 2007	€ 1,331.70
FNR/07/ MA2/16	Preparation and Exploitation of Tailored Polymer Resins for Use in Dynamic Combinatorial Library Synthesis	Gordon Research Conference: Polymers (East), South Hadley	Paul Besenius	University of Strathclyde Glasgow	17 - 22 juin 2007	€ 1,144.65
FNR/07/ MA2/17	Adaptive-gain extended Kalman filter: application to a series connected DC motor	Conference on Systems and Control, Marrakech	Nicolas Boizot	Université du Luxembourg Campus Kirchberg	16 - 18 mai 2007	€ 832.29
FNR/07/ MA2/18	- Hepatitis B virus (HBV) genotype E surface antigen (HBsAg) detection with different immunoassays and diagnostic impact of mutations of the preS/S gene. - Molecular and antigenic evolution and geographic spread of H5N1 highly pathogenic avian influenza viruses in africa.	Molecular Diagnosis of Infectious Diseases Conference, Minsk	Christophe Olinger	Laboratoire National de Santé	17 - 18 mai 2007	€ 1,247.38
FNR/07/ MA2/20	Semantic Dementia (SD): A longitudinal case study of autobiographical memory impairment and of anatomical and functional alterations	International Neuropsychological Society Conference - INS 2007, Bilbao	Vanessa Matuszewski	Université de Caen (Basse Normandie) - INSERM EPHE	04 - 07 juillet 2007	€ 1,080.67
FNR/07/ MA2/21	Moving horizon estimation for linear singular systems	European Control Conference 2007, Kos	Boulaid Boulkroune	Centre de Recherche Public Henri Tudor	2 - 5 juillet 2007	€ 1,433.24
FNR/07/ MA2/22	Conflict and Cooperation between European Courts. The Diplomacy of Transnational Judicial Networks In Europe	Law and Society Association Meeting 2007, Berlin	Laurent Scheeck	Université Libre de Bruxelles- Institut d'Etudes Européennes	25 - 28 juillet 2007	€ 715.80
FNR/07/ MA2/23	A novel cholesterol uptake pathway in macrophages: scavenger receptor high density lipoprotein	Gordon Research Conference on Atherosclerosis, Lucca	Claudine Neyen	University of Oxford	17 - 22 juin 2007	€ 993.39
FNR/07/ MA2/24	Carbohydrate Dynamic Combinatorial Libraries for Quadruplex DNA Recognition	International Symposium on Macrocyclic and Supramolecular Chemistry, Salice Terme	Jean-Luc Wietor	University of Cambridge	24 - 28 juin 2007	€ 834.11
FNR/07/ MA2/25	Making the object real - or how «gesturing-for-discourse» is accomplished in joint early L2 / L2 topic configuration	Integrating Gestures Conference of the International Society for Gesture Studies, Evanston Illinois	Gudrun Ziegler	Université du Luxembourg Campus Walferdange	18 - 21 juin 2007	€ 1,541.52
FNR/07/ MA2/26	Phage-displayed chemokines as tools for studying CCR5-mediated interactions	Molecular Diagnosis of Infectious Diseases Conference, Minsk	Cyrille Lejczak	Centre de Recherche Public de la Santé	10 - 13 juin 2007	€ 547.30
FNR/07/ MA2/27	Can Tourism Help Rescue the Heritage?	Things that Move: The Material World of Tourism and Travel Conference, Leeds	Olivier Walther	CEPS/INSTEAD	19 - 23 juillet 2007	€ 1,038.93

Reference	Title of the Activity	Title of the Conference	Participant	Participant Institution	Date of the Conference	FNR Contribution in EUR
FNR/07/ MA2/28	To use of suspended sediment colour to determine sediment sources	"10th International Symposium on River Sedimentation - ISRS 2007" du 1er au 4 août 2007 à Moscou	Nuria Martinez Carreras	Centre de Recherche Public Gabriel Lippmann	1 - 4 août 2007	€ 1,030.34
FNR/07/ MA2/29	Differences of the spelling performances of biliterate Luxemburgish and Romanophone good and poor spellers in German and French	14th Annual Meeting of the Society for the Scientific Study of Reading, Prague	Sonja Ugen	Université Libre de Bruxelles Campus de Solbosch	12 - 14 juillet 2007	€ 531.92
FNR/07/ MA2/30	Benefits of Electronic Data Interchange (EDI) for Supply Chains	1st Congress in Logistics and Supply Chain Management, Zaragoza	Emilio Tuñón Nieto	NAMSA	12 - 13 septembre 2007	€ 997.74
FNR/07/ MA2/31	WEEE Network Design - An Operations Research framework	22nd European Conference on Operational Research - EURO XXII, Prague	Gilles Weimerskirch	Universität des Saarlandes	8 au 11 juillet 2007	€ 858.41
FNR/07/ MA2/32	Auxin Transcriptional Signature of Arabidopsis	19th International Plant Growth Substances Association (IPGSA) Meeting, Puerto Vallarta	Claude Becker	Universität Freiburg (Albert Ludwig-Universität)	21 - 25 juillet 2007	€ 1,454.55
FNR/07/ MA2/34	Characterization of transposases affecting the synthesis of the toxic heptapeptide microcystin in cyanobacteria	30th Congress of the International Society of Limnology - SIL 2007, Montréal	Carole Molitor	Austrian Academy of Sciences	12 - 18 août 2007	€ 1,359.73
FNR/07/ MA2/35	Distributed Self Management for Distributed Security Systems	2nd International Conference on Bio-Inspired Computing: Theories and Applications - BIC-TA 2007, Zhengzhou	Michael Hilker	Université du Luxembourg Campus Kirchberg	14 - 17 septembre 2007	€ 996.87
FNR/07/ MA2/36	Genetics, wild boar (Sus scrofa) and classical swine fever: Defining management units	5th European Conference of Mammalogy, Siena	Alain Frantz	University of Sheffield	21 - 26 septembre 2007	€ 1,105.39
FNR/07/ MA2/37	Investigation of semantic similarity as a tool for comparative genomics	18th International Conference on Database & Expert Systems Applications - DEXA 2007 du 3 au 7 septembre 2007 à Regensburg	Danielle Welter	University of Cardiff	3 - 7 septembre 2007	€ 1,104.95
FNR/07/ MA2/38	Using Survey Data to Resolve the Exchange Risk Exposure Puzzle: Evidence from U.S. multinational firms	Annual Meeting of the European Finance Association" 2007, Ljubljana	Aline Muller	Université de Liège	22 - 26 août 2007	€ 1,532.24
FNR/07/ MA2/39	Electrochemical DNA hybridization detection using the [Ru(NH3)6]3+/DNA interactions on PNA modified gold electrodes by ac voltammetry	58th Annual Meeting of the International Society of Electrochemistry, Banff	Marc Steichen	Université Libre de Bruxelles Campus de la Plaine	9 - 14 septembre 2007	€ 853.24
FNR/07/ MA2/40	A General Approach to the Geostationary Transfer Orbit Mission Recovery	20th International Symposium on Space Flight Dynamics, Annapolis	Nicolas Faber	Université Louis Pasteur	24 - 28 septembre 2007	€ 1,294.25
FNR/07/ MA2/41	Characterization of the pig manure derived organic carbon and its influence on the mobility of veterinary antibiotics in soil	International Conference on Pharmaceuticals in the Environment - ERAPHARM 2007, York	Martina Arenz	Centre de Recherche Public Henri Tudor	19 - 21 septembre 2007	€ 1,003.48
FNR/07/ MA2/42	Overexpression of manganese superoxide dismutase triggers mitochondrial damage after chronic alcohol intoxication in mouse liver	11th Congress of the European Society for Biomedical Research on Alcoholism - ESBRA 2007, Berlin	Isabelle Larosche	Université René Descartes - Paris 5	23 - 26 septembre 2007	€ 809.93
FNR/07/ MA2/43	Social-issues.org: from versatility to universality	The 9th UKFIET International Conference on Education and Development, Oxford	Sachie Mizohata	Université de Paris 5	11 au 13 septembre 2007	€ 748.91
FNR/07/ MA2/44	Plurilingualism and the construction of identity within schooling	Young Researcher Conference: First Language Acquisition, Bâle	Anne Meyer	Université du Luxembourg Campus Walferdange	3 - 7 septembre 2007	€ 534.57 *

Reference	Title of the Activity	Title of the Conference	Participant	Participant Institution	Date of the Conference	FNR Contribution in EUR
FNR/07/ MA2/45	Engaging maintaining and quitting collaboration in a multilingual context	Young Researcher Conference: First Language Acquisition, Bâle	Roberto Gomez-Fernandez	Université du Luxembourg Campus Walferdange	3 - 7 septembre 2007	€ 522.25 *
FNR/07/ MA2/46	Analyzing deprivation using Item Response Models Evidence from PSELL2	64th International Atlantic Economic Conference, Savannah	Monica Szeles	CEPS/INSTEAD	7 - 10 octobre 2007	€ 1,120.21
FNR/07/ MA2/47	Conservation of fresh water pearl mussels by experimental infection of brown trout with glochidia of Margaritifera margaritifera. Effects of the inauguration of the Main-Danube-Canal on the biodiversity in the river Rhine, with special emphasis on eel parasites.	7th International Symposium on Fish Parasites - ISFP VII, Viterbo	Frankie Thielen	Fondation Hëllef fir d'Natur	24 - 28 septembre 2007	€ 786.96
FNR/07/ MA2/48	A reassessment of the CR2/C3d complex	11th European Meeting of Complement in Human Disease, Cardiff	Martine Bomb	University of Oxford	8 - 11 septembre 2007	€ 773.36
FNR/07/ MA2/49	Proteomic Analysis of the Cortisol Mediated Stress Response in THP-1 monocytes/macrophages using DIGE Technology	The 6th Annual Human Proteome Organisation World Congress - HUPO 2007, Séoul	Anja Billing	Laboratoire National de Santé	6 - 10 octobre 2007	€ 1,279.85
FNR/07/ MA2/50	Angular distribution of sputtered matter under Cs+ bombardment with oblique incidence	16th International Conference on Secondary Ion Mass Spectrometry - SIMS XVI, Kanazawa Japan	Christophe Verdeil	Centre de Recherche Public Gabriel Lippmann	27 octobre - 2 novembre 2007	€ 1,466.07
FNR/07/ MA2/51	The Storing Matter technique: preliminary results on PS and PVC. The Storing Matter technique: application to inorganic samples.	16th International Conference on Secondary Ion Mass Spectrometry - SIMS XVI, Kanazawa Japan	Patrick Philipp	Centre de Recherche Public Gabriel Lippmann	27 octobre - 2 novembre 2007	€ 1,553.70
FNR/07/ MA2/52	Fuid inclusion distribution associated to quartz microstructures: a record of the exhumation of the naxos metaphoric CORE complex (cyclades, greece)	The Geological Society of America Penrose Conference on Extending a Continent, Naxos	Luc Siebenaller	Université Henri Poincaré, Nancy 1	7 - 13 octobre 2007	€ 1,156.90
FNR/07/ MA2/53	A proteomic tool to study tumor-host interactions in a brain cancer animal model. Characterization of multicellular colorectal adenocarcinoma spheroids at the level of the proteome.	HUPO 6th Annual World Congress, Séoul	Uros Rajcevic	Centre de Recherche Public de la Santé	6 - 10 octobre 2007	€ 1,533.32
FNR/07/ MA2/54	The immigrant must invent the earth beneath his feet': Mythologizing of Home and Roots in Contemporary Migrant Literature	7th International Conference of the Estonian Association of Comparative Literature: Contemporary Fate of Great Cultural and Literary Myth, Tartu Estonia	Jeanne Glesener	Université du Luxembourg Campus Limpertsberg	23 - 26 septembre 2007	€ 968.50
FNR/07/ MA2/55	Visuomotorische Imaginationstherapie bei Patienten mit visuell-räumlichem Neglekt: Ein Fallbeispiel	22. Jahrestagung der GNP (Gesellschaft für Neuropsychologie), Bamberg	Anouk Welfringer	Universität Heidelberg - Ruprecht Karls	4 - 7 octobre 2007	€ 705.63
FNR/07/ MA2/56	Activation of Ca2+ channels by mechanism dependent and independent of store-operated Ca2+ entry regulates NADPH oxidase in HL-60 granulocytes	14th Congress of Calcium Binding Proteins and Calcium Function in Health and Disease, La Palma	Sabrina Bréchard	Université du Luxembourg Campus Limpertsberg	16 - 21 octobre 2007	€ 1,149.57
FNR/07/ MA2/57	Ca2+-dependent regulation of NOX2 activity via MRP proteins in HL-60 granulocytes.	14th Congress of Calcium Binding Proteins and Calcium Function in Health and Disease, La Palma	Véronique Schenten	Université du Luxembourg Campus Limpertsberg	16 - 21 octobre 2007	€ 1,183.66
FNR/07/ MA2/58	La situation de la langue francique dans l'enseignement au Luxembourg et en Moselle	Colloque "Comment gérer l'Europe babélique?", Sibiu	Laura Badea	Université du Luxembourg Campus Limpertsberg	15 - 20 octobre 2007	€ 425.00

MA2: Active Participation of Researchers in Scientific Conferences Abroad

Accompanying Measures MA2: Active Participation of Researchers MA3: Organisation of Scientific Conferences in Luxembourg

Reference	Title of the Activity	Title of the Conference	Participant	Participant Institution	Date of the Conference	FNR Contribution in EUR
FNR/07/ MA2/59	Maturation of gait patterns in toddlers	Society for Neuroscience Meeting 2007, San Diego	Françoise Leurs	Université Libre de Bruxelles Campus Erasme	3 - 7 novembre 2007	€ 1,216.47
FNR/07/ MA2/60	Incidence of sport injuries in elite young athletes of the Grand-Duchy of Luxembourg	12e Congrès International de l'ACAPS (Association des Chercheurs en Activités Physiques et Sportives), Liège	Anne Frisch	Centre de Recherche Public de la Santé	31 octobre - 2 novembre 2007	€ 214.25
FNR/07/ MA2/62	Créer et diffuser l'innovation sociale. De l'initiative à l'institutionnalisation	Colloque "Créer et diffuser l'innovation sociale. De l'initiative à l'institutionnalisation", Montréal	Véronique Dumont	Centre de Recherche Public Henri Tudor	8 - 9 novembre 2007	€ 1,638.00 *
FNR/07/ MA2/63	Identités et stratégies de jeunes précarisés. Approche anthropologique d'une crise sociale et économique	3es rencontres jeunes & Sociétés en Europe et autour de la Méditerranée, Marseille	Diana Reiners	Universität Graz - Karl-Franzens-Universität	24 - 26 octobre 2007	€ 303.49
FNR/07/ MA2/64	Identités et stratégies de jeunes précarisés. Approche anthropologique d'une crise sociale et économique	3es rencontres Jeunes & Sociétés en Europe et autour de la Méditerranée, Marseille	Gilles Reckinger	Universität Graz - Karl-Franzens-Universität	24 - 26 octobre 2007	€ 936.21
FNR/07/ MA2/65	L'Europe est ailleurs: de la double altérité du projet européen face à l'Etat-Nation	IIIe colloque international de RICHIE (Réseau International de jeunes Chercheurs en Histoire de l'Intgration Europenne), Naples	Carol Bergami	Universität Freiburg	14 - 15 décembre 2007	€ 508.27
FNR/07/ MA2/67	Caesium as a geochemical tool to define crustal-mantle interaction processes within North Atlantic LIP. The European Cenozoic Volcanic Province: The Type Example of an Implausible Plume (IMP)?	AGU Fall Meeting 2007, San Francisco	Romain Meyer	Université Catholique de Louvain	10 - 14 décembre 2007	€ 1,334.12 *
FNR/07/ MA2/68	Mise en évidence de teneurs extraordinairement fortes en strontium dans la calcite du coccolithe Crepidolithus	AGU Fall Meeting 2007, San Francisco	Michaël Hermoso	Musée National d'Histoire Naturelle	10 - 14 décembre 2007	€ 1,235.93

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MA3: Organisation of Scientific Conferences in Luxembourg

Reference	Title of the Conference	Organiser	Organising Institution	Date of the Conference	FNR Contribution in EUR
FNR/07/ MA3/01	First European Space Elevator Climber Design Workshop	Markus Klettner	European Spaceward Association A.S.B.L	novembre 2007	€ 20,492.06
FNR/07/ MA3/02	2nd Workshop on "Novel Molecular Targets in Cancer"	Simone Niclou	Centre de Recherche Public de la Santé	28 - 29 septembre 2007	€ 13,145.00
FNR/07/ MA3/03	38th European Mathematical Psychology Group Meeting - EMPG 2007	Raymond Bisdorff	Université du Luxembourg	10-12 septembre 2007	€ 10,530.00
FNR/07/ MA3/04	Proteom'Lux 2007: Proteomics and Mass spectrometry	Fernand Reinig	Centre de Recherche Public Gabriel Lippmann	17 octobre 2007	€ 1,153.30
FNR/07/ MA3/06	International Workshop "Symmetric Cryptography, Cryptanalysis"	Alex Biryukov	Université du Luxembourg	07 - 11 janvier 2008	€ 14,760.00
FNR/07/ MA3/07	Intelligent Systems Camp - Vol.2: Data Streams	Christoph Schommer	Université du Luxembourg	15-16 novembre 2007	€ 3,276.00
FNR/07/ MA3/08	Hack.lu 2007	Fred Arbogast	Computer Security Research and Response Team-Luxembourg	18 - 20 octobre 2007	€ 12,690.00
FNR/07/ MA3/10	Quelle Culture politique pour l'Europe?	Lukas K. Sosoe	Université du Luxembourg	29-30 juin 2007	€ 7,237.00
FNR/07/ MA3/11	"Cher Voisins": Les relations internationales entre le Luxembourg, la France, la Belgique et l'Allemagne. Les échanges économiques et financiers aux 19e-20e siècles.	René Leboutte	Université du Luxembourg	15-16 novembre 2007	€ 4,056.00
FNR/07/ MA3/13	Quel contrôle juridictionnel dans l'espace pénal eurpéen?	Stefan Braum	Université du Luxembourg	9 - 10 novembre 2007	€ 5,100.00
FNR/07/ MA3/14	Antonio GRAMSCI, l'intellectuel aujourd'hui: Politique, Culture, Globalisation	Fabrice Montebello	CLAE a.s.b.l.	25 - 27 octobre 2007	€ 7,185.00
FNR/07/ MA3/15	Journalisme et patrimoine mondial	Lucien Kerger	Université du Luxembourg	11-17 novembre 2007	€ 5,796.00
FNR/07/ MA3/16	Symbolische Repräsentationen und kulturelle Konzepte von Regionalität	Georg Mein	Université du Luxembourg	15 - 17 novembre 2007	€ 5,088.00
FNR/07/ MA3/17	Congrès international "Abeilles: agriculture et biodiversité"	Fernand Reinig	Centre de Recherche Public Gabriel Lippmann	16-17 novembre 2007	€ 8,913.00
FNR/07/ MA3/18	Colloque scientifique: Bongerten an Naturschutz	Raymond Aendekerk	Haus vun der Natur a.s.b.l.	16 octobre 2007	€ 3,456.00
FNR/07/ MA3/19	Determination, Conservation and dissemination of traditional fruit varieties in Europe	Frantz Charles Muller	Fondation Hëllef fir d'Natur	14 - 15 octobre 2007	€ 5,874.00
FNR/07/ MA3/20	Niederwälder in Europa Geschichte, Stand, Perspektiven	Georges Bechet	Musée National d'Histoire Naturelle	18-19 mai 2007	€ 3,780.00

Reference	Title of the Conference	Organiser	Organising Institution	Date of the Conference	FNR Contribution in EUR
FNR/07/ MA3/22	La construction sociale des territoires européens: frontières, régionalisations et performances.	Christian Schulz	Université du Luxembourg	20-21 septembre 2007	€ 5,076.00
FNR/07/ MA3/23	Dynamiques de pauvreté, pauvreté et accès aux besoins essentiels (éducation, santé, emploi)	Pierre Hausman	CEPS/INSTEAD	12 - 14 novembre 2007	€ 10,824.00
FNR/07/ MA3/24	Congrès international en Grande Région Lorraine-Luxembourg, Rhénanie-Palatinat, Sarre, Wallonie	Carlo Steffes	Direction de la Santé	27 - 29 novembre 2007	€ 9,000.00
FNR/07/ MA3/25	Colloque de la FREREF (Fondation des Régions Européennes pour la Recherche en Education et en Formation) intitulée "Gérer les transitions: individus et systèmes entre continuité et ruptures"	Claude Houssemand	Université du Luxembourg	3 - 4 septembre 2007	€ 14,829.00
FNR/07/ MA3/26	Social Cohesion in Europe and the Americas	Harlan Koff	Université du Luxembourg	5 - 6 novembre 2007	€ 9,834.00
FNR/07/ MA3/27	"Tuesday Seminars in Biosciences" Seminar series, at the University of Luxembourg and Kirchberg Hospital	Iris Behrmann	Université du Luxembourg	11 septembre 2007	€ 3,000.00
FNR/07/ MA3/28	Series of scientific seminars on "Trust, Security an reliability"	Thomas Engel	Université du Luxembourg	2e semestre 2007	€ 4,968.00
FNR/07/ MA3/29	FORUM EUROPE: HISTOIRE ET ACTUALITE (Cycle de conférence scientifique et internationale)	Michel Margue	Université du Luxembourg	début octobre 2007 - fin janiver 2007	€ 2,500.00
FNR/07/ MA3/30	Bildung für nachhaltige Entwicklung - L'éducation au développement soutenable	Théid Faber	Université du Luxembourg	octobre - décembre 2007	€ 2,496.00
FNR/07/ MA3/31	ISNA 13	François Diederich	Eidgenössische Technische Hochschule Zürich	19-24 juillet 2009	€ 25,000.00
FNR/07/ MA3/32	5th European EISCSA Congress: Sportmedica 2008	Jean-Paul Weydert	Société Luxembourgeoise de Kinésithérapie du Sport	16 - 18 octobre 2008	€ 15,000.00
FNR/07/ MA3/33	25e Journées d'Economie Monétaire et Bancaire	Régis Blazy	Université du Luxembourg	19 - 20 juin 2008	€ 17,160.00
FNR/07/ MA3/34	21th Annual Conference of the Plant Population Biology Section of the Ecological Society of Germany, Switzerland and Austria GfOe	Guy Colling	Musée National d'Histoire Naturelle	1 - 3 mai 2008	€ 18,525.00
FNR/07/ MA3/35	Symposium Biogeography of Refugia - Biodiversity- and Endemism Hotspots	Jan Christian Habel	Musée National d'Histoire Naturelle	mars 2009	€ 14 500.00
FNR/07/ MA3/36	LinuxDays 2008	Patrick Harpes	Centre de Recherche Public Henri Tudor	19 - 20 février 2008	€ 7,043.00
FNR/07/ MA3/37	DEON Conference and NORMAS workshop	Leon Van Der Torre	Université du Luxembourg	8 - 11 juillet 2008	€ 7,350.00
FNR/07/ MA3/38	La Gouvernance Européenne: Etat des lieux et défis scientifiques	Philippe Poirier	Université du Luxembourg	1 - 2 juin 2008	€ 8,310.00
FNR/07/ MA3/39	Sharia, citoyenneté et droits de l'homme	Lukas K. Sosoe	Université du Luxembourg	6 - 7 mars 2008	€ 7,938.00
FNR/07/ MA3/40	Approche comparative du droit coopératif dans l'Union Européenne	David Hiez	Université du Luxembourg	autumn 2008	€ 4,770.00
FNR/07/ MA3/41	Qu'est-ce qu'un avantage juridique pour une entreprise?	David Hiez	Université du Luxembourg	31 octobre 2008	€ 5,676.00
FNR/07/ MA3/42	Descartes et l'Allemagne / Descartes und Deutschland	Robert Theis	Université du Luxembourg	12 - 17 mai 2008	€ 2,880.00
FNR/07/ MA3/43	Les un(e)s et les autres: Migrations et Identités	Frank Wilhelm	Université du Luxembourg	7 - 8 février 2008	€ 3,682.00
FNR/07/ MA3/44	Le monde de Gianni Rodari. Parcours et réflexions sur l'apprentissage des enfants et des adultes face à la parole et aux frontières culturelles.	Claudio Cicotti	Université du Luxembourg	6 juin 2008	€ 5,310.00

Reference	Title of the Conference	Organiser	Organising Institution	Date of the Conference	FNR Contribution in EUR
FNR/07/ MA3/45	Musique à vent: Traditions régionales et perspective globale	Damien Sagrillo	Union Grand Duc Adolphe	10 - 14 juillet 2008	€ 9,870.00
FNR/07/ MA3/46	Colloque sur le patrimoine naturel et la biodiversité	Patrick Michaely	Musée National d'Histoire Naturelle	7 - 8 mars 2007	€ 6,468.00
FNR/07/ MA3/47	3rd International Symposium Coleoid Cephalopolds Through Time	Alain Faber	Musée National d'Histoire Naturelle	9 - 11 octobre 2007	€ 7,788.00
FNR/07/ MA3/48	Pour le multilinguisme: Exploiter à l'école la diversité des contextes européens	Romain Martin	Université du Luxembourg	en 2008	€ 5,535.00
FNR/07/ MA3/49	La formation des enseignants en contexte plurilingue: Identité - Hybridité - Mobilité	Sabine Ehrhart	Université du Luxembourg	12 - 13 mars 2008	€ 6,279.00
FNR/07/ MA3/50	Colloque Prostitution	Lukas K. Sosoe	Université du Luxembourg	24 - 25 janvier 2008	€ 8,454.00
FNR/07/ MA3/51	Les directives anticipées - comparaisons internationales des points de vue juridique et éthique	Erny Gillen	Caritas Luxembourg	entre mars et mai 2008	€ 5,274.00
FNR/07/ MA3/53	Tuesday Seminars in Biosciences	Iris Behrmann	Université du Luxembourg	entre 12 février et 24 juin 2008	€ 3,000.00
FNR/07/ MA3/54	Series of scientific seminars on "Trust, Security and reliability"	Thomas Engel	Université du Luxembourg / LIASIT	janvier - juin 2008	€ 4,410.00

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MA4a: Publication of Doctoral Theses

Reference	Title of the Publication	Author	Institution	FNR Contribution in EUR
FNR/07/ MA4a/01	Die Marktgrafen von Baden im Herzogtum Luxemburg (1488 - 1797)	Fridolin Weber-Krebs	Universität Trier	€ 3,000.00
FNR/07/ MA4a/02	Qualitätsmanagement in öffentlichen Verwaltungen - Eine empirische Untersuchung am Beispiel des Großherzogtums Luxemburg	Erwin Christen	Universität Trier	€ 1,498.00
FNR/07/ MA4a/03	Rollen von Sprachen in Identitätsbildungsprozessen multilingualer Gesellschaften in Europa. Eine vergleichende Betrachtung Luxemburgs, Südtirols und des Baskenlandes	Kristian Naglo	Universität München (Ludwig-Maximilians-Universität)	€ 1,385.40
FNR/07/ MA4a/04	Les représentations visuelles d'objets et d'action: la spécificité du corps humain	Carlos Paulos	Université Louis Pasteur	€ 1,513.60
FNR/07/ MA4a/05	Das Motiv des Wartens. Eine Analyse des Prosawerks Ingeborg Bachmanns unter besonderer Berücksichtigung der Philosophie der Existenz	Claude Heiser	Universität des Saarlandes	€ 2,002.72
FNR/07/ MA4a/06	Tidal and non-tidal contributions to surface loading processes on station coordinates	Paulo Jorge Mendes-Cerveira	Universität Wien (Technische)	€ 1,613.22
FNR/07/ MA4a/07	Etude des paramètres physico-chimiques impliqués dans les séparations énantiosélectives de xénobiotiques chiraux. Application en toxicologie clinique et médico-légale	Liliane Martins Ferreira	Université Henri Poincaré, Nancy 1	€ 1,036.00 *
FNR/07/ MA4a/08	La phosphorylation du domaine intracelullaire de l'APP: un mécanisme de régulation de la production d'Aß	Christine Feyt	Université Catholique de Louvain	€ 537.58
FNR/07/ MA4a/09	Prudent Ranking Rules: Theoretical Contributions and Applications	Claude Lamboray	Université Libre de Bruxelles	€ 1,009.40 *
FNR/07/ MA4a/10	Progressive Methods in Multiple Criteria Decision Analysis	Patrick Meyer	Faculté Polytechnique de Mons	€ 1,915.00 *
FNR/07/ MA4a/11	Analyse du cytosquelette par des approches bioinformatiques à haut débit de génomique comparative et de transcriptomique	Jean Muller	Université Louis Pasteur	€ 705.18
FNR/07/ MA4a/12	Sécurité des Architectures de Calcul Distribué: Authentification et Certification de Résultats	Sebastien Varrette	Université du Luxembourg	€ 456.00 *
FNR/07/ MA4a/13	The Rubato Composer Music Software: Component-Based Implementation of a Functional Concept Architecture	Gérard Milmeister	Eidgenössische Technische Hochschule Zürich	€ 540.00
FNR/07/ MA4a/14	On the asymptotic velocity of diffusions in random environment	Laurent Goergen	Eidgenössische Technische Hochschule Zürich	€ 382.05
FNR/07/ MA4a/15	Recognition of Fullerenes and Quadruplex DNA	Jean-Luc Wietor	University of Cambridge	€ 1,187.59
FNR/07/ MA4a/16	Caractérisations géochimique, sédimentologique et paléontologique des événements de libération massive d'hydrates de gaz dans l'océan	Michaël Hermoso	Université Pierre & Marie Curie	€ 1,395.00
FNR/07/ MA4a/17	Evaluation of a Steroidal Scaffold for the Conformational Restriction of Peptides in the Development of Peptide Vaccines	Catherine Bodé	University of Ghent	€ 785.39
FNR/07/ MA4a/18	La pauvreté, un concept multidimensionnel	Alessio Fusco	CEPS/INSTEAD	€ 1,502.14

Reference	Title of the Publication	Author	Institution	FNR Contribution in EUR
FNR/07/ MA4a/19	L'Organisation mondiale du commerce et l'évolution du Droit International Public	Bob Kieffer	Université Robert Schuman	€ 3,000.00
FNR/07/ MA4a/20	Interaction of the cytoskeletal protein talin with the integrin Ð3 subunit cytoplasmic tail: Characterization of the talin rod IBS2 integrin binding site	Michèle Moes	Université du Luxembourg	€ 756.40
FNR/07/ MA4a/21	Biharmonic Maps	Gilles Angelsberg	Eidgenössische Technische Hochschule Zürich	€ 773.55
FNR/07/ MA4a/22	Evaluation von prädikativen Faktoren für ein Ansprechen auf Darbepoetin alfa Therapie	Françoise Fandel	Universität Freiburg	€ 421.27
FNR/07/ MA4a/23	Prevalence and control of lice, scab and blowfly strike in sheep	Betty Bisdorff	University of Bristol	€ 554.07

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MA4b: Scientific Publications

Reference	Title of the Publication	Author	Institution	FNR Contribution in EUR
FNR/07/ MA4b/01	Actes de la conférence "AIM 2006 - Information Systems and Collaboration: State of the Art and Perspectives"	Fernand Feltz	Centre de Recherche Public Gabriel Lippmann	€ 3,000.00
FNR/07/ MA4b/02	Actes de la conférence "Phylogeography and Conservation of Postglacial Relicts"	Jan Christian Habel	Musée National d'Histoire Naturelle	€ 3,000.00 *
FNR/07/ MA4b/03	La loi de la gravitation universelle de Newton à Euler et Laplace	Prosper Schroeder	Default	€ 3,000.00
FNR/07/ MA4b/04	Etre Romain. Hommages in Memoriam Charles Marie Ternes	Jean-Joseph Muller	Société des Musées québécois	€ 3,000.00
FNR/07/ MA4b/05	Actes du symposium "Multiprofessionnelle und interdisziplinäre Zusammenarbeit - Herausforderungen und Perspektiven für die Schule"	Georges Steffgen	Université du Luxembourg	€ 3,000.00 *
FNR/07/ MA4b/06	Geochemical signature of rocks and weathering products in Luxembourg	Robert Colbach	Service géologique du Luxembourg	€ 2,819.92
FNR/07/ MA4b/07	Actes du 26e colloque international sur le Néolithique	François Valotteau	Musée National d'Histoire et d'Art	€ 3,000.00 *
FNR/07/ MA4b/08	ArchéoLogiques, tome 2	Foni Le Brun	Musée National d'Histoire et d'Art	€ 3,000.00
FNR/07/ MA4b/09	Design and evaluation of Actichip, a thematic microarray for the study of the actin cytoskeleton	Laurent Vallar	Centre de Recherche Public de la Santé	€ 1,320.35
FNR/07/ MA4b/10	Actes du colloque «Nei Tendenzen an der Recherche iwwert l'Lëtzebuerger Literatur»	Germaine Goetzinger	Centre National de Littérature	€ 3,000.00 *
FNR/07/ MA4b/11	Actes du colloque «Métamorphoses»	Marion Colas-Blaise	Université du Luxembourg	€ 3,000.00 *
FNR/07/ MA4b/12	Actes des colloques "Schriftkultur und Schwellenkunde" et "Grenzräume der Schrift"	Georg Mein	Université du Luxembourg	€ 6,000.00
FNR/07/ MA4b/13	Geometric least squares means ratios for the analysis of Plasmodium falciparum in vitro susceptibility to antimalarial drugs	Michel Vaillant	Centre de Recherche Public de la Santé	€ 1,246.44

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MA5: Preparation of a European Union Research Project

Reference	Project Title	Coordinator or Partner		Institution	Contribribution FNR accordé
FNR/07/ MA5/01	Capability-Layer Extended Management of Dynamic Environments - CapaBiz	Pierre Kelsen	coordinator	Université du Luxembourg	€ 7,300.00
FNR/07/ MA5/03	Service-system Quality - ServQual	Pierre Kelsen	partner	Université du Luxembourg	€ 1,000.00
FNR/07/ MA5/04	Youth and Social Exclusion in EU Member States - Dimensions and Dynamics	Philippe Van Kerm	partner	CEPS/INSTEAD	€ 1,000.00
FNR/07/ MA5/05	Development of a Damage Tolerant Composite material based on advanced Interface modelling, Fabrication and health Monitoring - DOCIFAM	Salim Belouettar	coordinator	Centre de Recherche Public Henri Tudor	€ 2,500.00
FNR/07/ MA5/07	Semiconducting copolymers, homopolymers and their alloys: towards a fundamental understanding of their self-assembling with respect to the functionality of photoactive materials and devices thereof - Photoalloys	Henri-Noël Migeon	partner	Centre de Recherche Public Gabriel Lippmann	€ 1,000.00
FNR/07/ MA5/08	DEsign and manufacturing of a safety and environmental In Line industrial PIlot Prototype for mass production of NAno-structured thin film - NAPPILIDE	Henri-Noël Migeon	partner	Centre de Recherche Public Gabriel Lippmann	€ 1,000.00
FNR/07/ MA5/10	Monitoring and modelling flash floods for hazard mitigation in a changing world - EUFLASHFLOOD	Lucien Hoffmann	partner	Centre de Recherche Public Gabriel Lippmann	€ 1,000.00
FNR/07/ MA5/11	Nano Array Devices for Disease-oriented Single Cell Proteomics - 1CellNanoDiagnostics	Henri-Noël Migeon	partner	Centre de Recherche Public Gabriel Lippmann	€ 1,000.00
FNR/07/ MA5/12	Termite gut and termite hills as naturally optimized sources of lignocellulolytic enzymes - TERMITOLYSIS	Lucien Hoffmann	partner	Centre de Recherche Public Gabriel Lippmann	€ 1,000.00
FNR/07/ MA5/13	Advanced impacts evaluation methodology for innovative freight transport solutions - AIMS	David Evaristo	partner	Centre de Recherche Public Henri Tudor	€ 3,500.00
FNR/07/ MA5/14	Modelling and experimental characterization of poymer nanocomposites: processing, thermo-mechanical behaviour and degradation - NaSCOM	Salim Belouettar	partner	Centre de Recherche Public Henri Tudor	€ 1,000.00
FNR/07/ MA5/15	Electroactive Morphing - EMORPH	Salim Belouettar	partner	Centre de Recherche Public Henri Tudor	€ 1,000.00

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MA6: Mobility of Researchers

Reference	Name and Institution of the Guest Researcher and the Host Title of the Research Project	Submitter	Submitting Institution	Date of the Activity	FNR Contribution in EUR
FNR/07/ MA6/01	Séjour de Clément Thomas et Céline Hoffmann du CRP Santé à l'Institut de Biologie Moléculaire des Plantes à Strasbourg **Sujet d'activité:** Elucidation of the mechanism of actin bundling by NtWLIM1	André Steinmetz	Centre de Recherche Public de la Santé	en 2007	€ 3,250.00
FNR/07/ MA6/02	Séjour du prof. Said Ahzi de l'Université Louis Pasteur de Strasbourg au CRP Henri Tudor **Sujet d'activité:** Experimental Characterization and Theoretical Modelling of Polymer Nanocomposites	David Ruch	Centre de Recherche Public Henri Tudor	1er septembre - 31 octobre 2007	€ 6,100.00
FNR/07/ MA6/03	Séjour du Dr Salim Belouettar du CRP Henri Tudor à l'Université de Swansea (U.K.) **Sujet d'activité:** Automatic adaptive finite element mesh generation over an arbitrary three-dimensional domain oriented towards parallel algorithm	Jos Schaefers	Centre de Recherche Public Henri Tudor	1er juillet - 31 août 2007	€ 6,535.60
FNR/07/ MA6/04	Séjour de Mme Núria Martínez Carreras du CRP Gabriel Lippmann à l'Université d'Exeter (U.K.) **Sujet d'activité:** Identifying suspended sediment sources using the fingerprinting approach	Lucien Hoffmann	Centre de Recherche Public Gabriel Lippmann	1er octobre - 31 décembre 2007	€ 2,100.00
FNR/07/ MA6/05	Séjour du Dr Kittichai Lavangnananda de King Mongkut's University of Technology Thonburi (Bangkok) chez le prof. Pascal Bouvry de l'Université du Luxembourg et vice-versa **Sujet d'activité:** Joint research in the domain of soft computing for ad-hocs netwo	Pascal Bouvry	Université du Luxembourg	entre août 2007 et janvier 2008	€ 8,000.00
FNR/07/ MA6/07	Séjour du Prof Jeffrey T. Freymeuller de l'Université d'Alaska à l'Université du Luxembourg **Sujet d'activité:** Quantifying ice-mass changes in Alaskan Mountain Glaciers	Tonie Van Dam	Université du Luxembourg	1er septembre - 30 novembre 2007	€ 11,350.00
FNR/07/ MA6/08	Séjour de M. Lyubomir Popov du l'Université de Sofia à l'Université du Luxembourg **Sujet d'activité:** Determination of man-made alpha radionuclides in environmental samples using radiochemical methodologies	Antoine Kies	Université du Luxembourg	15 septembre - 15 décembre 2007	€ 7,945.35
FNR/07/ MA6/09	Séjour du prof. Jürgen Sachau de l'Université du Luxembourg à l'Université de Kassel **Sujet d'activité:** Sustainable Biocarbon to Energy Chains and Systems	Juergen Sachau	Université du Luxembourg	1er juillet - 15 juillet 2007	€ 1,782.00
FNR/07/ MA6/10	Séjour de Tom Krantz de l'Université du Luxembourg à la Humboldt Universität Berlin **Sujet d'activité:** Classification des espaces symétriques et holonomie des connexions sans torsion	Tom Krantz	Université du Luxembourg	1er juillet 2007 - 30 juin 2008	€ 36,500.00
FNR/07/ MA6/11	Séjour du prof. Naceur de l'Université de Technologie de Compiègne au CRP Henri Tudor **Sujet d'activité:** Conception - fabrication intégrée de pièces de précision en tôlerie fine produites par Gotscholl-Alcuilux	Salim Belouettar	Centre de Recherche Public Henri Tudor	1er septembre - 30 nobembre 2007	€ 9,100.00
FNR/07/ MA6/12	Séjour du prof. Walter Carnielli de l'University of Campinas (Brésil) à l'Université du Luxembourg **Sujet d'activité:** Mixing Logics and Extra-Logical Basis of Reasoning	Leon Van Der Torre	Université du Luxembourg	1er août 2008 - 31 janvier 2009	€ 19,800.00
FNR/07/ MA6/13	Séjour du Dr Evelyn Ziegler du Forschungsinstitut für Deutsche Sprache de l'Université de Marburg à l'Université du Luxembourg **Sujet d'activité:** Struktur und Dynamik des Schriftsprachegebrauchs in Luxemburg im 19. angehenden 20. Jahrhundert	Peter Gilles	Université du Luxembourg	1er octobre 2007 - 30 septembre 2008	€ 36,650.00

Reference	Name and Institution of the Guest Researcher and the Host Title of the Research Project	Submitter	Submitting Institution	Date of the Activity	FNR Contribution in EUR
FNR/07/ MA6/14	Séjour de M. Kristian Mortensen de l'University of Southern Denmark à l'Université du Luxembourg **Sujet d'activité:** Patterns of learning participation in multilingual children's multiparty interactions	Gudrun Ziegler	Université du Luxembourg	1er au 31 juillet 2007	€ 2,300.00
FNR/07/ MA6/15	Séjour de Mme Tzvetana Nonova de l'Université de Sofia à l'Université du Luxembourg **Sujet d'activité:** Radioéléments dans le système sol-plante	Antoine Kies	Université du Luxembourg	1er mars - 30 juin 2008	€ 11,400.00
FNR/07/ MA6/16	Séjour de M. Mathieu Yalire Mapendo du Centre de Recherche en Sciences Naturelles de Lwiro à l'Université du Luxembourg **Sujet d'activité:** Radon et radioéléments naturels en volcanologie	Antoine Kies	Université du Luxembourg	avril - juin 2008	€ 7,550.00
FNR/07/ MA6/18	Séjour du prof. Omar Oussouaddi de l'Université de Errachidia au CRP Henri Tudor **Sujet d'activité:** Durabilité et fiabilité des membranes d'étanchéités en superalliage à base de nickel	Salim Belouettar	Centre de Recherche Public Henri Tudor	1er février - 30 avril 2008	€ 9,500.00
FNR/07/ MA6/19	Séjour du prof. José Joaquim de Almeida Grácio de l'Université de Aveiro au CRP Henri Tudor **Sujet d'activité:** Theoretical Modeling and Numerical Simulations of Polymer Nanocomposites	Salim Belouettar	Centre de Recherche Public Henri Tudor	1er janvier - 29 février 2008	€ 6,300.00
FNR/07/ MA6/21	Séjour du Dr Michaël Hermoso du MNHN à l'Université d'Oxford **Sujet d'activité:** Examen des liens existant entre les échanges de CO_2 entre l'Atmosphère et l'Océan durant la période du Jurassique inférieur	Georges Bechet	Musée National d'Histoire Naturelle	1er janvier - 30 juin 2008	€ 12,720.00
FNR/07/ MA6/22	Séjour de Mme Evelyne Berger de l'Université de Neuchâtel à l'Université du Luxembourg **Sujet d'activité:** Discourse competences: perspectives on learning at the primary and secondary school	Gudrun Ziegler	Université du Luxembourg	1er juillet 2008 - 30 juin 2009	€ 31,000.00
FNR/07/ MA6/23	Séjour du Dr Héctor del Castillo de l'Université de Alcalá à l'Université du Luxembourg **Sujet d'activité:**The construction of identity - Focusing the analysis of learning processes in multilingual interactions	Gudrun Ziegler	Université du Luxembourg	février et juin 2008	€ 4,900.00
FNR/07/ MA6/24	Séjour du Dr Ana Belén García-Varela de l'Université de Alcalá à l'Université de Luxembourg **Sujet d'actvitié:** The construction of knowledge - Focusing the analysis of learning processes in multilingual interactions	Gudrun Ziegler	Université du Luxembourg	février et juin 2008	€ 4,900.00
FNR/07/ MA6/25	Séjour du Dr Jean-François Hausmann du CRP Gabriel Lippmann à l'Université Catholique de Louvain **Sujet d'activité:** Cryopreservation of potato and popular plant tissues	Lucien Hoffmann	Centre de Recherche Public Gabriel Lippmann	1er janvier - 21 mars 2008	€ 8,412.00
FNR/07/ MA6/26	Séjour de M. Guy Schumann du CRP Gabriel Lippmann à l'Université de Bristol **Sujet d'activité:** Evaluating a land-surface model with remotely sensed soir moisture fields	Lucien Hoffmann	Centre de Recherche Public Gabriel Lippmann	1er janvier - 30 septembre 2008	€ 27,592.00
FNR/07/ MA6/27	Séjour du prof. Franck Levprévost de l'Université du Luxembourg chez le prof. Michael E. Pohst de la Technische Universität Berlin et vice-versa **Sujet d'activité:** Théorie algorithmique des nombres et ses interactions avec la cryptographie et la sécurité	Franck Leprévost	Université du Luxembourg	dans le courant de l'année 2008	€ 4,300.00

Accepted Proposals in 2007

MA7: Training in Research Project Management

Reference	Title of the Activity	Participant	Participating Institution	Date of the Activity	FNR Contribution in EUR
FNR/07/ MA7/01	Project Management Course at Oxford University	Marcos Da Silveira	Université du Luxembourg	20 - 22 juin 2007	€ 1,807.03

Accepted Proposals in 2007

MA8: National Research Coordination

Reference	Title of the Activity	Submitter	Submitting Institution	Date of the Activity	FNR Contribution in EUR
FNR/07/ MA8/02	Développement et amélioration d'une banque de données des arrêts cardiaques extrahospitaliers	Carlo Clarens	Service d'Incendie et d'Ambulance de la Ville de Luxembourg	1er juillet 2007 - 31 mars 2008	€ 24,600.00
FNR/07/ MA8/03	Information infrastructure supporting research - A national consortium for scientific research	Monique Kieffer	Bibliothèque Nationale de Luxembourg	1er janvier 2008 - 31décembre 2010	€ 300,000.00
FNR/07/ MA8/04	Collecte de données relatives aux maladies cardiovasculaires et aux pathologies tumorales auprès des patients admis, respectivement à l'Institut National de Chirurgie Cardiaque et Interventionnelle (INCCI) et au Centre National de Radiothérapie	Anastase Tchicaya	CEPS/INSTEAD	1er janvier 2008 - 31 décembre 2009	€ 15,000.00
FNR/07/ MA8/05	Collaboration entre le CRP Henri Tudor et le STATEC visant à recenser les enquêtes et données collectées, à assurer la mise en relation entre les bases de données existantes et les enquêtes et enfin, à développer une interface complète de consultation des données	Jean-Charles Bernacconi	Centre de Recherche Public Henri Tudor	1er janvier - 31 décembre 2008	€ 25,000.00

06 Promotion of Scientific Culture

Promotion of Scientific Culture FNR Strategic Priority FNR promotion activities in 2007 Science Circus

Why promote science and technology?

The scientific and technological development is a conditio sine qua non to achieve a knowledge society, a society which depends more and more on the scientific discoveries and the application of this new knowledge via technology.

Scientific or technological knowledge or at least a good general appropriation of science[1] and technology (S&T), i.e. a scientific culture[2], has thus become essential in our everyday life. Consequently, the need to make S&T accessible and comprehensible for the public, and especially for the young, is now an important objective all over Europe.

Yet, recent studies - including one in Luxembourg show that the perception that the public and the young have of S&T, and in particular of research, remains ambiguous and that scientific subjects are often looked upon as difficult and not very attractive and this all the more by women and young girls.

Consequently, to support the appropriation of S&T, it is necessary to fill the gap between their role in the contemporary world and the attention which is given to the understanding of sciences and their applications, in particular in teaching. Otherwise, there is a political, economic and social risk to witness rejection of science and innovation.

Nevertheless, to fill the gap in order to avoid rejection or to justify the invested sums is not the only goal: to fill this gap is also to give people, and above all the young and thus the future decision makers, the means of understanding and choosing in all autonomy. At the same time, a public engagement will profit science: Promotion activities and strong role-models are likely to increase young people's interest for S&T and why not for choosing a scientific career.

How to communicate?

Through taking S&T to the young, finding means of interaction between scientists and the young, emphasizing the fun factor of science and research, communicating the excitement linked to a scientific discovery and the benefits of these applications for our personal lives, etc.

This interaction can take various forms - interactive expositions, new methods of teaching, discovery workshops, publications, debates, mobilisation of professionals in school classes, or directly in the street and public places, support for science teachers, open days in laboratories, etc.

FNR Strategic Priority

The FNR wishes to strengthen the link between science and society and the general public to feel concerned with science. Promotion activities are mostly targeted towards young people, since they will be tomorrow's citizens and researchers.

A key instrument to strengthening scientific culture in Luxembourg is the ProScience group, which was set up by the FNR in 2007 and regroups all public research actors as well as the Ministry of Education and the Service National de la Jeunesse[3].

The ProScience group's objectives are to facilitate networking between science communicators, to facilitate organisation of promotion activities, to increase the impact of existing promotion activities as well as to increase the research institutions' support of promoting scientific culture.

1. Including the social sciences.

2. According to a definition of Gilbert and Stocklmayer, two professional science communicators, the concept of "scientific culture" is not to be confused with "scientific knowledge", i.e. the knowledge and the comprehension of facts, ideas and scientific policies.
Scientific culture is a set of attitudes, a predisposition towards science and technology, which are based on beliefs and feelings and which are manifest in a series of skills and behavioural intentions. The skills of accessing scientific and technological knowledge and a sense of ownership of that knowledge will impart a confidence to explore its ramifications. This will lead, at some time, to an understanding of key ideas/products and how they came about, to an evaluation of the status of scientific and technological knowledge and its significance for personal, social and economic life. A society which has a scientific culture is a society which has incorporated science and technology in its collective identity just like, for example, culture or history.

3. Current members are the FNR, the Ministry of Research, the Ministry of Education, Luxinnovation, the CRP Santé, the CRP Henri Tudor, the CRP Gabriel Lippmann, the CEPS/Instead, the University of Luxembourg, the National Museum of Natural History, the Association Jeunes Scientifiques Luxembourg, and the Service National de la Jeunesse.

Parallel to setting up the ProScience group, the FNR carried out a phone survey in May 2007 to test the public perception of scientific research in Luxembourg. From the feedback of these initiatives, five main conclusions could be drawn:

- Research actors mostly communicate facts, not stories. There is no dialogue with the public. The public is not aware of actors and/or activities in Luxembourg and its perception of science and R&D is negative.
- As the Luxembourg research and academic domain is still very young, there is no strong scientific culture.
- Although there are good activities aiming at promoting scientific culture, they lack impact because they are not interlinked as actors do not interact and communicate sufficiently.
- The school system is weak when it comes to awakening students' interest in science and the researcher's career.
- There is a lack of science communicators and of resources in general; additionally, the various institutions do not sufficiently encourage their researchers to take part in actions promoting scientific culture. The emphasis is mostly put on the research work only.

The detailed results of the 2007 phone survey can be obtained at the FNR (anne.schroeder@fnr.lu).

Another key instrument for strengthening scientific culture is the FNR's Accompanying Measure AM1 for promoting scientific culture. The biannual Science Festival, for instance, is partly funded through this measure.

In addition, the participative and open approach launched through the Foresight Exercise is a way forward to strengthen the links between those who produce scientific research and those who are the users of research.

FNR promotion activities in 2007

Besides setting up the ProScience group and carrying out a phone survey, the FNR has financed, organised and/or co-organised the following activities in 2007:

- Science Circus

  The Science Circus, a special edition of the Science Festival, was organised by the Musée national d'histoire naturelle on 22 and 23 September 2007 in and around the Museum and the Abbaye de Neumünster. Funded by "Luxembourg and the Grande Région, European Capital of Culture 2007" as well as by the FNR, the Science Circus was a huge success, with roughly 7,000 visitors (www.science-festival.lu).

Promotion of Scientific Culture Foire de l'étudiant 2007 Job Fair meet@uni.lu 2007 Highlights 2008

- Foire de l'étudiant 2007

  Together with other players from the public research sector as well as Fanuc Robotics, the FNR was again present at the Foire de l'étudiant 2007 with the aim to inform young students on research opportunities in Luxembourg and to encourage them to choose a career in research.

- Job Fair meet@uni.lu 2007

  In December 2007 the FNR was present for the 3rd time at the University of Luxembourg's job fair meet@uni.lu, where it presented research activities and opportunities in Luxembourg to university students from the Grand-Duchy and abroad.

2008 Highlights

As in 2007, the FNR will continue to build up its efforts regarding the promotion of scientific culture in Luxembourg.

Besides a renewed presence of the FNR and other research players at the Foire de l'étudiant 2008, which will concentrate on science careers, and the job fair meet@uni.lu, the FNR will develop support mechanisms for researchers wishing to promote scientific culture. Among others, workshops are foreseen on communicating science to the public/media and on communicating science to the young.

The main highlight of the year will be the Researchers' Night 2008, which will take place at various locations in the City of Luxembourg on Friday, 26 September 2008. The Researchers' Night is organised by the FNR and co-funded by the FNR and the European Commission within the 7th framework-programme. Additionally, the project is supported by the group for the promotion of scientific culture ProScience. The objective of the event is to present and to promote the career of the researcher, to show that the researcher is a person "like everybody else" and to raise interest and curiosity for science and technology among young people.

Four types of activities will be presented:

- Scientific workshops on the Place d'Armes.
- A scientific rally with scientific workshops on several stands throughout the city.
- Three Science Cafés will be organised in local pubs.
- Street animations and performances as well as a final concert.

Furthermore, the development of a new website for the promotion of scientific culture, targeted at the young, will be started in 2008, and a re-edition of the 2005 activity "Firwat net Fuerscher/Firwat net Fuerscherin?" is also foreseen.

07 The Reform of the National Research Training Grant Scheme - *Aides à la formation-recherche*

The Reform of the National Research Training Grant Scheme

AFR Management Role of AFR in Structuring Research Ca
Private R&D

The reform of the research-training fellowship scheme BFR, initiated in 2006, was continued in 2007 with the deposition of a new bill and a "Règlement Grand-Ducal (RGD)" to the Parliament.

The bill comprises, along the transfer of the PhD and postdoc grant management from the Ministry of Research (MCESR) to the FNR, modifications in the current labour law and in the attribution practices of grants. The suggested modifications comply with the principles advocated in the "European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers".

One of the main new elements under the reformed scheme (called "AFR – Aides à la Formation Recherche") is the introduction of fixed-term work contracts. Whether at PhD or at postdoctoral level, the future AFR instrument is actively encouraging the conclusion of work contracts between AFR beneficiaries and their host institutions, thereby giving the beneficiaries access to social security coverage. The relative amounts of the AFR grants are increased and special incentives exist for research projects carried out in the private sector.

The AFR bill comprises a further change in Luxembourg labour law, in that fixed-term contracts for researchers, instead of being limited to 2 years, are to be extended to 5 years, including renewals.

As opposed to the BFR scheme, beneficiaries under the AFR scheme are eligible consecutively for PhD and for postdoctoral funding (under the condition that they respect a mobility clause).

Overall, the new AFR scheme contributes to the improvement of the young researcher's training conditions and enhances the career development of researchers.

Between July and December 2007, the four professional chambers Chambre des Employés Privés, Chambre des Métiers, Chambre de Travail, and Chambre de Commerce have issued their comments regarding the AFR bill and the RGD. In general, the new bill is welcomed by the chambers; in particular, the attribution of work contracts to the AFR beneficiaries is very much appreciated.

The new AFR law is thus expected to be adopted in mid 2008.

The full texts of the AFR bill and the RGD together with the comments by the four professional chambers as well as updated information on the AFR reform are available under the "NEWS" section of the FNR website www.fnr.lu.

AFR Management

According to estimations by the MCESR, the AFR budget is expected to evolve in the coming years from EUR 11.3 million in 2008 to EUR 17.3 million in 2010, thereby representing a substantial proportion of the future total FNR budget.

Throughout 2007, both the FNR and the MCESR have been working on the elaboration of a convention between the Luxembourg Government and the FNR, defining the general framework and terms and conditions of the governmental financial support for the AFR activity.

In mid 2007, the FNR has set up an AFR team to develop and implement the AFR management system and eventually to take over the processing of the future AFR grant applications and AFR attributions.

1. Researchers will only be eligible for postdoctoral funding if they move to a country different from the country they have been working in during the preceding two years.

A key element of the new AFR management system is the implementation of a web-based grant management system at the FNR. The system is expected to be operational in early 2009 and will allow the online submission of grant applications as well as the online remote evaluation of proposals by the thematic experts.

Role of AFR in Structuring Research Careers in Luxembourg Public and Private R&D

By managing the future AFR funding scheme, the FNR will be holding a key position in the recruitment of young researchers and hence in the overall development and strengthening of young researchers and human resources in Luxembourg R&D.

Through its active reporting and monitoring of PhD and postdoc training as well as its networking activities with researchers in Luxembourg and abroad, the AFR activity will contribute essentially to assist the Government when planning policies that have an impact on research careers.

Under the new AFR scheme, a great importance is also attributed to the preservation of the contacts with the researchers well beyond the conclusion of their doctoral and/or postdoctoral research. Several initiatives are foreseen in order to reinforce the link between researchers and the Luxembourg research community, e.g. the creation of an AFR Alumni network, annual awards for the best young researchers under the AFR scheme, the recruitment of Luxembourg researchers for the reviewing of proposals, support for training activities, etc.

Since 2007, the AFR programme managers have been actively participating in the FP7 PEOPLE programme, as national experts and National Contact Point (NCP), both in close collaboration with Luxinnovation who is the coordinating FP7 NCP for Luxembourg. The FNR envisages submitting a proposal to the European COFUND scheme under FP7, call that was published in November 2007. If successful, the AFR postdoc grants will be branded as supported by the Marie-Curie funding scheme, thereby receiving increased international visibility.

A collaboration with the European Network on Research Careers and the ESF Member Organisation Forum on Research Careers has been established since 2006 and 2007 respectively and will be actively pursued in the future. The AFR programme managers further participate in the setting up of the National Mobility Center at the University of Luxembourg.

In their efforts to continuously improve researchers' conditions and mobility to and from Luxembourg, and in compliance with the COFUND objectives, it is envisaged for the FNR to sign the "European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers" in 2008. The preparation of the signature of the Charter and Code by the FNR involves an analysis of the experiences and the current state and may lead to adaptations of future practices of the FNR funding activities (AFR, CORE, ATTRACT, INTER and Accompanying Measures) in terms of research career development.

08 Activities Planned for 2008

Activities Planned for 2008 Implementation Preparation an Accompanying Measures Promotion of Scientific Culture Living (AAL) Programme

Implementation of the New FNR CORE Thematic Programme

The direct outcome of the Foresight Exercise and the subsequent decision by the Government to define national research priorities is the creation of a new thematic research programme at the FNR called CORE. The prime objective of CORE is to foster scientific quality in Luxembourg public research and in selected research areas. CORE projects should build the residing capacity of expertise in these areas, thus ensuring long-term socio-economic benefits.

For further information on the programme and the first call for proposals, see Chapter 1 of the present report or go to www.fnr.lu.

Preparation and Signing of the Performance Contract between the FNR and the Government

In 2006, the Ministry of Research published the OECD Country Report on Luxembourg's National Innovation System. One of the main recommendations of the authors of the study was the implementation of so-called "performance contracts" between the Ministry of Research and the main actors in Luxembourg research and innovation, including the FNR. These multi-annual contracts should set for each player its mission and related target groups, its strategy for the given time period and a set of key performance indicators to check whether the set objectives have been attained or not.

The first performance contract between the Government and the FNR will be set up for the period 2008-2010 and is due to be signed mid-2008.

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

The Luxembourg Research Grant 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 Aides à la Formation-Recherche (AFR) will be transferred to the National Research Fund after the adoption of a new law, probably in late 2008.

For further information, see Chapter 7 of the present report or visit www.fnr.lu.

Reform of the Accompanying Measures

Based on the results of the survey carried out among applicants in 2007 and on the experience gained so far, the Accompanying Measures will be reformed in 2008 so as to be even more efficient, transparent and user-friendly.

For further information, see Chapter 5 of the present report or visit www.fnr.lu.

Promotion of Scientific Culture

As in 2007, the FNR will continue to build up its efforts regarding the promotion of scientific culture in Luxembourg.

Besides a renewed presence of the FNR and other research players at the Foire de l'étudiant 2008, which will concentrate on science careers, and the job fair meet@uni.lu, the FNR will develop support mechanisms for researchers wishing to promote scientific culture. Among others, workshops are foreseen on communicating science to the public/media and on communicating science to the young.

d Signing Transfer Reform of the
Launch of the Ambient Assisted

The main highlight of the year will be the Researchers' Night 2008, which will take place at various locations in the City of Luxembourg on Friday, 26 September 2008. The Researchers' Night is organised by the FNR and co-funded by the FNR and the European Commission within the 7th framework-programme. Additionally, the project is supported by the group for the promotion of scientific culture ProScience. The objective of the event is to present and to promote the career of the researcher, to show that the researcher is a person "like everybody else" and to raise interest and curiosity for science and technology among young people.

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New Calls in the Framework of the INTER Programme

In 2002 further calls for project proposals will be launched, for instance in the framework of the Materials World Network, ERA-Net MATERA, ERA-Net NEURON, etc.

A new programme will also be launched called Ambient Assisted Living (AAL).

The population of European citizens over the age of 65 is expected to increase by 40 % from 2010 to 2030. Spending on pensions, healthcare and long term care will triple by 2050. All EU member states will be confronted to these new challenges, which will require solutions as fast as possible.

The AAL programme is an initiative from the European Commission and 21 participating countries. The new programme will generate opportunities for Information and Communication Technologies (ICT) research stakeholders to develop projects for an emerging lead market. It will also provide healthcare institutions with solutions that fit future economic perspectives. The AAL Joint Programme calls for proposals will be published in April 2008 with a total funding of EUR 57.7 million.

For Luxembourg, two organisations will be in charge of the implementation of the programme at a national level: the FNR will finance public sector initiatives through the INTER Programme while Luxinnovation will support and provide funding for private sector projects.

For further details on open INTER calls, please visit www.fnr.lu.

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

In 2008, the FNR will sign the European Charter for Researchers and Code of Conduct for their Recruitment. Further information on the Charter can be found online: http://ec.europa.eu/eracareers.

09 Tasks and Operation

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 FNR 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 FNR

The role of the FNR is:

- 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.

In the performance of its tasks, the FNR may also:

- 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.

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.

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, France
- Marco Walentiny, 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, until October 2007
- Claude Wehenkel, Public Research Centre Henri Tudor
- Eric Tschirhart, University of Luxembourg
- Lucienne Blessing, University of Luxembourg
- Jean-Paul Lehners, University of Luxembourg, until June 2007
- Gusty Feyder, DuPont Teijin Films Luxembourg S.A.
- Marc Gengler, École Supérieure d'Ingénieurs de Luminy/Marseille, France
- 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
- François Schneider, National Health Laboratory
- Pierre Wiltzius, Beckman Institute, University of Illinois, USA

The Secretariat

- 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
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- Marie-Claude Marx, Programme Manager, marie-claude.marx@fnr.lu
- Andreea Monnat, Programme Manager, andreea.monnat@fnr.lu
- Susanne Rick, Programme Manager, susanne.rick@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
- Josiane Staus, Administrative Assistant, josiane.staus@fnr.lu (since 1 May 2008)

- Sabrina Wolff, on a temporary placement from 19 March to 15 June 2007 and on a student vacation assignment from 15 July to 31 August 2007
- Marco Marques Pinto, from 1 July to 31 July 2007 (student vacation assignment)
- Nico Zhan, from 1 September to 30 September 2007 (student vacation assignment)

10 Annual Accounts 2007

Report of the Réviseur d'entreprises

To the Board of Administration
NATIONAL RESEARCH FUND
Luxembourg, March 7, 2008

Following our appointment by the Board of Administration, we have audited the accompanying annual accounts of National Research Fund, which comprise the balance sheet as at December 31, 2007 and the profit and loss account for the year then ended, and a summary of significant accounting policies and other explanatory notes.

Board of Administration responsibility for the annual accounts

The Board of Administration is responsible for the preparation and fair presentation of these annual accounts in accordance with Luxembourg legal and regulatory requirements relating to the preparation of the annual accounts. 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 Administration, 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 December 31, 2007, and of the results of its operations for the year then ended in accordance with the Luxembourg legal and regulatory requirements relating to the preparation of the annual accounts.

Tom Pfeiffer
Partner

Luc Brucher
Director

PKF ABAX Audit
Réviseurs d'Entreprises

Balance Sheet

ASSETS	2007 EUR	2006 EUR
FIXED ASSETS	52,858.79	34,711.93
Intangible assets (note 3)	-	0,04
Tangible assets (note 4)	52,858.79	34,711.93
CURRENT ASSETS	37,692,137.86	31,756,341.75
Other debtors (note 5)	6,521,450.59	1,266,941.31
Cash at bank and in hand	31,170,687.27	30,489,400.44
PREPAYMENTS AND ACCRUED INCOME	20,187.79	21,395.17
	37,765,184.44	31,812,448.85

LIABILITIES		
CAPITAL AND RESERVES	6,116,269.88	4,072,277.90
Reserve fund (note 6)	4,072,277.90	2,246,885.40
Surplus/(deficit) for the year	2,043,991.98	1,825,392.50
CREDITORS	511,859.01	323,975.49
Amounts owed to credit institutions	15,359.44	-
Trade creditors	173,888.02	40,623.06
Tax and social security debt	35,643.71	24,211.46
Other creditors	286,967.84	259,140.97
PREPAYMENTS AND ACCRUED INCOME	31,137,055.55	27,416,195.46
Deferred contributions and funds (note 7)	31,136,750.95	27,416,195.46
Deferred revenue	304.60	-
	37,765,184.44	31,812,448.85

Profit and Loss Account

Contributions and funds (note 7)	2,900,000.00	2,730,000.00
Other operating incomes (note 8)	9,140.35	26,212.92
Other external charges	(1,288,345.62)	(1,162,813.26)
Staff costs (note 10)	(869,057.47)	(608,987.98)
Value adjustments in respect of tangible and intangible assets (notes 3 and 4)	(25,732.86)	(20,515.76)
OPERATING RESULT	726,004.40	963,895.92
Other interests receivable and similar incomes	1,320,144.75	865,229.77
Interests payable and similar charges	(2,157.17)	(3,733.19)
Financial result	1,317,987.58	861,496.58
PROFIT AND LOSS ON ORDINARY ACTIVITIES	2,043,991.98	1,825,392.50
Extraordinary incomes	-	-
SURPLUS/(DEFICIT) FOR THE YEAR	2,043,991.98	1,825,392.50

NOTES TO THE ACCOUNTS
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 Administration, 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 Administration 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 valued in the balance sheet at their nominal value.

Capital

The Fund was not endowed with any capital at its constitution. The capital is established by the operating annual profits, as far as the Board of Administration 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 1.1.2007	9,114.86
Acquisitions of the financial year	-
At 31.12.2007	9,114.86
Value adjustments	
At 1.1.2007	(9,114.82)
Adjustments of the financial year	-
At 31.12.2007	(9,114.86)
Net book value at 31.12.2007	**-**

NOTE 4 – TANGIBLE ASSETS

	Other fixtures and fittings, tools and equipment EUR
Acquisition cost	
At 1.1.2007	141,210.27
Acquisitions of the financial year	43,879.72
At 31.12.2007	185,089.99
Value adjustments	
At 1.1.2007	(106,498.34)
Adjustments of the financial year	(25,732.86)
At 31.12.2007	(132,231.20)
Net book value at 31.12.2007	**52,858.79**

NOTE 5 – OTHER DEBTORS

At December 31, 2007 the other debtors are mainly composed of the remaining financial contribution from the Ministry of Culture, Higher Education and Research amounting to EUR 6.200.000,00.

NOTE 6 – RESERVE FUND

	EUR
At 1.1.2007	2,246,885.40
Movements on the year Allocation of the 2006 profit according to the Board of Administrators meeting of 23/03/2007	1,825,392.50
At 31.12.2007	4,072,277.90

NOTE 7 – PREPAYMENT AND ACRRUED INCOME - LIABILITIES

During the year 2007, the National Research Fund received the amount of EUR 18.000.000,00 (2006: EUR 14.500.000,00) as financial contribution for the year 2007.

The funds received from the State of Luxembourg intended for the different programs, accompanying measures and operating charges evolved between 2006 and 2007 as following:

	2006 EUR	Allocations 2007 EUR	2007 EUR
Program "SECOM"	7,500,000.00		7,500,000.00
Program "NANO"	6,700,000.00		6,700,000.00
Program "EAU"	5,000,000.00		5,000,000.00
Program "BIOSAN"	8,500,000.00	2,000,000.00	10,500,000.00
Program "VIVRE"	11,000,000.00	1,000,000.00	12,000,000.00
Program "TRASU"	4,500,000.00	1,000,000.00	5,500,000.00
Program "SECAL"	4,000,000.00	3,500,000.00	7,500,000.00
Program "INTER"	1,500,000.00	4,200,000.00	5,700,000.00
Program "ATTRACT"	1,000,000.00	2,000,000.00	3,000,000.00
"Accompanying measures"	4,540,000.00	1,400,000.00	5,940,000.00
Operating charges	7,098,900.00	2,900,000.00	9,998,900.00
	61,338,900.00	**18,000,000.00**	**79,338,900.00**

The funds received by the State of Luxembourg for the year 2007 which haven't been redistributed to the different partners have the following impact on the deferred contributions and funds:

	EUR
Deferred contributions and funds	
At 1.1.2007	27,416,195.46
Movements on the year	
Funds received in 2007	18,000,000.00
Payments to the partners concerning the research programs	(10,652,186.00)
Payments to the partners concerning the accompanying measures	(727,258.51)
Operating charges	(2,900,000.00)
At 31.12.2007	**31,136,750.95**

At December 31, 2007 the funds received by the State of Luxembourg operating charges excluded, the concluded engagements towards the partners as well as the amounts paid to these are the following:

	EUR Received allocations*	EUR Concluded engagements	EUR Paid amounts
Program "SECOM"	7,500,000.00	7,184,543.79	5,485,359.79
Program "NANO"	6,700,000.00	6,521,578.41	5,635,048.44
Program "EAU"	5,000,000.00	4,641,089.22	4,473,809.22
Program "BIOSAN"	10,500,000.00	9,123,019.51	5,201,678.80
Program "VIVRE"	12,000,000.00	11,947,472.03	6,001,194,92
Program "TRASU"	5,500,000.00	5,862.045.65	3,595,000.00
Program "SECAL"	7,500,000.00	5,178.665.10	3,468,427.95
Program "INTER"	5,700,000.00	781,967.00	402,000.00
Program "ATTRACT"	3,000,000.00	-	-
"Accompanying measures"	5,940,000.00	5,020,214.00	3,940,729.93
	69,340,000.00	**56,260,594,71**	**38,203,249.05**

* operating charges excluded

NOTE 8 – OTHER OPERATING INCOMES

The other operating incomes mainly correspond to reversals of provisions dated from 2006 amounting to EUR 8.927,00.

NOTE 9 – 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 10 – PERSONNEL

	2007	2006
Average number of persons employed during the financial year	13	10

NOTE 11 – 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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