Estonian Participation in the European Union Fifth RTD Framework Programme (FP5)

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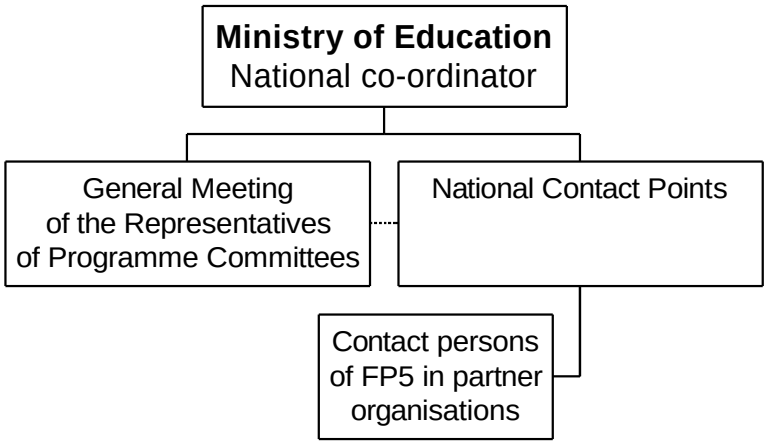
I. Estonian Participation in the European Union Fifth RTD Framework Programme (FP5)

Estonian association to FP5

Estonia was the first candidate country to associate with the 5th Framework Programme (1998-2002) from May 1999. Estonian scientists had gained some experience from participation in EU Framework Programmes already since 1993, starting with the PECO, COPERNICUS and INCO-COPERNICUS programmes. In case of FP5 the whole programme was for the first time opened to participation. Estonia pays the Programme participation fee similar to other associated countries. At the same time, favourable conditions were applied to all candidate countries. It included the reduction of the fee to 0.4, 0.6 and 0.8 of the full fee in the first three years and the possibility to cover a part of the fee from PHARE funds.

Supporting Structures



On the initiative of the European Commission the national contact point system was developed also in Estonia. General responsibility for the co-ordination of the participation of Estonia in FP5 lies on the Ministry of Education. The Ministry is represented in the related issues by the FP5 National Co-ordinator. The National Contact Point organisation is the Foundation Archimedes. The National Contact Points of FP5 subprogrammes at Foundation Archimedes carry out the task of information dissemination, training, consultancy and partner search. The first partners for National Contact Points at the institutional level are the FP5 contact persons.
The strategy of Estonian participation is prepared by the general assembly of the Estonian Representatives of FP5 Programme Committees, who were appointed by the Minister of Education.
National Contact Points have organised many information days and seminars on general questions and specific themes. In addition to information days and seminars a system of continuous information flow is organised through the Web site of Foundation Archimedes (http://www.irc.ee), different mailing lists and the printed newsletter *Innovaatika*. The National Contact Points have been trained in different seminars and

training courses at the European Commission in Brussels. Four Estonian experts have spent three months each at the European Commission as national seconded experts. Bilateral and multilateral co-operation among the NCP network has developed.
They participated in joint projects involving NCPs of different countries, such as BALTNET, TRANSTRACC, PROGRESS, BALTDYN, INNBANKSS, Womencraft, Idealist-5FP, CAFÉ and TRAIN-NET. Through the IRC and OPET networks they have contacts with the respective centres of 32 different countries. The most important co-operation partners were Germany (in 5 joint projects), Italy (4), Latvia (4), Lithuania (4), U.K. (4), Austria (3), Czech Republic (3) and Sweden (3).

Participation of Estonia

Estonia has participated very actively in the work of the programme. By November 2002 the Estonian researchers and engineers had participated in 809 project applications. There were 216 successful projects. Such indicators per number of inhabitants or GDP show Estonia as one of the most successful candidate countries and the success rate is close to the average indicator of the member states.

Table 1. Success rate of 5FP projects with Estonian participation.

Programme	Projects with Estonian participation			Projects co-ordinated by Estonia	
	Projects submitted	Successful projects	Success rate (%)	Projects submitted	Successful projects
QoL	256	54	21.1	21	5
IST	127	27	21.3	9	5
Growth	27	9	33.3	4	1
EESD Envir	156	57	36.5	6	0
EESD Energy	59	19	32.2	4	1
INCO	18	7	38.9	6	4
SME	51	15	30.0	8	5
IHP	115	28	24.3	19	1
Total	809	216	26.8	77	22

Judging by the number of applications, Estonia has participated most in the FP5 subprogrammes QoL and EESD. This above all demonstrates the higher potential of Estonian researchers and experience in international work in the fields of biosciences, medical sciences and environmental sciences. Among thematic programmes, the success rate has been the highest in EESD. The success in the Programme for Improving the Human Potential and the Socio-economic Knowledge Base and in INCO II in comparison with thematic programmes is due to the specific nature of these programmes. The budget of FP5 contains relatively more funds for grants in comparison with other areas. The INCO Programme, however, is mainly directed to increasing the participation of candidate countries.
It is important to note that Estonian researchers and engineers co-ordinated every tenth project. The success rate of projects submitted by them (28.6%) was somewhat higher than average for projects submitted with Estonian participation.

Estonian participation by organisations

Table 2. Applications of Estonian organisations for participation in 5FP

Programme	Number of projects	Universities and research institutions	Busi-nesses	Govern-ment agencies	Other	Number of organi-sations
QoL	256	213	26	13	24	276
IST	127	58	49	19	35	161
GROWTH	27	14	11	3	1	29
EESD – Environment	156	135	15	13	22	185
EESD – Energy	59	36	14	9	9	68
INCO	18	12	0	1	6	19
SME	51	18	12	5	32	67
IHP	115	103	11	1	22	137 (12 Marie Curie)
Total	809	589	138	64	151	942

Table 3. Successful projects with the participation of Estonian organisations

Programme	Number of projects	Universities and research institutions	Busi-nesses	Govern-ment agencies	Other	Total number of organisa-tions
QoL	54	42	6	2	7	57
IST	27	8	13	5	5	31
GROWTH	9	4	4	1	1	10
EESD – Environment	57	50	0	1	10	61
EESD – Energy	19	9	5	6	5	25
INCO	7	4	0	1	2	7
SME	15	7	1	1	13	22
IHP	28	22	3	0	6	31 (5 Marie Curie)
Total	216	146	32	17	49	244

Universities and research institutions have been the most active participants in FP5. In comparison with the 4th Framework Programme where Estonia participated as a "third country", the circle of Estonian participants has considerably widened. In the 4th Framework Programme, universities and research institutions accounted for 87% of participants, but according to the conclusions drawn on FP5 their participation has declined to 62.5%. The success of universities and research institutions is above all due

to the specific nature of these institutions and to experience in writing projects and in earlier participation in the framework programme.

Different support structures (foundations, non-profit organisations) of Estonian research and development activities have found participation in FP% to be a real challenge. Although their number is not comparable to the number of researchers or entrepreneurs operating in Estonia, the applications presented with their participation account for 18.7% of the total number and they were also much more successful than other organisations (ratio (in %) between the number of projects submitted and successful projects was –2.7 for universities and research institutions; -1.5 for businesses; +4 for support structures).

Industry-university relations in the FP5

One of the main ideas of FP5 was to connect research institutions and companies. Estonia is a country with small enterprises – in 91% of them the number of employees is below twenty. The enterprises (44%), their employees (49%) and assets (71%) are mainly located in the area of influence of the capital Tallinn, in the Harju county.
Scientific and developmental activities have been assembled into research and development institutions, the proportion of researchers and engineers who work in enterprises is minimal (enterprises provide occupation for 0.54 researchers and engineers per 1,000 employees). Implementation of research results has become a serious problem since enterprises are not enthusiastic about applying domestic research results.

Science enjoys a considerable potential in Estonia, which is evidenced by numerous publications in international literature on different specialities and active international partnership. There are two dominant centres – Tartu and Tallinn, where all ten universities and the majority of 25 applied higher educational institutions are situated. 13% of the Estonian population with working capacity is with a higher education.

In Estonia, universities have taken the initiative to bring universities and enterprises closer together. In order to more effectively implement their research results and stand up for their researchers' enterprising spirit, universities in every possible way facilitate the formation of spin-off firms (University of Tartu has given rise to ca 30 spin-off firms, Tallinn Technical University – to around 50).
This is a fully normal trend because in a knowledge-based economy, a university becomes a key element of the innovation system both as a human capital provider and a seedbed of new firms.

Enterprises make up 14.6% of applicants in FP5 – the projects oriented to information society (40.6% of all successful projects from enterprises) and biotechnology (18.7%) have been more successful.

About three-fourth (72%) of the applications by enterprises were presented only by themselves; applications made in partnership with Estonian research institutions amount to 23%. 76% of projects were co-ordinated by foreign organisations, mainly enterprises (41%) and research and development institutions (29%).

In applications the most frequent co-ordinators by country were institutions from Estonia (26.1%), from Germany (17.1%) and from Finland (11.7%). The most success-

ful projects were co-ordinated by Estonia (25%), Germany (14%) and the United Kingdom (10.7%).

Partners

Partners of Estonia in applications are mainly Scandinavian countries, but United Kingdom and Germany lead the ranking of successful project co-ordinators.

Table 4. Geographical distribution of successful projects with Estonian participation

Country	Total number of co-ordinated projects with Estonian participation	Among them successful
Germany	124	27
United Kingdom	107	43
France	49	14
Finland	95	14
Sweden	70	15
Netherlands	67	19
Denmark	31	10
Estonia	79	22
Italy	32	10
Austria	40	8
Iceland	3	1
Belgium	16	8
Spain	21	5
Ireland	13	3
Poland	10	3
Latvia	6	3
Norway	13	6
Slovenia	2	2
Portugal	6	2
Luxembourg	2	
Hungary	3	
Lithuania	2	
Greece	10	
Czech Republic	2	
Israel	1	
Cyprus	2	
Switzerland	1	1
Total	808	216

Two equal research centres have developed in Estonia – Tallinn and Tartu – from where 94.4% applications came. Tartu was more successful in the implementation of projects in the areas of natural sciences and health care, Tallinn in the areas of information society and energy.

Table 5. Proportion of different geographical centres of Estonia in FP5 projects

Programme	Organisations of the projects submitted				Organisations of successful projects			
	Total	Incl. (%)			Total	Incl. (%)		
		Tallinn	Tartu	Other		Tallinn	Tartu	Other
QoL	276	30.8	64.5	4.7	57	24.6	66.6	8.8
IST	161	67.1	29.8	3.1	31	61.3	32.3	6.4
GROWTH	29	82.8	13.8	3.4	10	70.0	30.0	0
EESD - Environment	68	67.7	13.2	19.1	25	80.0	4.0	16.0
EESD - Energy	185	48.6	42.2	9.2	61	45.9	45.9	8.2
INCO	19	42.1	57.9	0	7	0	100	0
SME	67	39.4	58.1	3.2	22	36.4	63.6	0
IHP	137	51.1	47.4	1.5	31	50.0	46.9	3.1
Total	942	48.6	45.8	5.6	244	45.9	47.1	7.0

Biggest achievements

Attainment of two Centres of Excellence projects at INCO II project competition, one of them for the Estonian Biocentre and the other for the Institute of Physics of the University of Tartu, can be regarded as the biggest achievements of Estonia. One of the best results already at the evaluation of the applications of the QoL project competition was attained by the application "New strategies for the treatment of cancer by targeting conformational variants of the tumour suppressor p53" submitted with the participation of Professor Toivo Maimets of the University of Tartu. The project coordinator is the Medical University of Lübeck and other partners are the University of Athens, Karolinska Institutet (Stockholm), University of Helsinki and the Eugene Company from Belgium. The University of Tartu will get approximately 3.3 mln EEK of support from the above-mentioned project in the course of three years and a large part of that support (625 000 EEK) has been spent on the purchase of a fluorescence-activated cell sorter, which is essential for research and instruction.

In the IST Programme the project "Health monitoring programme doc@HOME", coordinated by Curonia Research OÜ, has continued successfully. It is a health care programme, which shifts some of the activities of a health care institution to home milieu and improves the coping possibilities of people. The technical equipment Docobo enables a patient to have control over his prevention, diagnosing, therapy and care. The increased control increases also responsibility, improves the efficiency of health care and raises also its quality. The project is financed by the European Commission with 16 million EEK. In addition, the participants finance the project with their own funds. Nine partners from four countries are involved in the project. Other participants from Estonia are Artec Design Group OÜ, Mindworks Industries OÜ, Oracle Baltics and the Faculty of Medicine of the University of Tartu. The testing of the system with 50 patients with high blood pressure have provided positive experience. The treatment efficiency of the study group reached 37% in comparison with the usual result of 5-

10%. Further trials are planned to be performed in Sweden, United Kingdom and Germany.
The project "Open Computing GRID for Molecular Science and Engineering", coordinated by professor Mati Karelson is one of the most outstanding among Estonia's successful projects. The specific objectives of this project are as follows:

1) To use EUROGRID for integrating heterogeneous and distributed databases for computational molecular engineering,
2) To use EUROGRID for integrating relevant existing tools for carrying out molecular modeling,
3) To provide a solid foundation for the design of next generation molecular engineering tools (prediction of molecular structures with target properties),
4) To provide secure global access to highly sensitive R&D information resources through EUROGRID infrastructure,
5) To promote the use of the OpenMolGRID environment for scientific and industrial end-users, and
6) To carry out representative tests for globalised life science applications.

The project is financed by the European Commission with 31 million EEK. Five partners from five countries are involved in the project.

Overviews published

Overview of the participation of Estonia in FP5 has been published both in Estonian and in English ("Eesti osavõtt Euroopa Liidu Teaduse ja Tehnoloogilise Arendustegevuse 5. Raamprogrammist, vahekokkuvõte jaanuar 1999 - august 2000"; "Participation of Estonia in the 5th Framework Programme, January 1999 – January 2001", Tartu 2001; Sociological survey of participation of Estonian organizations in the 5th Framework programme. Tartu, 2002) and is available on the Internet at the addresses: http://www.irc.ee/5RP_est.pdf and http://www.irc.ee/Eng/5rp_inglise.pdf .

II. Quality of Life and Management of Living Resources

Compiled by Meelis Sirendi
meelis@etf.ee

Approximately ten thousand project applications were submitted in the course of four years from all over Europe within the different key actions of the thematic programme Quality of Life and Management of Living Resources, approximately 1800 of them are financed (thus the success rate is 18%) with the total budget of 2.2 billion euros, and, in total, 14 thousand research institutions from all over Europe are participating in them as partners.

Table 6. Participation of Estonia in the Quality of Life Programme (as of 1. November 2002)

Activity	**Number of proposals (*)**	**Financed**	**Average number of partners**	**Average budget ('000 euros)**	**Average budget of Estonian partner ('000 euros)**
Food, Nutrition and Health	18 (14)	5	10,6	2272	397,4
Control of Infectious Diseases	12 (12)	1	10,7	2107	143,5
Cell Factory	28 (25)	3	9,5	1849	216,2
Environment and Health	14 (13)	1	11,0	1733	95,0
Sustainable Agriculture, Fisheries and Forestry	71 (50)	12	11,8	2321	127,4
Ageining Population and Disabilities	13 (13)	7	8,9	2446	163,0
Generic Research	52 (46)	9	9,8	2756	162,3
Exploratory Awards (EA)	7	3	2,3	28,7	20,3
CRAFT	2	1	7,0	1 360,0	124,3
NAS-1	20	7	9,8	807,1	71,8
NAS-2	4	2	NA	1237,7	1112,4
Accompanied Measures	15	3	18,6	973,9	25,2
Total	**256**	**54**	**NA**	**NA**	**NA**

* sulgude arv näitab esitatud erinevate projektide arvu

The following is an overview of the contribution of Estonian research groups in that extensive thematic programme.

In total, 256 project applications were submitted to all project competitions with the participation of 283 Estonian research groups. Proposal for financing was made to 54 projects with the participation of Estonian partners, thus the success rate is 21%, which is a strong average level in comparison with the entire programme.

To Key Action 1 (Food, Nutrition and Health), with such subthemes as food quality, food safety and nutrition, 18 projects were submitted in total with the participation of Estonian partners. The most popular beyond competition and also the most successful subject was nutrition (4 successful projects of the 9 applications submitted). Neither food safety nor food quality were unfortunately so popular, although it is a priority subject of the 6th Framework Programme. And in the context of Estonia, where food

processing accounts for a rather large part of the total volume of industry, more interest could be presumed, particularly on the part of industry, both in the subjects of product development and food safety.

In KA 2 (Control of Infectious Diseases), where the competition was relatively weaker (in RTD competitions in general 20.5%), only one project with Estonian participation proved successful and it was on the antibiotic effect of macroliths. Other applications, which unfortunately proved unsuccessful, concerned among other things vaccines against HIV, hepatitis and enteroviruses and also the tuberculosis bacterium and zoonotic mycobacteria. Besides, Estonian partners participated in applications, which concerned the evaluation of vaccines and vaccination.

KA 3 (Cell Factory) is characterised by a high proportion of industrial enterprises all over Europe – an industrial partner participated in 95% of projects. Application of the research results of biotechnology was actually one of the main objectives of that KA. Estonian biotechnology industry is probably too young to participate in such projects and therefore most partners were still from research and development institutions (29 RTD institutions versus 2 SME). The fact that one of the three successful partners is SME is the more promising; it participated in a project about the treatment of the Parkinson's disease. The two remaining successful projects concern the development of bioactive substances from sea sponges and the TSE problems of small ruminants. Research objects of other project applications were in the area of new health protection processes and products – carbohydrates and proteins with a curative effect, their synthesis and methods for their use; in the area of biological treatment – tests for the determination of the cleanness of the environment and a GMO identification procedure, and in the area of new biotechnological products and processes – yeasts, tagging with stable isotopes and purification of kinases.

KA 4 (Environment and Health) proved to be considerably weaker than other KA-s, judging by the scientific level of the applications – the average rating of the scientific level of 14 applications submitted was only 2.7 and just 2 applications reached the final evaluation. One of them is also financed and it concerns the effect of environmental factors on the health of lungs. In the applications which proved to be unsuccessful this time the researchers wished to study also the effect of the environment on the development of asthma and lung cancer and the effect of different living and job environments on human health and to develop methods for environmental risk assessment.

As expected, participation in KA 5 (Sustainable agriculture, fisheries and forestry, and integrated development of rural areas) proved to be most numerous. In total, 50 different projects were submitted, and as some of them were submitted for several times, the total number of applications was 71, with the participation of 75 research groups. Participation was most numerous in the action line 5.5 (Integrated development of rural areas), for which 22 applications were submitted in total but just one of them is financed. This action line is above all characterised by a high proportion of applications, which do not conform to the work programme. For the most part, the applications concerned the problems of a specific region or population group, but working-out of new development conceptions and methods of analysis had been expected above all.

A little fewer applications (21) were submitted on the subjects of 5.1.1 (Sustainable agriculture). In the area of plant production the applications concerned the cultivation of grain, rape, sea-buckthorn and field bean, and also organic plant production and development of genetically modified plants. The range of applicants was consequently very wide, from very general projects, such as organic plant production, to projects with a very specific object. In the area of animal production, both projects aiming for the improvement of the quality of pork or milk and projects on organic animal production were represented.

Considering the large proportion of forestry and wood processing in Estonia, the number of applications on forestry was high as well – 16. The central theme was sustainable forest management – either from the aspects of a small owner or the state, financing or reproduction or as a source of energy. A higher proportion of concerted actions than in case of other subjects was characteristic of the forestry subject.

There was somewhat less activeness on the subjects of using agricultural production for non-food purposes (6 applications) and development of common EU policies (4 applications). In the area of contribution to the development of common EU policies a project on the economic assessment of the European fisheries sector proved successful. But in the specific action line of fisheries (5.1.2) Estonia was represented by only one application, which concerned the Baltic herring, restoration and evaluation of its resources. As Estonia is a Baltic Sea country, such a low number of participants is somewhat surprising, considering also the fact that fish processing is an important part of the Estonian food industry.

KA 6 (The Ageing Population and Disabilities) proved statistically most successful for Estonians: 7 of the 16 applications submitted proved successful. Among action lines, there was more participation on the subjects of social and health care services and health problems of the elderly. Projects concerning the Parkinson's disease, the Alzheimer's disease, inadequate vision and the quality of life and marginalisation of the elderly were represented in project applications.

The competition was most intense in the general research areas – the success rate all over Europe was only 14.5%. The participation of Estonians was more active here, as expected. In total, 52 applications were submitted and the success rate was 17%, consequently, 9 projects are financed.

13 applications were submitted on the subject of chronic and degenerative diseases, projects for research into tumor suppressor protein and for the research into the prevention and therapy of proteinuria proved successful. Applications were also submitted for research into diabetes, cancer and glioblastoma, cardiac insufficiency and cardio-vascular diseases. 6 applications were submitted on the subjects of genomics, from which 1 proved successful. A special competition of integrated projects was also held in the area of genomics on a completely new basis. While Estonian research institutions expressed their interest in participation in the competition of expressions of interest, they did not participate in the competition of applications. The most successful subject among general research was the direction of neurosciences. 3 projects with Estonian partners reached financing. One of them concerns research into myoclonic epilepsy and the cystatin B gene causing it; the second project, the new mechanisms of cell communication; and the third project, heteromerisation of the adenosine/dopamine receptor. Competition in the area of

neurosciences is characterised by a very high scientific level. A project, which received a rather high rating (4.4) against the general background, remained without financing in the area of neurosciences. While more applications were submitted in the area of research into health care systems, only one of them proved successful; it concerned depression, one of the most widespread health problems of the European society, its detection and therapy. No Estonian partners related to research on the subject of disabled persons were financed, although there were in total 5 applications which concerned both the rehabilitation process and the quality of life of patients with the schizophrenia of young people and the Parkinson's disease. In the two last GA subjects - bioethics and the socio-economic aspects of life sciences – the total number of applications submitted was 7 and one is financed in the area of bioethics (ethical, legal and social aspects of human genetic databases) and one in the area of socio-economic research (on the effectiveness of the clinical and distance monitoring of patients).

15 applications in total were submitted to the competitions of project applications of **accompanying measures**. The projects covered organisation of conferences, publishing, training, and also development of co-operation and communication in certain economic sectors, such as the biotechnology industry and wood processing. The Commission finances three projects: one project of organisation of a conference, one on the publishing of results and one training project. Projects of accompanying measures generally demonstrate that applicants have had difficulties in understanding the meaning of introduction and securing of the programme. Therefore some projects submitted to the competition simply did not fit in the subjects of the work programme.

Participation of Estonian businesses in competitions intended for SME has been low. Businesses of the forestry, food and biotechnology sectors could have participated in the Quality of Life programme. Probably they are on the one hand orientated towards production with low science-intensity, and on the other hand there is a lack of experience or self-financing for participation in such large projects. 2 CRAFT projects and 7 EA projects were submitted. The majority of applicants were spin-off biotechnology businesses (7), but also food industry (2) and forestry are represented (1). 3 EA-s proved successful, 2 of them co-ordinated by Estonians and on GA subjects, and 1 CRAFT project on forestry.

At the very end of the programme two competitions were held for candidate countries. One was an opportunity for the research groups of candidate countries to join already existing projects (NAS1), the other was for the integration of candidate countries with the European Research Space or the so-called centres of excellence (NAS2). The total budget of the two competitions was approximately 20 million euros. In total, 177 applications were received for joining the existing projects, 21 applications were received from Estonia. Applicants mainly wished to join research (RS) projects (86%) and the distribution among different KA-s was as usual: most applications were on the subjects of GA (21%) and KA3 (21%). Most applications from Estonia were also RS projects, although there were also applications for joining the existing co-operation networks. In subprogrammes there were more applications for KA2 (5) and GA (5), but most successful ones were KA3 (3) and GA (2). Success in Cell Factory is the more remarkable because despite active application activities few projects had been financed on that subject.

108 research centres of candidate countries submitted their applications to the NAS2 competition, most of them (76) from Poland. Three research centres from Estonia participated on GA subjects and one on KA1 subjects. 29 research centres were selected for financing, among them 2 from Estonia: Centre of Molecular and Clinical Medicine of the University of Tartu in the area of chronic and degenerative diseases and the Estonian Biocentre in the area of genetics. Although Estonia as a small country has usually been overshadowed by others considering the absolute number of successful projects, it ranks third this time after Poland and Hungary together with Slovakia.

About co-ordinators. 17 projects co-ordinated by Estonian organisations were submitted in QoL, i.e. 0.2% of all applications. But among projects with Estonian participation the proportion was 8.2%. As some of the applications co-ordinated are EA (5) and AM (3), Estonian research institutions co-ordinated RS project applications in 9 instances. With 2 of them they reached the list of projects financed and in 2 instances also the top of the reserve list. One of the projects financed is in the field of gene research and the other in the area of diseases related to old age. Besides, we should note about co-ordinators that Estonian partners participate most in applications co-ordinated by the British (42), followed by Finland (32), Germany (28) and the Netherlands and Sweden (both 27).

On the evaluation of applications. In total, 208 applications were submitted to application competitions with fixed deadlines. 19 of these applications were deemed as inadequate at preliminary evaluation. The most important reason for rejection was the violation of the anonymity requirement (8 cases); in 7 cases the application did not conform to the work programme. The number of inadequate application was the highest in KA5 (13) and the most problematic action lines within it were support to regional development (5.5) and new agricultural production systems (5.1).

Thus, 189 applications were sent on to panels for evaluation. Approximately ¾ of them dropped out after the first round of evaluation. The main reasons were the lack of innovativeness, indistinctness of the application, lack of specific aims, also poor organisation of co-ordination. The average ratings of the first and the second criteria unfortunately cannot be compared because most panels did not evaluate the management when the scientific aspects did not exceed the threshold. No significant differences can be found when comparing different KA-s by ratings, except in case of KA 4, where both first criteria were rated as 2.7 on an average.

III. User friendly information society

Compiled by Tarmo Pihl
tarmop@archimedes.ee

User friendly information society is one of the four vertical thematic programmes of FP5. The objective of the Information Society Technologies (IST) Programme is generally speaking realising the benefits of the information society both by accelerating its emergence and by ensuring that the genuine needs of individuals and enterprises are met during the process.

The vision, on which the Programme directions are based, can be summarized as follows: "Our surrounding is the interface" to a universe of integrated services. This enables citizens to access IST services wherever they are, whenever they want, and in the form that is most "natural" for them. While directly targeting the improvement of quality of life and work, the vision is expected also to catalyse an expanse of business opportunities.

In order to carry out the vision, the IST Programme is built on four inter-related key actions, which define the research priorities.

Systems and services for the citizen (KA I) meet the needs and expectations of European citizens for high quality and affordable services. Research and development is carried out in the fields of health, persons with special needs, including the elderly and disabled. The priority for KA I is to enable European citizens, businesses, and public authorities to take full advantage of the recent advances in ubiquitous computing, communication and intelligent interfaces in the areas of general interest, services, administration, environment and transport.

New methods of work and electronic commerce (KA II) are designed to enable both individuals and organisations to innovate and be more efficient in their work and businesses. Work in Key Action II builds on the Programme's vision of a networked economy where consumers, workers and enterprises can seamlessly and dynamically come together and interact through a ubiquitous infrastructure that promotes both trust and confidence.

Multimedia content and tools (KA III) address issues such as interactive electronic publishing, digital heritage and cultural content, education and training, human language technologies and information access, filtering and handling. In particular, the key action concentrates on promoting creativity in the content industries through new forms of highly visual and interactive media content.

Essential technologies and infrastructures (KA IV) has orientation onto developing basic technologies**,** covering areas such as the convergence of information technology and communications; mobile and personal communications; microelectronics; technologies and engineering for software, systems and services; simulation and visualisation technologies; novel multisensory interfaces; and the development of peripherals, subsystems and microsystems. In particular, the priority is on realising a ubiquitous computing and communications landscape with embedded, networked information systems and on developing open technology frameworks for personalised services irrespective of time, location and context.

The programme structure also includes "**cross-programme themes**" (CPA) that aim to support the integration of work which is performed across the four key actions.

In order to ensure that the programme remains open to new research ideas for tomorrow, the four key actions are balanced with a **future and emerging technologies** (FET) action, with a visionary and exploratory perspective. This involves research of a longer-term or particularly high risk nature, but which promise major advance and potential for significant industrial and societal impact.

The programme also supports activities involving the broadband interconnection of existing national research and education networks, and also the integration of leading-edge European experimental testbeds.

Table 7. Participation of Estonia in the IST Programme (as 1. November 2002)

	Nr of proposals		Budget[1]		Budget (EE partner)		Partners	Successful projects	
	total[2]	successful	total	average	total	average	(avge nr)	nr	total from EC
KA I	18	4	44895209	2993014	2155830	153988	9	4	688950
KA II	25	3	49541583	2359123	1771188	104188	11	3	100418
KA III	22	1	65027605	2955800	4717097	235855	8	1	36613
KA IV	6	3	7477165	1246194	915360	305120	6	3	461900
CPA & FET	20	3	50963722	2682301	3373156	240940	9	3	667416
Generic	29	12	30661868	1135625	2815086	117295	13	12	1821247

Despite the generally successfully started participation of Estonia in the FP5, none of the 13 project proposals with Estonian participation (18 participation in total) could reach the negotiation phase at the first call of IST programme. At the second call there were 12 projects with Estonian participation (14 participation in total) and three of them proved successful (Pärnu Town Government, Estonian Association of Librarians, Archimedes Foundation)[3]. In the negotiations phase a fourth project was accepted in summer 2000 from the Institute of Baltic Studies. All above-mentioned projects were, however accompanying measures and were directed to the improvement of the distribution of information or other undertakings supporting the achievement of the objectives of the IST Programme. The statistics of the first calls should be treated with the respective reservations as well.

In the third IST call for proposals with the deadline in the early summer of 2000, 15 projects with Estonian participation participated in total. Among them RTD project in the field of telemedicine, co-ordinated by Curonia Research OÜ and involving several Estonian companies and the University of Tartu, and the project 'Estonian *e*Vikings' of the Archimedes Foundation for conducting a feasibility study of Estonian IST cluster alongside with policy recommendations were successful.

The Estonian Education and Research Data Communication Network EENet participates in the GEANT Project which has a huge budget of 216 mln euro, unprecedented for the entire 5th Framework Programme. The idea of this project is the creation of a trans-European data communication network with a capacity of 2.5 Gbps for the support of education, research and development work. The European Commission supports this project accordingly to the extent of 40% or 80 MEUR recommended by the Commission of the EC in the framework of the *e*Europe Programme.[4]

[1] Budget does not include GEANT Project with total budget of 216 million EUR to avoid statistical distortions

[2] CRAFT projects were also included into thematic IST projects

[3] See in more detail the list of successful projects at the end of the booklet.

[4] *e*Europe Initiative: An Information Society for All, Communication on a Commission Initiative for the Special European Council of Lisbon, 23 and 24 March 2000. [http://europa.eu.int/comm/information_society/eeurope/index_en.htm]. 25.08.2000.

As the co-ordinator, based in U.K. takes care of the financial management of that project (centrally according to the movement of communication rates in Europe) it is not possible to bring out separately the part of the budget that is allocated to Estonia from the funds of the European Commission. It is expected to reach 3–4 MEUR.

During the fourth call published in the fall 2000 some 10 proposals with the presence of Estonian partner were submitted to the IST Programme. A single RTD proposal, submitted under the acronym of Cultos, deemed successful for funding. Cultos is another project related to cultural field, with an aim of creating knowledge-aware multimedia authoring tools that have high usability for non-technical cultural experts. Cultos was also the single successful project under the Key Action III – multimedia content and tools.

Participation in the fifth call of proposals was relatively inactive from Estonian participants. Only two projects were submitted and none of these was retained for funding. The sixth call in IST resulted in 10 proposals with the involvement of Estonian partners, of which unprecedented number of five were retained for funding. HEALTHY-MARKET was the only RTD project of the five successful ones, aiming at the creation of an interactive virtual marketplace for the implementation of healthy nutritional plans in cooperation with 12 partners all over the Europe. An accompanying measure project of Tallinn Technical University REASON performs research and training actions for System on Chip design. Another accompanying measure project, THINK BALTIC is the extension of the THINK project aiming at increasing the involvement of disadvantaged people in social life, and, as a part of it, particularly in technology-enabled work. Again, Estonian participant is TTU. EUROVET-Trial project is a take-up action striving for the trial of Eurovet animal identification and veterinary surveillance system in Estonia to gain experience and knowledge of using such software for professional purposes. Finally, a pan-European initiative called EBR-ON unites majority of European business registries into common effort in developing a unified standard for exchanging the information over the Internet. Thus, in the closer future it will be possible to access majority of European Business Registries on a common principle.

Estonian participation in the seventh call for proposals in IST in fall 2001 was remarkably active. Altogether 25 (3 of them participating in Call 7 bis[5]) proposals were submitted to the Programme involving at least one Estonian partner, 7 of which entered into the negotiations with European Commission.

One of these, an RTD project POSA DWDM was the third project in the IST field, which was co-ordinated by the Estonian participant and approved by the European Commission. The aim of the project was the development of portable optical spectrum analyser for maintaining and troubleshooting DWDM system's components and networks. RTD project DASPTOOL deals with the development of tools for direct digital alias-free processing of RF and microwave signals with demonstrations of their application potential. Take-up project DASPTOOL deals with an open source technology for data certification value added services. Hiiumaa county government was an excellent example of successful applicant from the remote region, proving that capacity to participate in technology related development projects also exists outside capital city. It was a demonstration project with the acronym of DIAS.NET, aiming at

[5] Call 7 bis was initiated in the framework of call 7 to focus specifically on demonstrations and take-up actions in the field of 2,5-3G mobile wireless networks.

creating an electronic platform for the development of the Information Society in the European Islands and Isolated Regions.

Nature-GIS project incorporates a number of partners (19) in geo-informatics field, improving reporting on the implementation of the EU policies, raising awareness in GI-GIS and supporting access to data and information. An interesting project called EPDIS at the participation of Estonian Marine Academy was also retained for funding – the main objective of the project was to introduce 3D geo-information system for safe navigation using electronic charts for these purposes. As seen from above, projects of cross-disciplinary nature have been relatively successful in this call.

Call 8 witnessed an unprecedented high interest in Estonian IST RTD community as the total of 33 proposals were addressed to European Commission for funding. It accounts for one quarter of all IST projects submitted during the Fifth Framework programme. As the competition was twice as hard as usual, pushing oversubscription rate to 1:8 against the normal 1:4, the success rate of Estonian participants, where 7 projects out of 33 were retained for funding, can be considered relatively good result.

The call added two more to the list of projects co-ordinated by Estonians. 3 million EUR budgeted OPENMOLGRID capitalises on existing EUROGRID network to perform the integration of heterogeneous and distributed databases for computational molecular engineering, prepare new molecular design tools and integrate the existing ones. The second one co-ordinated by the Institute of Cybernetics at TTU, eVikings II, is the follow-up project to the Estonian eVikings, successful proposal of the third call. Whilst the Estonian eVikings was a feasibility study of the Estonian ICT innovation system, mapping the strength and weaknesses of the sector, the eVikings II aims at establishing a virtual centre of excellence in IST RTD in Estonia.

Herein 2E was Herein project extension to Newly Associated States (NAS), facilitating training on national policy data reporting and exchange, construction and management of multilingual thesaurus in the field of cultural heritage and XML document management system on open source software. The Estonian partner in the project is Cultural Heritage Board. RESET is a thematic network on research and strategic roadmapping in the field of smart card technology. SIBIS+ was an extension of existing project to NAS partners, performing benchmarking exercise based on Information Society indicators. GEM-NAS project involves TTU as a partner, whereas the project itself focuses on enhancing the quality of education in the field of manufacturing. Finally, the Capers project at the participation of Estonian Post develops a computer aided post service in East European states.

During the course of FP5, in addition 2 IST related CRAFT projects – PETS and FIRICS and one Exploratory Award[6] project – POSA DWDM were successful. The PETS project develops a system of prediction of software error rates based on test and software maturity results, whilst FIRICS aims at building software for detecting manufacturing failures.

[6] CRAFT and Exploratory Award are specific measures designed for SMEs. The first one enables SMEs to outsource R&D service from third parties, the second one is a preparatory funding assistance to promising project ideas.

Factors hindering Estonian participation in the programme

Low competitiveness of projects with Estonian participation was primarily caused by their low innovation or inadequately presented objectives and action plan of the project, 2/3 of the projects analysed failed due to their poor scientific and technological quality, in the rest of the cases the inadequate level of the implementation plan or marketing plan or weak project management have become an obstacle.

In addition to the above-mentioned factors we should point out that no projects with Estonian co-ordinators participated in the two first calls. It is also remarkable that only 1% of the co-ordinators of projects that reached the negotiations phase in the first call came from the countries of Central and Eastern Europe.

By the time of preparation of the analysis it was unfortunately not possible to identify for most of the projects presented more than a year ago the person responsible for the preparation of the particular project in an organisation. In a few cases where it could be identified they had participated rather from curiosity and wish to acquire experience than guided by a clear intention to strengthen research competence or develop innovative products and services through co-operation.

Thus, the participation of Estonian organisations in the programme so far can be considered relatively incidental. A poor number of contacts is also an important hindrance for both research institutions and companies in international research and development work. For the most part they happen to participate in the so-called second-rate projects that try to copy something already done before by someone or cannot write a plausible or sufficiently thorough action plan.

When planning further participation in the programme it is also important to understand that it certainly does not have to do with discrimination on the part of evaluators but rather with the fact that Member States have more experience in the planning and presentation of research and development projects that conform to the logic of the Framework Programme. Consequently it is useful to look into the structure and experience of earlier projects when designing new projects.

IV. Comparative and Sustainable Growth

Compiled by Hillar Toomiste
hillar@ibs.ee

Table 8. Estonian participation in the GROWTH Programme (as of 1. November 2002).

Activity	**Number of proposals**	**Financed**	**Average number of partners**	**Average budget**	**Average budget of Estonian partner**
Innovative Products, Processes and Organisation	9	5	16	1 670 000	172 000
Sustainable Mobility and Intermodality	9	0	13	2 600 000	128 000
Land Transport and Marine Technologies	2	0	9	3 200 000	202 000
New Perspectives in Aeronautics	0	0	0	0	0
New and Improved Materials	4	1	7	2 800 000	126 000
Measurement and Testing	3	3	20	1 000 000	72 000
Total	**27**	**9**	**13**	**2 254 000**	**140 000**

27 project proposals with the participation of 30 Estonian partners were presented to 5 different calls and 9 of them proved successful – consequently 33%, which can be regarded as a very good achievement. Research institutions were more active among the applicants (13 of 27 proposals) followed by private companies (11) and governmental founded companies (6). Four participants were partners in several projects. Proposals covered in most case new production methodology and assessment of urban and regional transport. Specially is good to point out Tallinn Technical University, where different institutions are participated in 10 project proposals. Two proposals were submitted for participation in the EU thematic network type. Both got positive evaluations and financing from the EU.
A sufficiently high final grade opened the way for receiving funding from the EU. In case of Estonia the highest number of points was 23,5 from 25.

As the grades were relatively equally distributed between the different evaluation criteria, no particularly strong or weak aspects can be brought out here. The skill of describing the contribution to the socio-economic priorities of the EU was perhaps a little weaker.

Among the Key Actions of Growth programme the themes related to aeronautics remained uncovered. Lack of the aeronautics research is quite natural, as there is no respective industry in Estonia. To reach higher number of successful projects the proposals should also be clearly oriented towards the solution of the problems of industry and give an important output, considering the development needs of the entire European industry.

Estonia was the co-ordinator of one project. Among successful projects co-ordinators by countries we can find the organisations of Finland and Germany.
In conclusion is good to say that the Estonian productive industry is recovering well and the growing number of technology projects with European countries is a good sign of integration Estonian industry to European society.

V. Energy, Environment and Sustainable Development

Compiled by Maria Habicht
mari@ibs.ee

The programme Energy, Environment and Sustainable Development (EESD) was rather successful for the Estonian companies and RTD institutions - the average success rate exceeded 31%. The following is a brief overview of the projects with Estonian participants.

Environment and Sustainable development

Total 156 proposals with participants from 185 different institutions were submitted to the calls of Environment and Sustainable Development. 57 proposals involving 60 participants were successful. As could be expected, the majority of proposals were initiated by foreign partners. Geographical coverage included 17 countries. 28 projects were coordinated by various institutions from Germany followed closely by United Kingdom (25), Finland (21), the Netherlands (17) and Sweden (15). Represented are also such countries as France (11), Denmark and Norway (both 9), Austria (4), Spain and Italy (both 3), Czech Republic, Ireland, Portugal and Poland (each 1). Among successful proposals one can find co-ordinators from United Kingdom (11), the Netherlands (9), Germany (7), France, Norway and Sweden (each 6), Austria, Denmark and Finland (each 3), Italy (2) and Portugal (1). If to compare these numbers one can notice, that the best success rate - 100% was achieved with proposals prepared under Portuguese co-ordination. Estonian coordinators submitted 7 proposals including three exploratory awards, unfortunately none of them was recommended for consideration.

The average duration of projects was 32 months – the shortest one planned for 9 months and the longest for 48 months. Total cost of proposals was within 59 640 and 7 831 452 Euro, exploratory awards remained between 28 500 and 30 000 Euro. The average projects consortium was formed by 11 partners – the biggest team of 56 members didn't pass the evaluation, neither did the smallest team of 1 university. About one third of the proposals – 31,2% met the success criteria. Great majority of 60 partners of the successful projects came from universities and research institutions (49); there was also one municipality and 10 other organisations. Tallinn and Tartu were represented quite equally – 48,6% and 42,2% of participating institutions

respectively. The share improved slightly for Tartu with successful proposals – 45% against 46,7% for Tallinn.

The Environment and Sustainable Development part of EESD programme was divided into four key actions (KA). In addition there were open calls for *Research and Technological Development Activities of Generic Nature, Exploratory Award* and *Craft,* and calls for *Support for Research Infrastructures.*

The biggest number of proposals was submitted to KA2 – *Global Change, Climate and Biodiversity* – 51, out of which 22 were successful. The researchers were most interested in interactions between ecosystems and the carbon and nitrogen cycles; they tried also to investigate stratospheric ozone depletion, ecosystem vulnerability, atmospheric composition change, assessing and conserving biodiversity, better exploitation of existing data and adaptation of existing observing systems and reconciling the conservation of biodiversity with economic development. Contribution was offered also to better exploitation of existing data and adaptation of existing observing systems, climate variability and abrupt climate changes.

KA1 – *Sustainable Management and Quality of Water* – resulted in total 31 proposals and 9 successful ones. Here, topical issues were strategic planning and integrated management methodologies and tools at catchment scale; abatement of water pollution from contaminated land, landfills and sediments; socio-economic aspects of sustainable use of water; management of water in the city; and ecological quality targets.

KA4 – *City of Tomorrow and Cultural Heritage* collected 24 proposals with Estonian participants, 7 of them were successful. Changes in living standard and economic situation of the country have attracted the researchers to investigate the possibilities for revitalisation of city centres and neighbourhoods; waste reduction and its life cycle management; improving the quality of urban life; fostering integration of cultural heritage in the urban settings; improved damage assessment of cultural heritage; and development of innovative conservation strategies.

Although Estonia is a marine country, only 18 proposals were submitted under the KA3 – *Sustainable Marine Ecosystems* and only 4 were successful. The proposals addressed integrated studies on land-ocean interactions; operational forecasting of environmental constraints of offshore activities; better assessment of naturally occurring mechanisms of ecosystem functioning; technologies for safe, sustainable and economic exploitation of marine resources; and transport pathways and impacts of pollutants, key elements and nutrients in the marine environment.

None of the 4 submitted proposals for exploratory award reached the threshold of success. Out of 18 proposals of generic nature, 9 were successful. The highest results were achieved with the proposals supporting research infrastructures – 8 out of 10 were retained for consideration.

Only one proposal earned maximum points for *scientific/technological quality and innovation.* Great majority of failed proposals was unable to meet this criterion, and as a rule was not evaluated further. The rest of the evaluation criteria caused fewer problems and only small variations could be observed there.

Energy

68 different Estonian institutions were involved in 61 proposals submitted to the Energy part of the programme, out of which 19 proposals with 25 Estonian participants were successful. The majority of proposals were initiated by foreign partners. Among the co-ordinators one can find various institutions from such countries as Germany (10 proposals), Denmark (7), the Netherlands, UK, France (each 6), Finland, Sweden (both 4), Greece (3), Latvia, Austria, Spain (each 2), Belgium, Slovenia and Poland (each 1). Six proposals were coordinated by the Estonian partner – three of them were successful, one was ineligible.

The average duration of projects was 27 months, total cost varied from 400 000 to 23 million €. The average project consortium included 12 partners – with variations from 1 to 36 participants. The success rate of Energy projects was 31,2%. 25 partners of the successful projects came mostly from universities and research institutions (9), followed by governmental institutions (6), enterprises (5) and others (5), such as associations, NGOs etc. 67,7% of partners of submitted proposals came from Tallinn, the national capital. The share in successful proposals was even higher – 80%. The university town Tartu ranked the second, participating in 13,2% of submitted proposals and 4% of successful ones.

The topics of Energy part of the programme were covered by two key actions – key action 5 - *Cleaner Energy Systems, including Renewable Energies* and key action 6 - *Economic and Efficient Energy for a Competitive Europe*, which were divided into four and six action liner respectively, each addressing a number of different problems to be solved. Both key actions were equally attractive for the proposers. Nevertheless it is possible to point out more topical issues.

From among the action lines, 5.2 – development and demonstration, including for decentralised cogeneration, of the main new and renewable energy sources, in particular, biomass, wind and solar technologies, and of fuel cells, 6.5 – Improving the efficiency of new and renewable energy sources, and 6.6 – elaboration of scenarios on supply and demand technologies in economy/environment/energy systems and their interactions, and the analysis of the cost effectiveness *(based on whole life costs) and efficiency of all energy sources* were most often addressed. Nine proposals attempted to find solutions to the problems concerning biomass (including waste) conversion systems (5.2.1). Next in the rank came cost effective components for photovoltaic module systems and solar thermal concentrating systems (6.5.2) (5 proposals) followed by market changes and technology absorption (6.6.3 – 4 proposals).

The proposers to this part of the programme succeeded better in describing the community added value and contribution to EU policies than bringing out scientific/technological quality and innovative aspects of their proposal. They were in most cases able to estimate economic contribution and scientific and technological prospects of their idea. Some proposers had difficulties with convincing the evaluators in the quality of management and selected partnership, in a number of cases the budget was obviously overestimated. However only minor differences between the points earned for each evaluated block of criteria could be observed.

The results of participation of the Estonian industrial and research community in the projects of EESD programme show, that they are accepted as equal partners in RTD cooperation projects by the Member States coordinators, which allow to hope, that the new Framework Programme will offer even more opportunities and higher result.

VI. Confirming the International Role of Community Research

Compiled by Ülle Must
ylle@archimedes.ee

Confirming the International Role of Community Research (= INCO) is the first horizontal programme of 5FP with the main objective of developing international co-operation in scientific research with countries outside the European Union and with international organisations.

At the time of launching the programme, Estonian researchers were expected to participate rather actively because unlike other programmes it was specifically directed to supporting the science and technology sector of the so-called third countries and to co-operation with partners that had become known to Estonian researchers in the course of decades.

Table 9. Estonian participation in the INCO Programme (as of 1. November 2002).

Activity	**Number of proposals**	**Financed**	**Average number of partners**	**Average budget**	**Average budget of Estonian partner**
A1 Candidate Countries					
Awareness & Training	4	3	3,75	54137	18062
Conference participation support	2	1	9	158282	4169
Centers of excellence	6	2	1[7]	1121060	1121060
A2 NIS and non-associated CEECs					
Conference participation support	1	1	41	103650	1610
COPERNICUS-2	4	1	6	1021220	143713
A3 INCO-Med	1	0	6	898000	119000
Total	**18**	**8**			

In reality, the project competition Centres of Excellence, intended for EU candidate countries and held during the first year of the framework programme, attracted the most response. The aim of the project competition was to finance outstanding research institutions and research directions in countries of Central and Eastern Europe. The support from the European Union to the centres was above all intended for the intensification of the exchange of researchers and international co-operation of the centres. There was a lot of interest in the project competition and 185 applications were received, from which 34 were selected for financing. In total, six applications from Estonia were submitted, covering such areas as genetic engineering, materials sciences, biophysics, information technologies, power engineering and demography. Four of the applications presented were evaluated highly. According to the ranking of the ratings of projects, the European Commission eventually decided to finance two Estonian projects: the GENEMILL Project of the Estonian Biocentre in the field of genetic engineering and the ESTOMATERIALS Project of the Institute of Physics of the University of Tartu in the area of materials sciences.

Participation of Estonia in the COPERNIC 2 sub-programme, which was mainly intended for the development of research co-operation with countries of the Commonwealth of Independent States remained more modest than initially might have expected, considering the contacts that had been maintained between Estonian and for instance Russian and Ukrain researchers since the period before Estonia regained its independence. In total, 4 projects participated from Estonia, and the European Union financed one of them. At the same time, when comparing the trends in the international co-operation of Estonian researchers during the last decade, we can see that such a trend could very well be anticipated.

Interest of the Estonian researchers in the remaining INCO sub-programmes is even more marginal. Applications for participation in conferences were submitted in three occasions (two of them successfully). Estonians also participated in a project (unfortunately not supported) directed to the development of research co-operation with Mediterranean countries.

Since the aim of a subprogramme of the INCO Programme is to increase the harmony, efficiency and influence of European research and development activities through co-ordination, we cannot ignore such European co-operation networks as EUREKA (a network of market-oriented R&D), COST (European Co-operation in the field of Scientific and Technical Research) or INTAS (Association for the development of research co-operation of EU countries and associated countries with CIS countries).

Neither COST, INTAS nor EUREKA are parts of 5FP. At the same time a considerable part of their funds come from a subprogramme of INCO. Estonia became a member of COST, a co-operation network of 35 countries, in 1997. Estonian researchers participate in 11 projects. In 2000, Estonia became a full member of INTAS, and participates in one project. In 2001, Estonia became a full member of EUREKA, a co-operation network of 33 countries (associated member since 1992), Estonians have participated in 3 projects. It is typical of Estonia that universities have the leading position in participation in projects of all these networks.

Conclusion

Although participation in the INCO Programme proved to be much more passive in Estonia than it was thought at the beginning of the framework programme, it has a considerable effect on shaping the attitude of Estonian researchers towards the framework programme. Remarkable success of the Centres of Excellence in the first year and opening of large amounts in the conditions of Estonia for the winning researchers no doubt created a positive attitude towards the framework programme and the ambition to participate in competitions which is so necessary in research activities.

VII. Improving Human Potential and Socio-Economic Knowledge Base

Compiled by Terje Tuisk
terje@archimedes.ee

The Improving Human Potential **(**IHP) Programme of 5th Framework Programme included several sub-programmes, in which it was not possible for Estonia to participate at the time of the 4th Framework Programme. FP5 opened whole new range of opportunities for our scientists, especially for people in Humanities and Social Sciences. The following table gives short overview of participation of Estonian institutions in IHP programme.

Table 10. **Participation of Estonia in the IHP Programme (as 1. November 2002)**

Activity	Number of proposals	Financed (success rate)	Average number of partners	Average budget	Average budget of Estonian partner
Marie Curie Individual Fellowships	10	6 (60%)			
Research Training Networks	4	3 (75%)	7	1 253 755	157 072,5
Raising Public Awareness	22	5 (22%)	9	489 458	56 942
High-Level Scientific Conferences	5	0	2	226 545	186 545
Support for Research Infrastructures	0	0			
STRATA	2	0	10	486 129	16 600
Socio-economic research	67	17 (25%)	10	1 350 350	93 104
Accompanying Measures	3	0	12	570 152	25 655

Total	113	31 (27%)			

113 proposals in total were submitted with Estonian participation and 31 of these approved to be successful (with success rate 27%). Approximately 80% of the 35 organisations that took part in successful projects were research institutions and only 3 were SMEs.

As a most positive aspect we have to mention the active and quite successful participation of Estonian social sciences research institutions at the all 3 Calls for Proposals in the Socio-Economic Research Key Action area. 17 of the 67 proposals submitted with Estonian participation were successful, which is a quite high percentage compared, for instance, to the participation of Estonian projects in some thematic programmes. Most of the successful proposals were submitted under the task 7 - "The Challenge of EU Enlargement". Proposals dealt with very different aspects of EU enlargement - European labour market, enlargement of Euro-zone, economical and political re-integration, churches in changing Europe, challenges from democratisation, population policy, gender and governance. Proposal on the last topic - "Enlargement, Gender and Governance: The Civic and Political Representation of Women in EU Candidate Countries" had the second best evaluation score of all IHP proposals with Estonian participation - 86,5%.

22 proposals in total were submitted to 4 calls for proposals for Raising Public Awareness, 5 of them appeared to be successful, in one case the co-ordinator was from Estonia -- the only successful IHP proposal submitted by Estonian co-ordination. Two proposals unfortunately did not reach the evaluation round, as they did not meet administrative requirements (one of them lacked a partner from an EU Member State in the consortium and the other project proposal arrived after the deadline). Another 2 proposals did not reach the evaluation round because they did not fit with the Work Programme and Call for Proposals requirements. Among successful proposals in this area was also the most successful proposal with Estonian participation in IHP programme with evaluation score as high as 94 %. The proposal is titled -- "e-Awareness for Europe: Digital Awareness and Security for the Citizen in Europe".

Four Estonian organisations participated in the projects of Research Training Networks and 3 of them proved successful. 10 young Estonian researchers in total participated in 6 evaluation rounds of the Marie Curie Individual Fellowships and 6 of them were successful. Although the success rate (60%) is impressive, the opportunities provided by the Research Training Networks and Marie Curie Fellowships for strengthening Estonian research groups with young researchers from abroad should have been used more extensively. As most of the schemes will still be in place in FP6 with slightly changed requirements, the work on promoting these possibilities should go on.

Five Estonian research institutions tried to use the opportunities provided by High-Level Scientific Conferences, unfortunately with no success. As the same, slightly developed, scheme will work in FP6 it is necessary to arrange a separate information campaign for the broader promotion of the opportunities contained in the programme. There are no statistics on the number of Estonian researchers and, particularly of young scientists, who have used the opportunity of participating in conferences financed in FP5. Two proposals with Estonian participation were submitted under

STRATA project that is directed toward the development of research and technology policies, also unfortunately with no success.

The only sub-programme within IHP programme where there was no proposals submitted with Estonian participation was the of Access to Research Infrastructures although the lack of a large-scale research infrastructure in Estonia should have been all the more reason for the local research groups to make use of the opportunities provided by the IHP programme.

All IHP proposals were evaluated and marked in 5 areas, each of these with different weight to the final score:

1. Scientific and technological quality and innovation;
2. Community added value and contribution to EU policies;
3. Contribution to Community Social Objectives;
4. Economic development and S&T prospects;
5. Resources, Partnership and Management.

In average the proposals with Estonian participation got the highest scores in first and lowest in last area. Result shows that the scientific value of proposals has been high, our scientists are very professional and innovative, but the proposals were lacking the high level management schemes. This fact should be seriously considered in entering to FP6, were European Commission plans to give much more weight to project management by project team and wants to give much more management and financial independence and also responsibility to the projects consortiums. As it was mentioned earlier, the highest evaluation score for the proposal with Estonian participation was 94% and the lowest score for successful proposal was 62.5%. If we take into account that the average evaluation score through all the proposals in IHP programme with Estonian participation was around 61% and during all 4 years of FP5 (more than 25 Calls for Proposals under IHP Programme) Estonians took part in only 113 proposals (31 with success), we can conclude, that there is enough room of improvement in both -- participation activity and quality of proposals.