# SIBERIA IN IST

Information Society
Technologies

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## I. Introduction

This publication aims to promote EU-Russian cooperation in IST and to raise in particular the awareness for the potential of the Sibirsky Region for IST. The booklet includes a collection of articles written by European and Russian experts active in the field of ICT, IST and INTAS. "Siberia in IST" describes briefly the Sibirsky Region and ICT research in this area of Russia, including the IST-activities of some Siberian researchers. A brief historical overview of EU-Russian cooperation in research and technological development is offered. Two examples of a successful EU-Russian collaboration in IST are presented as a showcase as well as some EC-funded support actions promoting EU-Russian collaboration in IST, NEST and INTAS.
The publication is made in the context of the IST project "SITE - Siberia, information technologies and Europe", running from July 2004 until December 2006. The aim of SITE is to enhance cooperation between European and Russian (particularly Siberian) researchers in IST. More information on SITE can be found on page 28 of this publication.

## II. The Sibirsky Federal District - an unknown giant to the east of Moscow

SITE – Siberia, information technologies and Europe - brings a very distant Russian region covering an area in excess of 5 million km² nearer to Europe: Sibirsky Federal District/SFD. SFD is distinct from the geographic Siberia, which is an even larger entity of nearly 10 million km². SFD is one of Russia's seven federal districts and is the most central of the three Asian districts in the Russian Federation.



The public perception of Siberia has considerably changed during the last ten years. While in the past, Siberia had the image of a vast and boundless prison for all types of unwelcome persons, it is now associated with its substantial natural resources. Siberia covers 50% of the territory of the Russian Federation, supplies 80% of Russian gas production, 70% of the oil, and 60% of the coal production. Almost all of the diamonds and other precious resources produced in Russia are extracted in Siberia. The biggest part of the Russian revenue from export comes from these natural resources.[1]
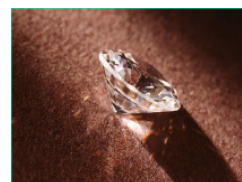
The population of Sibirsky Federal District/SFD is 20,542,000 inhabitants. Seventy percent of the population of SFD lives in cities, many of which were closed cities during Soviet times, but have been opened since the beginning of the 1990s. At present, SFD has great

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[1] Sibirien zwischen Kollaps und Kontinuität. Ethnologische Forschung, Max Planck Forschung 2/2002, page 55

industrial, scientific, and research potential. During World War II numerous industrial plants, factories and research centres were relocated to Siberia.

## Some impressions from the Sibirsky Region

### Novosibirsk– the administrative, scientific and cultural capital of the Sibirsky Region

Novosibirsk is located in the Novosibirsk Oblast, which neighbours the Omsk, Tomsk, Altai and Kemerovo Oblasts as well as Kazakhstan. It is the biggest city of Siberia, with a population of about 1,500,000 residents, and is the capital of the Sibirsky Federal District. The city came into being when the Trans-Siberian Railway was built at the end of the 19th century. Novosibirsk is now a cultural 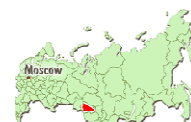center; it is well-known for its award-winning theatre and ballet performances as well as for its opera productions. It offers a modern airport and the biggest railway station of Siberia, operating connections to many cities of the Russian Federation and of other countries of Asia.

**Akademgorodok of Novosibirsk**
In 1943 the Siberian Branch of the Russian Academy of Sciences was opened in Novosibirsk. In 1957, Akademgorodok, a city of researchers, was built 40 kilometres to the south of Novosibirsk.
Akademgorodok was planned as the first purpose-built comprehensive science center in the world, and it was the first important scientific centre in Russia to be built far from Moscow and St. Petersburg. The aims were to balance the unequal distribution of scientific centers across the country and to stimulate research and development in Siberia. Akademgorodok was closed to the outside world, as many scientific centers in Siberia. When it was founded, many researchers moved from Moscow and St. Petersburg to Akademgorodok, and considerable efforts were made to achieve the highest possible standard of research.
Since its beginning, two leading principles were followed in Akademgorodok:
- Researchers were strongly encouraged to teach
- Young researchers had to gain practise at an early moment of their studies

Leading researchers therefore have always been at the same time professors and teachers in the various institutes of Akademgorodok, and students are exposed to good practical knowledge.
Among mathematics, physics, chemistry, geology, biology, life sciences, earth sciences, genetics, social sciences, ICT, and others an interdisciplinary approach has always been supported in Akademgorodok. The relationship between young researchers and their professors is usually close. Many students from Siberia, the Middle and the Far East have been and are attracted by Akademgorodok. The city also nowadays acts as guarantor for a high quality education and training of researchers. Akademgorodok is a very green city; it is not possible to cut down a tree without special permission. From the windows of the different laboratories and research institutes, researchers can see a variety of different trees and flowers.

17 international scientific centers are located in Akademgorodok, 37 research institutes hosting about 17,000 researchers, among them 84 academicians and 3750 doctors of science. In Soviet times, about 40,000 researchers worked in Akademgorodok.

*Lavrentev Prospect*

Lavrentiev Allee, named after a famous mathematician from Akademgorodok, can be found in the Guinness book of records as the "most scientific street in the world". More than 40

research, design and technology institutes of SBRAS are bordering this street. Nearly the half of the resources of SBRAS are dedicated to the Novosibirsk Science Center, located in Akademgorodok. Novosibirsk State University, the third biggest Russian university, is part of Akademgorodok.

There are two special schools in Akademgorodok, aiming to identify the most talented researchers of the Russian Federation: the College of Informatics and the School of Physics and Mathematics. Thousands of highly talented researchers have been educated at these famous institutes.

Mathematical and computer sciences are carried out at the Sobolev Institute of Mathematics, the Institute of Computational Mathematics and Mathematical Geophysics (Computing Center), and the United Institute of Computer Science which comprises the Institute of Computational Technologies, the Ershov Institute of Informatics Systems, and the Design and Technology Institute of Data Processing Equipment.[2]

Many software developers conceive applications for the various scientific institutes, and the applications are also marketed on a global level.

Today the city is open to everyone. Non-Russian companies cooperate with research institutes of Akademgorodok. Despite a declining population of researchers, obvious problems of restructuring, and a brain-drain to European Russia; Europe; and beyond, Akademgorodok is still one of the leading research sites of Russia.

Many conferences of local; regional; national; and international level are organised and hosted in Akademgorodok.


## Omsk – the city where Dostoevsky was exiled

Omsk was founded as a fortress in 1716, and during the 18th century, became the largest Russian fortification in Siberia. The city is located near the Novosibirsk region, and has currently more than 1,000,000 inhabitants. 6,3% of the population has German roots, descendants of Germans who came to Russia in the 18th century to settle near the Volga River and the Black Sea. During the 19th century, many members of the Russian Intelligentsia who found disfavour with the monarchy were exiled to Omsk, including Dostoevsky. Omsk also received the cultural influence of the liberal Decembrists which were exiled in 1825 from St. Petersburg to Siberia after a rebellion against Tsar Nicholas I. This had a strong impact not only on culture and education in Siberia, but also on the Russian language used in Siberia. Siberian Russian is still considered by many to be the clearest Russian in the entire Federation.
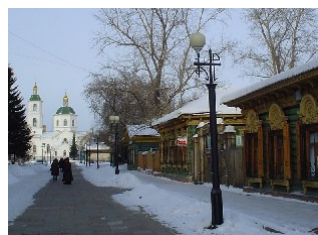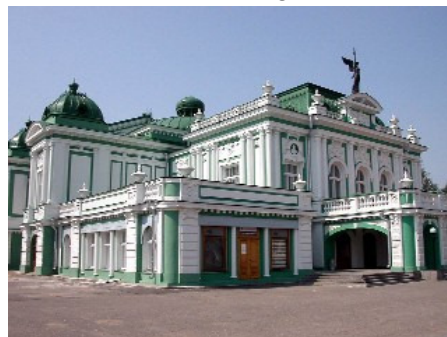
When the Siberian railway was constructed and Omsk was linked to the European part of Russia in 1895, a strong economic growth period started. The city gained also importance in 1918 when the anti-communist government of Aleksandr Vasiliyevich Kolchak was established in Omsk.

Between 1941 and 1945 over 100 enterprises of various branches were evacuated from the zone of the war front to Omsk and the Omsk region. Due to the resulting high number of military production companies, the city was closed during Soviet times. Since the middle of the 1950s Omsk became the center of a large petroleum refining and petrochemical

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[2] http://www-sbras.nsc.ru/sbras/akadem/objects/nauka11.html

complex.[3] Russian companies such as Siboil and Sibneft today train their personnel in the research centers of Omsk.

Omsk acts as a cultural, educational, and scientific center of the Sibirsky Region. The Omsk region hosts 83 public libraries. The city accommodates 13 museums and 8 professional theatres as well as a circus. Furthermore, Omsk maintains more than 200 public schools, 30 special secondary schools, as well 20 academic institutes, with 85,300 enrolled. There are more than 8000 active researchers located in Omsk.

The residents are working to turn Omsk into a garden city. In the year 2000 11.5 hectares were covered with green areas; in 2001 15 hectares.

Omsk nowadays not only participates in the Siberian Marathon which takes place each year in August in many Siberian cities and attracts participants from the whole world, but is unique in organising a winter marathon each year on January 7th, since three years the official (Orthodox) Christmas holiday in Russia. Half of the marathon, 21 km, is run in the deepest Siberian winter.

## Irkutsk – the "Paris of Siberia" located 6000 km to the east of Moscow
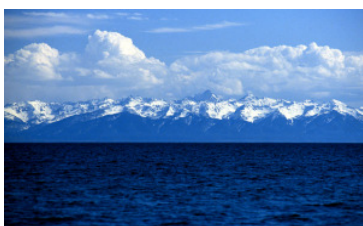
Irkutsk, the "Paris of Siberia", is located 5000 km to the east of Moscow close to the beautiful World Heritage Lake Baikal, the oldest; deepest; and largest volume freshwater reservoir of the Earth. During winter, lorries drive across the ice of the lake, which is more than 1600 meters deep in some places. Even the railway crossed the lake during the winter in former times. Irkutsk was founded as a fortress of Cossacks in 1661. The city also received a strong cultural influence of exiled aristocratic Decembrists who had revolted against Tsar Nicholas I in 1825.

Irkutsk, populated at present by nearly 590,000 inhabitants, hosts 6 universities, 40 research institutes (including the SBRAS), 40 internet-cafés, and 21 internet service providers. Every fifth inhabitant of Irkutsk is a student. Software development, automated systems and eLearning are priority areas among other RTD activities in Irkutsk. Minerals processing is an important economic activity in the region.
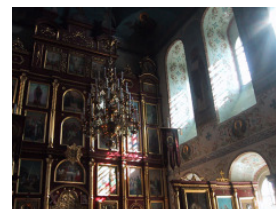
## Tomsk – hosting the two oldest universities of Siberia

Tomsk was founded as a military base in 1604. Its importance reached a first peak in the first half of the 19th century, when it was the administrative center of a huge Siberian area including parts of Kazakhstan. Additionally, gold mining attracted at that time many people to this city located 3500 km to the east of Moscow. About 30 industrial entities were moved from the European part of Russia to Tomsk during World War II. Tomsk, a closed city during the Cold War until the times of Perestroika, is today a lively scientific and cultural center of the Sibirsky Region, populated by nearly 500,000 people. Tomsk hosts several important universities with about 85,000 students. Tomsk State University and

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[3] http://www.omsk.ru/www/omsk.nsf/0/335366343C0E462A462571BE00370EAF?OpenDocument

Tomsk Polytechnical University are the oldest universities in Siberia, and among the oldest universities in all of Russia.

Due to the vast oil deposits in its surroundings, many oil mining and processing companies are nowadays active in Tomsk. The city has also gained importance because of its IT industry, with a particular focus on software development.

The population of Tomsk includes a minority of 13,000 German-speaking Russians - "Russlanddeutsche". In April 2006, a German-Russian summit took place in Tomsk, with Ms. Merkel and Mr. Putin meeting in the city.

AEER, the Association of Engineering Education of Russia, is at present presided by the Rector of Tomsk Polytechnical University, Mr. Yuri Pokholkov. AEER is the Russian partner in the IST- project "SITE – Siberia, information technologies and Europe".

## Krasnoyarsk – a center of scholarship widely unknown to European researchers

The city of Krasnoyarsk is the administrative center of the Krasnoyarsk Region; with a length of 3000 km and more than 2300 km², this is one of the largest regions of Russia. The Region hosts a rich fauna and flora and is famous for some unique national parks. Krasnoyarsk, founded in 1628 and located on the Yenisei River 4000 km to the east of Moscow, was linked to the Trans-Siberian Railway at the end of the 19th century and is since then an important rail station. The city was a closed city until the beginning of the 1990s. Today, Krasnoyarsk is a lively town with more than 900,000 inhabitants.

Krasnoyarsk is one of the most important industrial regions of the country and possesses rich natural resources. Raw materials such as coal, iron ore, non-ferrous heavy metals, gold, and water are abundant in the area. After 1917, many large plants and industrial entities were set up in Krasnoyarsk.

Electrical energy is inexpensive in this region rich in water. The biggest producer of nickel, cobalt, copper, and platinum worldwide, the mining company RAO Norilsk Nickel has important branch offices in the city of Norilsk, located to the north of the Arctic Circle in the Krasnoyarsk region. The company, Russia's leading gold producer, is the biggest employer in the Russian Federation. Machine building, food processing, wood-working and chemical industries are other areas of activity of the region. Furthermore, important military and nuclear production centers are settled in the Krasnoyarsk region.

The Krasnoyarsk region is mainly populated by ethnic Russians, but also by Germans and Ukrainians. Furthermore, there are a growing number of Chinese immigrants. During the Soviet times of Stalin, Krasnoyarsk was a center of the Gulag system where many political prisoners were banished. Many places are known for having been the exile of famous personalities.

In recent years, Alexander Lebed, the governor of Krasnoyarsk Krai, became well-known for his engagement

for peace in Chechnya as well as for his fight against delinquency. Mr. Lebed died in a helicopter crash in 2002.

A local museum, founded in 1889 and entirely renewed between 1987 and 2001, features the history of Siberia, including the local ethnic cultures as well as Russian culture covering 5 centuries and the main historical events.

Nowadays, 20 research centers and many higher education institutes and universities can be found in Krasnoyarsk. Krasnoyarsk State University is an example of a prosperous university and research center with more than 12000 students enrolled.

## Kemerovo, the capital of the Kuzbas coal mining region

Kemerovo, the main city of the Kuznetsk Basin (Kuzbas) coal-producing area, is located in the south-western part of Siberia, quite in the center between the western and eastern frontiers of the Russian Federation, approximately 3500 km east of Moscow.

Kemerovo is one of the most important industrial centers of the Russian Federation, and plays an essential economic role in Siberia. The Kuznetsk Basin is one of the largest coal-producing areas in the world. When Kemerovo was connected to the Trans-Siberian Railway, during the 1920s, the coal mining industry gained importance for the whole Russian Federation. Metallurgy, coal mining, mechanical engineering, and chemical industries have strongly influenced the city. The Kemerovo region, covering an area of 95,500 km², is one of the most urbanized regions of Russia.

There is also considerable research and technological development in the field of IT in Kemerovo: Kemerovo State University and the Kemerovo Regional Center of New Information Technologies carry out research and develop innovative IT applications, with a special focus on e-learning and distance training.

## III. The research potential for IST in the Sibirsky Region

There is considerable research potential for the IST-priority in SFD. As nearly all cities of the Sibirsky Region were closed during Soviet times, they are currently undergoing a huge transformation. This process started at the beginning of the 1990s and continues to this day, though there is little information about the research potential of the Sibirsky Region for IST. Actually, the Sibirsky Region hosts some 250 research institutes and approximately 66,400 researchers. The Association for Engineering Education of Russia (AEER) collected within SITE the research profiles of 268 Siberian research teams active in areas relevant for IST . The profiles were analysed and categorized and are now available online via the SITE database for partnering.
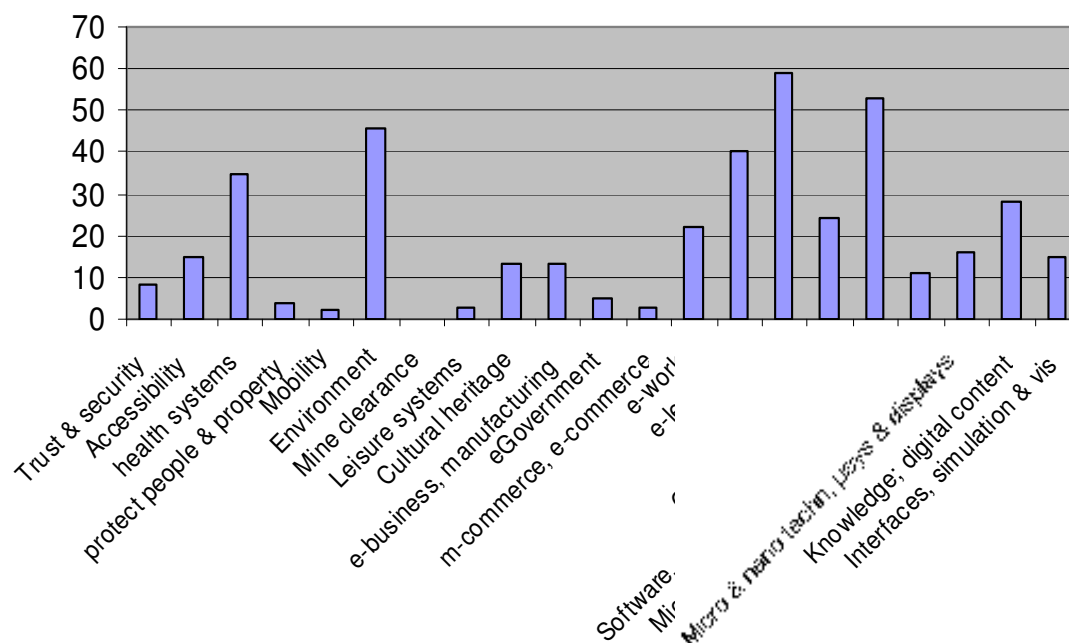
The database mirrors the research potential of the Sibirsky Region for different thematic areas of IST.

Among other areas, GRID, software and embedded systems, as well IST-related environmental research, IST-related research into health systems and e-learning are areas with strong potential for IST. But in fact, the Sibirsky Region is active in all of the thematic areas of IST.

## Showcase of ICT research in the Tomsk region: innovative IT-programs of the "Cybernetic Center" of Tomsk Polytechnic University

Tomsk Polytechnic University (TPU) was founded in 1896. It was the first technical university between the Ural Mountains and the Russian Far East. Nowadays, TPU has the status of the largest technical university in this region. In 2006, the 100th anniversary of the first Siberian engineers graduated at TPU was celebrated.

Since 1906, 135,000 engineers, bachelors of science, masters of science, PhDs, and doctors of science were trained at TPU.

As for IT, the essential personnel and information and telecommunications resources of the university are concentrated in the Cybernetic Centre, such as the central telecommunication hub – TPU Net and a supercomputer cluster.

The university tries to increase the efficiency level of scientific research and the quality of specialist training. TPU was certified 6 years ago by NQA (UK) according ISQ 9001, and some educational programmes were accredited at international centers such as the "Computer Science" programme in Global Alliance for Transnational Education GATE (USA) and the "Computer Engineering" programme in the Canadian Engineering Accreditation Board CEAB (Canada).

The authorized training center of TPU & Soft Line Academy was established in the Cybernetic Center with the intention to promote the IT competence among students, post-graduates and professional-oriented environment. At the level of IT professionals, the center applies a rich educational menu in the sphere of operating systems, application packages, IT products and technologies of such world vendors as Microsoft, Oracle, Shlumberge, Landmark, and others. Being in the scientific and educational environment of the Institute and University, this center has ample technical resources, methodical support, and certified staff for all levels: from IT specialist to IT tutor.

The major trend of the center activity is to establish and promote applied software systems at the IT market based on new IT technologies. The Cybernetic Center has the scientific and applied experience of the development of such systems for the oil and gas industry and others.

One system, the "Magistral – Vostok" is a corporative geoinformation system guiding oil and gas industrial enterprises. "Magistral – Vostok" is a multi level system, and operates at a high management level, at the sub-system level, and at the industrial sector level. The system is involved in highly developed services of hydrodynamic modelling, a number of sub-systems to display industrial information, pipeline design, information visualization, and others.

The second system, which was created at the Cybernetic Center, is a software system to work with ontology models and knowledge bases. The application area for this software system: semantic web - more precisely, semantic web-portals which contain, apart from traditional IT-facilities,  metadata servers, the ontology server, the ontology editor, and a deductive inference engine.

A wider application area is the Knowledge Management Systems (KMS) to work with explicit and tacit knowledge on the basis of ontology modules.  For tacit knowledge, KMS includes Virtual Teams, Expert Net, Communities of Practice, and Knowledge Base of specialist competence.

The high level of research carried out at TPU and at the Cybernetic Center has led to the creation of innovative centers by noted international IT companies at the cybernetic institute.

Mr. Vladimir Yampolskiy, head of the Cybernetic Centre at TPU, participated in the EU-Russian networking session "Spotlight on Russia in IST", which was organized by the Austrian Research Promotion Agency, European and International Programmes, together with the Association for Engineering Education of Russia/AEER on 23rd November 2006 at the IST event 2006 in Helsinki, Finland.

Mr. Yampolskiy presented the institute to an interested public of researchers and research stakeholders from Europe and Russia.



He was born near Khabarovsk, located in eastern Siberia at the river Amur, 700 km to the west of Vladivostok. He graduated from Tomsk Polytechnic University in 1960. Since 1988 he has been leading the Cybernetic Center.
At the IST event Mr. Yampolskiy listened to the trends and the structure of the FP7 ICT Work Programme, studied carefully the exhibition of IST 2006 projects, and got in contact with a number of representatives of institutes and organizations of European countries and other programme participants, such as the German Research Center for AI; Fraunhofer FIRST, Umea University; Sweden, Helsinki Institute for IT; Finland, Jozef Stefan Institute; Slovenia, Queen Ma**ry**; University of London; UK.

In the future, Yampolskiy considers the most important challenge for the institute to be "cognitive systems, interaction, robotics" and "digital libraries and content". The Cybernetic Center will refer to its proposals for potential partners, contacted at IST event, in December 2006.
Thematic areas for possible cooperation proposed by Mr. Yampolskiy:

- "Research and development on creation Semantic Web-portals for cognitive systems"
- "Methods, algorithms and software for create deductive inference engine"
- "Methodology and software to create knowledge base of specialist competence".

Author and contact for more information:
Vladimir Yampolskiy
Director of the Institute, Professor at TPU Tomsk

Institute "Cybernetic Center" of Tomsk Polytechnic University,
634034, Tomsk, Sovetskaya St. 84
Russia

Phone +7-3822-420479
Tel/fax +7-3822-420718
E-mail: cc@cc.tpu.edu.ru
www.cctpu.edu.ru

## Specific features and challenges of IST Research: lessons learned from collaboration with the Siberian Branch of Russian Academy of Sciences (SB RAS) and other Russian institutions

This contribution is based on the author's experience in collaboration between European and Russian institutions in the field of IST gained during his work at INTAS as Scientific Officer for Information Technologies, as well as previous experience in managing of IST projects within several EC-funded Framework Programmes. The author is the Call Manager for the recently launched INTAS – SB RAS collaborative call for project proposals. This background allows using the corresponding experience for the verification of the discussed ideas.

### IST research in SB RAS – one of the world biggest scientific centers

The SB RAS includes more than 100 institutes, 9 scientific centers located in Siberia (http://www-sbras.nsc.ru/en/) and employs over 33,000 personnel, including over 6,700 researchers with a PhD degree.  The biggest Siberian scientific center is located in Akademgorodok (Novosibirsk) and comprises about 50 institutions. Their activities cover practically all the fields of natural, mathematical, computational, and humanitarian sciences.

Due to specific features of information technologies, namely their high applicability to numerous fields of fundamental and applied research, IST is under development in many SB RAS institutions. However, there are at least five SB RAS institutions, which are mainly in the field of IST: the Institute of Computational Modelling, the Institute of Computational Mathematics and Mathematical Geophysics (Computing Centre), the Institute of Computational Technologies, the A.P. Ershov Institute of Informatics Systems, and the Design & Technology Institute of Data Processing Equipment. The SB RAS publishes a journal called "Computing Technologies" (Editor-in Chief: Prof. Yury I. Shokin, Academician).

### The INTAS mission and activity in the field of IST and the INTAS – SB RAS Collaborative Call 2006 for Project Proposals.

INTAS was established in 1993 as a non-profit international association for the promotion of scientific cooperation between researchers in the Newly Independent States (NIS) of the former Soviet Union and its member states (http://www.intas.be). In 2006 its members are the European Community, the 25 EU Member States, and 7 like-minded countries. INTAS helps to preserve scientific potential in the NIS through international cooperation. During its

history of 1993 – 2006, INTAS has provided more than 250 million Euro funding for approximately 3,000 research projects & networks; approximately 16,000 teams of scientists; about 1000 young scientists' fellowships; about 270 conferences & workshops; 60 summer schools, and 30 infrastructure actions. These activities have been implemented through several instruments: Open Calls; Thematic Calls; Collaborative Calls; Young Scientist Fellowships Calls; Innovation Grants Calls, and Accompanying Measures (Summer Schools, Conference Supports, etc). All the Open Calls, most of the Collaborative Calls, the Young Scientist Fellowships Calls, and the Accompanying Measures included the IST field. INTAS launched in 2004 a specific Thematic Call on IST.

In 2006 INTAS has launched a collaborative Call for research project proposals with the SB RAS with a budget of € 1.74 million, shared between the SB RAS (approximately 42%) and INTAS (approximately 58%). An INTAS research project is a joint undertaking by a partnership of teams ("consortium") designed to produce new knowledge through experimental and/or theoretical scientific research, whereby each team of the partnership actively pursues specific objectives with a view to pooling the results to contribute to common, well-defined objectives. The scope of the call covers eight topics (http://www.intas.be/documents/FO/Calls_2006/Call%20SB%20RAS%202006%20Info%20P ack.pdf), including two directly related to the IST research: "Pure and applied mathematics and mathematical modelling in other sciences" and "New paradigms in information technologies, including bioinformatics".
INTAS received 231 eligible project proposals. All proposals were evaluated by three independent experts using the published evaluation criteria. The Call was indeed oversubscribed with very good proposals: with the budget available for this call from INTAS and the SB RAS, it was possible to support only 13 projects out of 231 project proposals.
The corresponding consortia include 27 teams from 12 EU countries, 2 teams from other states associated to INTAS (Switzerland and Israel), 19 Siberian teams, and 13 other teams from the NIS (Russia, Belarus, and Ukraine).

## Specific feature of IST research and corresponding challenges: Information Technology Transfer approach

An analysis of the INTAS experience of collaboration between Europe and Russia in the field of IST, confirmed by the outcomes of the recent INTAS – SB RAS Collaborative Call, shows that the current level of such collaboration is below the level that could be reached due to high potential of Russian researchers in the field of IST.
The standard way from scientific ideas to specific applications is as shown in figure 1. Usually, INTAS supports activities within fields 2 and 3 (Research Projects) or 4 (Innovation Projects). The EC Framework Programmes are also mostly addressing these fields, with an emphasis on field 4 (specific applications to be commercialised and brought to the market).
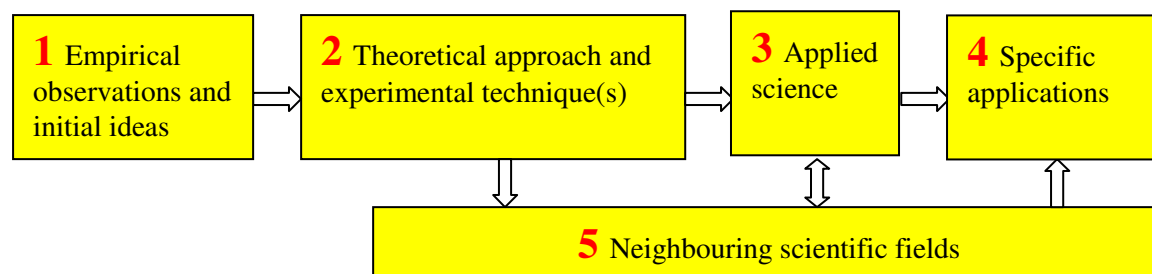


Figure 1: From scientific ideas to practical applications.

However, in the field of IST a different situation could often be observed. Namely, research and technological teams, involved in specific applied or fundamental research projects in various fields are developing very advanced and original IT applications needed for their specific objectives within such projects. That is, first, due to the fact that most of modern research and most of modern research and development (R&D) involve essential

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data flows. These data usually have to be extracted, filtered, processed, compressed, stored, and presented in a user-friendly form. This often demands an IST component in projects in various fields. Second, frontier R&D often deals with rather complex systems and phenomena, therefore the corresponding information processing support demands non-trivial IT solutions.

At the same time, such IST technologies developed within R&D projects in various fields rarely become known to a broad community, which prevents their exploitation both in other applications and in general IST development. The reasons are:
- IT developments within specific projects (not aimed in IST itself) are not the objectives of these projects. They play a service role and often are not considered by the developers as something having an independent added value;
- Leaders of R&D teams, being specialists in their own fields and being devoted to their own R&D domain, do not care about possible contribution to IST;
- "Service" IT developments within such projects usually are either done by young researchers within the teams, who are gifted and educated in IST, or delegated to "guest stars" – qualified IST developers invited for these specific tasks. In the first case the developers do not have enough experience and/or authority to promote their achievements. In the second case external personnel is not too much interested or doesn't feel itself in a position to exploit in other situations results ordered and financed by a specific customer.

This makes a challenge to search for an alternative approach that may be of high efficiency for IST (see Fig.2): namely, to develop a mechanism allowing supporting developments marked by the red block arrow in Fig.2.
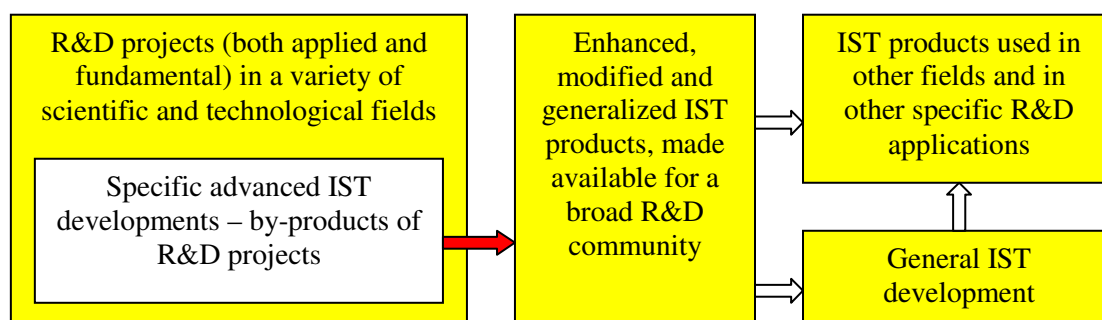


**Fig.2: Information Technology Transfer approach.**

The corresponding approach may be called as "Information Technology Transfer" (ITT) and aims in a support of generalization of specific applied results, having in mind possibilities to use them in both in "core science" and in broader fields of application. The advantages of the proposed approach may be:
- Strengthening of research the field of IST through involvement of a broad community of skilled IST developers, who could be hardly involved otherwise (see the reasons above);
- Spreading of international (in particular, Europe-Russia) collaboration to skilled personnel who is not working now in big academic or educational bodies, but in small and medium enterprises (by economical reasons), although many of them have academic background and have essential achievements in IST development;
- Bringing "from the underground" results of high potential, which are not available now due to the reasons listed above.
- Testing of a non-standard collaboration mechanism, which sometimes brings unexpected benefits.

Author and contact for more information:
Yuri Melnikov
INTAS – International Association for the promotion of co-operation with scientists from the New Independent States of the former Soviet Union;
58/8 Avenue des Arts, 1000 Brussels, Belgium; Tel. +32 2 549 01 20 –
 Fax +32 2 549 01 56 – Yuri.Melnikov@intas.be – www.intas.be

# Case studies of Siberian research teams in IST

## Yuri Zagorulko, A.P. Ershov Institute of Informatics Systems, Akademgodorok, Novosibirsk, Sibirsky Federal District of Russia

Yuri Zagorulko studied at the Novocherkassk Polytechnic Institute in the Rostov region. In 1978, still a student, he went to Novosibirsk for a placement at the Computer Center of the Siberian Branch of the Academy of Sciences of the USSR. At the Computer Center, he was a postgraduate student of the Academician Andrey P. Ershov, a famous Russian researcher. Once graduated from the Novocherkassk Polytechnic Institute, he left again for Novosibirsk, and is still working in that city at the Ershov Institute of Informatics Systems.

Andrey P. Ershov was one of the early Soviet pioneers in the field of theoretical and systems programming and a founder of the Siberian School of Computer Science. He significantly contributed to the establishment of informatics as a new branch of science and a new phenomenon of social life.  A.P.Ershov's works on software engineering formed the basis of this research direction in the Soviet Union. He played an active role in the foundation of the Novosibirsk Computer Center. In the 1960s his popular lectures greatly influenced the formation of programming as a profession.
Mr. Ershov was also very well recognized on an international level. For example, A.P.Ershov was appointed Distinguished Fellow of the British Computer Society, and in 1981 he received the Silver Core Award for services rendered to IFIP.
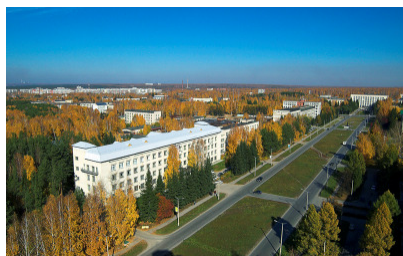
From 1978 until 1988, Yuri Zagorulko worked under the auspices of the famous Andrey Petrovich Ershov in Akademgodorok. Looking back, Mr. Zagorulko considers this period, when he was working with Mr. Ershov, as one of the most fascinating periods of his life. He very much benefited from the stimulating environment created by this famous Academician.
Mr. Zagorulko made his first efforts in the EU-Framework-programme when he took part in a proposal targeting Call 5/IST, closed on 21st September 2005. Supported by the SITE consortium, but also by Ms. Victoria Terehova, the regional manager of AEER at the SB RAS of Novosibirsk, Mr. Zagorulko started to work with FP6 and IST. This included steps such as partner search in Europe among the IST research community, the development of a project idea actually addressing one of the strategic objectives of Call 5/IST, the need to conceive work packages and the identification of a coordinator.

Nominated by the regional manager of the SBRAS in Novosibirsk, Zagorulko took part in the training for proposal writers carried out by Singleimage in Tomsk at the beginning of July 2005 in view of Call 5/IST.

**Partner search in IST and consortium building**

Russian researchers experience that partner search is hard for newcomers in the IST-priority, in particular for those who can't yet rely on personal contacts within the European IST community. Yuri Zagorulko found most of his partners via Ideal-ist[4]: "I did a search on Ideal-ist. My project idea raised the interest of 45 researchers from Europe and beyond, who had the intention to submit a proposal to Call 5". It took Yuri some time to analyse all the replies and to find out who really was an appropriate partner for him, if not a coordinator taking up his idea. Finally, after some email exchanges, he filtered out Sheffield Harlem University and the Middle East Technical University of Ankara (Turkey) as the most active and interested counterparts. Sheffield Harlem University, very experienced with IST-projects, invited a small British company to join the proposal under preparation, as well as a company from Slovenia. The coordinator was again found via Ideal-ist: In the end, Mr. Zagorulko remembers, 6 out of 9 partners were found via Ideal-ist. One partner was also found thanks to Singleimage, the partner of SITE responsible for supporting Russian applicants.

Mr. Zagorulko prepared first a short description of his project idea and then a longer prospectus.

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The main idea was to develop an adjustable knowledge internet portal providing content-based access to systematized knowledge and information resources relating to a certain area of knowledge, activity or culture. The project was addressing 2.5.10/ Access to and preservation of cultural and scientific resources of Call 5/IST.

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Actually Mr. Zagorulko, who had initiated the idea, wrote the entire concept in English. It was finalized by the British partner. "We as Russians can't coordinate" Mr. Zagorulko emphasizes, "but we need to be active". "Although", he confirms, "this was a challenging process". The Italian coordinator developed the management part, including the budget, but partners were involved and were invited to modify the financial tables along their needs and calculations. "I sent more than 20 messages every day", Yuri Zagorulko remembers, mentioning difficulties related to the time difference between the partners. Formulating the project by involving the partners was very hard, and Yuri Zagorulko acknowledges that he modified, rewrote and fine-tuned the proposal more than 10 times before it was submitted. "We had not enough time in the end", he regrets, "one more week, and we would have been able to improve the proposal substantially."



"VANISH/ Valuable Advanced knowledge Internet portal for Semantic access to vanishing cultural Heritage" was submitted in time to Call 5/IST via the online submission system EPSS by the coordinator, the Italian company SPACE, but it was not accepted. However, Yuri Zagorulko considers the experience as worthwhile.

**Benefits of the work done**

Asked about the benefits of the work done, in spite of the failure of the proposal, he mentions the following points:

- **A small network of contacts**:
    If he prepared a new project, he would include 3, even 4 partners from the "old" group, in particular those who were most reliable. This small network can help a lot when preparing a new proposal, Mr. Zagorulko believes.

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[4] http://www.ideal-ist.net is an IST-project funded by the European Commission under the IST-priority of FP6. It supports partnering in view of IST, and is active once an IST call has been published. Russian researchers can submit their partner searches to find European partners.

- **More insight into the resources needed for a good proposal**:
  Mr. Zagorulko realised how hard it is to submit a really good proposal and to win it. He recognizes that he underestimated the considerable effort needed to achieve a qualified consortium with reliable partners, involving all of them in an appropriate way. Next time, Mr. Zagorulko will start earlier when preparing for a submission. "I intend to start at least 6 months before the closure date" he assumes, "This is necessary for developing a competitive proposal".
- **A coordinator who is really committed**:
  Mr. Zagorulko believes that if the coordinator is not convinced and active behind the proposal, there is the risk of an impact on the quality of the preparation and in the end on the proposal. Next time, he hopes to identify a coordinator who will really be the driving force of the proposal.
- **The importance of the IST Work Programme**
  Mr. Zagorulko realised how important it is to stick to the IST Work Programme and to carefully address a strategic objective of an open call. "I was not aware", he underlines, "that even a very good proposal has no chances of success if it doesn't address exactly one of the thematic areas defined by the wording of the Work Programme."
- **Winning is not the only benefit**:
  To participate in a proposal development is, Yuri Zagorulko believes, a good method to get into contact with other researchers from Europe. He hopes that the researchers he got acquainted with thanks to VANISH will contact him (and his team) again should they become involved in another proposal in the future. Mr. Zagorulko states that as Russians are not entitled to coordinate an IST-project, for Russian researchers it is very important to get invited into a project. This is only possible if European researchers know about specific Siberian research teams. In this sense, even if VANISH was not successful, it will facilitate the networking of Yuri's team in the future.
- **The need for face-to-face meetings**:
  Mr. Zagorulko considers that is very important to have a personal meeting before a proposal is submitted. A personal meeting definitely improves the relationship between the partners, mutual trust and the individual reliability.

The failure of VANISH did not stop Yuri Zagorulko's efforts to get involved into collaboration with European researchers.
Currently, Yuri Zagorulko is preparing for FP7. Supported by the SITE-project, he submitted a paper to the e-Challenges 2006 conference which took place at the end of October 2006 in Barcelona, Spain. His paper was accepted and SITE provided the funding for his participation.
FFG/Austrian Research Promotion Agency and AEER/Association for Engineering Education of Russia organised a brokerage event at the e-Challenges 2006 where Mr. Zagorulko was

involved. Staffed with the draft IST Work Programme 2007 and 2008 and an attractive flyer with an outline of his most recent research and a project idea in English called "An adjustable knowledge internet portal for intelligent access to distributed digital content", Mr. Zagorulko was well prepared for meeting new potential partners at the e-Challenges. Mr. Zagorulko considers his participation in the e-Challenges '06 as successful:
He discussed about his project idea many times during the days of the e-Challenges 2006. In fact, Mr. Zagorulko by now creates more and more contacts to Europe, and is getting used to it. He met, for example, a Finnish researcher of Russian origin, and after some fruitful and promising discussions they decided to stay in contact for future projects.

In fact, Mr. Zagorulko knows many Russian researchers located in France, Great Britain,

Finland – he considers these relations as the most reliable ones. Once there will be positive outcomes of his efforts, he is convinced, and the A.P. Ershov Institute of Informatics Systems will be the partner of a successful IST- proposal.

## Victoria Dubich, Krasnoyarsk State Technical University, Faculty of Engineering and Physics
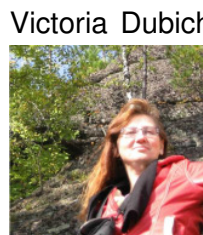
Victoria Dubich is employed as an Associate Professor at the Faculty of Engineering and Physics of Krasnoyarsk State Technical University. Ms. Dubich graduated at the classical university of Krasnoyarsk in 1984. Since then she has been living and working in Krasnoyarsk. Her research focuses on eHealth, respectively computer-assisted neural network medical signal processing. Her main publications are:
1. Development of a neural network system for diagnosing eye disorders, Proceedings of the 10th All-Russian Workshop "Neuro-informatics and Applications", 2002;
2. Processing of input data for the Подготовка входных данных neural network system in diagnosing eye disorders, Proceedings of the 11th All-Russian Workshop "Neuro-informatics and Applications, 2003;
3. Discrete data cone-like transform in eye disorders diagnostics, Proceedings of the 5th All-Russian Workshop on Modelling of Non-equilibrium Systems, 2003;
4. Testing of the neural system for diagnostics of eye diseases, Proceedings of the 3rd All-Siberian Congress of Women Mathematicians, 2004.

Ms. Dubich is convinced that her research results are of interest to European colleagues. She has developed a technology to carry out diagnostics. Thanks to this technology, the monitoring of the health and condition of the patient is facilitated by cardiograms, encephalograms, eye parameters (for eye diseases) as well as other parameters. The computer provides conclusions on the health and condition of the patient.
Ms. Dubich believes that the monitoring system could be further developed within IST and employed as a diagnosis tool and for continuous monitoring of the condition of the patient.

Ms. Dubich actually participated in a proposal submission to Call 6/IST. She received local support from Ms. Natalia Edwards when trying to understand the rules and the framework of IST. Natalia Edwards acts as the manager of the Regional Center of SITE at Krasnoyarsk State Technical University in SITE, which means she acts as an information point for IST on behalf of the SITE project within the region of Krasnoyarsk.
Victoria Dubich found her IST project partners when taking part in a brokerage event organised by FFG/Austrian Research Promotion Agency and AEER/Association for Engineering Education of Russia during the Med-e-Tel 2005 conference. Ms. Dubich presented a paper at the Med-e-tel 2005 in Luxembourg. Her objective was to develop a special software to improve the diagnosis in medicine. Her presentation and participation in the Med-e-Tel conference enabled her to create useful contacts with European researchers from Italy, Germany, Switzerland, Great Britain, Denmark, Greece and Belgium. Ms. Dubich also met a representative of the European eHealth forum, and was offered to join the forum as an active participant.
Apart from the contacts made at the Med-e-Tel 2005, Victoria Dubich found other partners at an international conference which took place in Krasnoyarsk and via the RUSERA database.

RUSERA was an INTAS project coordinated by AEER. BIT/Bureau for international research and technology cooperation, merged into FFG/Austrian Research Promotion Agency by September 2004, was a partner. The aim was to promote collaboration between Russian and European research teams in the Sixth's EU-Framework Programme. More information can be found at http://www.rusera.tpu.ru/ .

Prof. Stefania Bandini, Università degli Studi di Milano-Bicocca, UniMiB, Italy, finally submitted the project VitaMAP/ "The Development of Distributed System for Home-based Monitoring Ageing People Vital Signs", a STREP, to Call 6/IST. Research teams from 5 countries were involved.

The aim of the VitaMAP-project was to develop a technology for home-based monitoring of vital signs of elderly people. At present, there are medical measurement appliances and even diagnostic systems for home use. But a patient is not able to do a skilful analysis of the data obtained from those measurements and make correct conclusions about his/her health state. So the idea was:

-to develop computer assisted methods (including artificial intelligence methods) for automatic computer based processing of vital signs able to determine the level of health state of a person.

-to transfer, with the use of modern telemedicine methods, these data about a person's health to a special centre in the hospital, to the relatives of the ageing person if they want to get them

Furthermore, the elderly person should be enabled to take regular measurements using simple home medical appliances.

The software to be developed within the project was expected to process these data automatically; the artificial intelligence should have compared today's vital signs with the previous ones and provide information about the current health state. If the state was normal there would have been no need for a doctor's interference. If the results of processing would have shown any changes in the level of health then the patient, the relatives, and the doctor, had got the information immediately, and in case of emergency the signal would have gone also directly to the ambulance. Immediate advice by doctors, based on telemedical communication, would have been enhanced. So an elderly person, as a result, would be able to stay longer at home in his/her usual environment and get immediate help in case of changes in the level of health state.

Although VitaMAP was not accepted, but Ms. Dubich still considers the experience as worthwhile and believes she and her research team gained a lot of insight to build on in the future.

**Main benefits from the experience:**
**Partnering**
All the project consortium partners and more contact persons have been found within the framework of the SITE activities. Thanks to the recommendations of AEER, the central coordination unit of SITE located at Tomsk Polytechnical University, Ms. Dubich was well prepared for making contacts: Flyers on the project idea were widely disseminated during the Med-e-Tel conference 2005.. The same materials were used at other international conferences.

**A better self-assessment in an international context**
Ms. Dubich and her team got recognition for their scientific work in European scientific circles through her participation in a European conference like the Med-e-Tel-2005.

**Proposal development**

Ms. Dubich considers that in the course of the SITE project realization, her research team members got a sufficient understanding of consortium building, interaction, funding requirements, proposal outlay regulations, and partner search engines existing in EU and general tips on joint European research activities. Ms. Dubich appreciated the support to proposal development carried out by Singleimage, the coordinator of SITE: The project proposal was submitted as a START-idea and received a detailed evaluation report from Singleimage. This evaluation contributed tangibly to a new wording and outlay of the proposal.

Moreover, the research team leader Victoria Dubich has been repeatedly trained by the SITE consortium in the field of project development and FP regulations and rules. In the course of consortium building, the team got also awareness for the ethical approaches towards European-Russian interaction and joint research dimension of work and communication.

The consortium is still keeping lasting contacts, considering the possibility of submitting a modified proposal to a new IST Call in FP7. That may require changing the project objectives, purpose groups and the proposal text, to conform to new requirements and objectives. Nonetheless, Ms. Dubich is convinced that the project idea stays acute and innovative in medical and social fields, and that it will be resubmitted to a relevant Call.

## Pavel Lozhnikov, Siberian State Automobile and Highway Academy, Omsk

Pavel Lozhnikov works in Omsk, at the Siberian State Automobile and Highway Academy which was founded in 1930. The Academy is one of five Automobile and Highway Academies in the former Soviet Union. The Academy attracts not only students from the whole Russian Federation, but also from neighbouring countries such as Kazakhstan, Uzbekistan, Turkmenistan, Tajikistan, Ukraine, and even China. There are 6300 students enrolled at the Academy; about 15% are from outside Russia, most of them from Kazakhstan, which neighbours the Omsk region. The Siberian State Automobile and Highway Academy has a strong cooperation with universities of Germany and Austria. Graduates of the academy work on managerial levels in Russia, Germany, Canada, and Israel.

The Information Security Department, where Lozhnikov works, was founded six years ago and employs today 20 people. It specialized on three areas of research:
- Complex maintenance of information safety of automated systems;
- Automated systems of processing of the information and management;
- Applied computer science in economy.

The institute has a very good reputation in Siberia, and well-known Russian companies such as Sibneft, Lukoil, and Siboil regularly send their staff for training at the institute.

> While teaching all three areas and being MCP[5] and MCSA[6] , Mr. Lozhnikov is basically a specialist of complex maintenance of information safety of automated systems. The paper he presented at the e-Challenges 2006 "Biometric system of users identification by handwriting dynamics "TEOFRAST[7]", is dedicated to this topic. Mr. Lozhnikov would like to prepare a Web portal that provides a server for users' authentication by a handwritten password for companies and organisations that need additional security for their sites.
> Mr. Lozhnikov and his team offer mutual beneficial cooperation for risk capital investors and researchers in biometrics.

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[5] Microsoft certified professional
[6] Microsoft certified system administrator
[7] Theophrastus (Russian *Teofrast*) was an ancient Greek scientist who was to first to suppose that human handwriting contains individual characteristics.

After the presentation of his paper at the e-Challenges 2006 in Barcelona, Mr. Lozhnikov managed to create some useful contacts with an important Spanish company active in the field of biometrics, another Spanish company focusing on innovation and biometric systems, and a Hungarian SME from Budapest focusing on information security. Furthermore, an Irish company active with information security in passports was also very interested in cooperation with Mr. Lozhnikov. He discussed many issues with his potential partners and they look now forward to prepare a proposal for the first call of FP7(IST). Mr. Lozhnikov would have appreciated to attend the IST event 2006 in Helsinki, in order to continue to prepare the proposal, to deepen existing contacts with the partners acquired in Barcelona, to establish new contacts and to get updated information on FP7 and the Work Programme of IST for 2007 and 2008. Unfortunately, there is no funding. "But", Mr. Lozhnikov pledges, "We will manage in spite of the difficulties. Now I have only started to realise what are the potential benefits of joining an IST-proposal. It's not the moment to stop these activities".

## IV. The European Union and the Russian Federation: Russia as a strategic partner for research and technology cooperation

"Cooperation in R & D, education and culture takes time to develop. However, scientific cooperation between the EU and Russia is already very good and successful. Russia has, to date, been the most successful third country participant in the Framework Programme"[8].

This quote from a fact sheet published on the Europa-Server in relation with the EU-Russian Summit in Helsinki on 24th November 2006, demonstrates that EU-Russian cooperation in science and technology has been going on for a while.

## Some milestones of EU-Russian cooperation

### INTAS

The European Union and the Russian Federation established their cooperation in RTD in 1992. Russian researchers got the opportunity to participate via the scientific foundation INTAS (founded in 1993) or the International Science and Technology Center (IWTZ, for the integration researchers active before in military research, founded in 1994) in European research programmes.

INTAS – the International Association for the promotion of cooperation with researchers from the Newly Independent States/ NIS countries of the former Soviet Union – has been funded in 1993 as a foundation based in Brussels. The EU, its Member States, associated countries and third countries (Switzerland, Norway, Iceland, Israel) are members. INTAS provides funding for research projects in the field of physics, astronomy, mathematics, telecommunication, information technologies, chemistry, life sciences, environment, energy, space, social sciences and humanities.

INTAS will be formally closed by December 2006.

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[8] From "Fact sheet for the summit" on 24th November 2006 in Helsinki.
http://ec.europa.eu/comm/external_relations/russia/summit_11_06/research.pdf, page 2

**INCO**

In 1994, the INCO-programme of the EU was set up, integrating research activities of the NIS countries into the 4th Framework Programme of Research and Technological Development.

Russian researchers since then had the possibility to take part in joint INCO-proposals with their European colleagues and colleagues from the NIS countries.

Some figures: 35000 Russian scientists were funded by the European Union between 1993 and 1998. The Center for Science Research and Statistics, Moscow, carried out an INCO-COPERNICUS-project to set up an agency for cooperation between the EU and Russia in the field of science and technology.

**EUREKA and COST**

The Russian Federation takes part in EUREKA since 1994, as well as in COST/European cooperation in the field of scientific and technical research.

**The 10 years Partnership and Cooperation Agreement**

In 1997, a 10 year Partnership and Cooperation Agreement between the European Union and the Russian Federation entered into force. Article 62 addresses cooperation in science and technology:

"The Parties shall promote bilateral cooperation in civil scientific research and technological development on the basis of mutual benefit…" The agreement covers the exchange of information, joint RTD activities as well as training and mobility programmes for researchers. The need for appropriate IPR provisions to enhance cooperation was included into the agreement.

As a result of this agreement, an agreement on cooperation in science and technology was signed by the European Union and the Russian Federation in the year 2000. The agreement enabled Russian researchers to take part in all thematic priorities and areas of the EU framework programmes, apart from the nuclear sector. At the same time, European researchers were allowed to take part in similar Russian programmes. The protection of intellectual property rights was included into the agreement.

In 2003, the Science and Technology Cooperation Agreement was renewed.

**A Roadmap towards a "common space of research"**

In May 2005, four Common Space Road Maps, among them a "Common Space of Research and Education", including cultural aspects, were agreed to set out the current work programme for developing EU-Russia relations.

**Outlook to the future**

Times have changed substantially since 1997, and the EU and Russia are about to conclude a new agreement.

The partnership agreement is automatically extended on a yearly basis as long as both partners are happy with this prolongation. However, both the EU and Russia wish to conclude a new agreement in order to mirror their updated, renewed strategic partnership. The four Common Spaces will allow the partners to deepen their relationships substantially.

## EU-Russian cooperation in IST and rules of participation for Russian teams

As a conclusion of what was said, Russian research teams are allowed to participate in the EU-Framework Programme for Research and Technological Development as full partners. Russian research teams have to follow exactly the same rules of participation in IST as their European colleagues. The only difference is that Russian researchers are not entitled to coordinate a project.

During FP6, 294 Russian organisations were involved in IST proposals from Call 1 – Call 5/IST[9]. Out of them, 33 proposals were funded with Russian teams involved.

## Showcases of successful EU-RU cooperation in IST

### Open TC: TC Open Trusted Computing

The IST project "TC Open Trusted Computing" is active in the thematic area of "Trust and Security", one of the areas where Europe is a leader on a global level. "TC Open Trusted Computing" is coordinated by Klaus-Michael Koch, Technikon Forschungs- und Planungsgesellschaft, an Austrian RTD organisation. There are more than 20 partners involved, among them a Russian partner from St. Petersburg.

"TC Open Trusted Computing" was submitted to Call4/IST, closed in March 2005. The project is running since November 2005.

**Project Summary:**

> The Open Trusted Computing (OpenTC) consortium is an R&D project focusing on the development of trusted and secure computing systems based on open source software. The project targets traditional computer platforms as well as embedded systems such as mobile phones.
> The goal of OpenTC is to reduce system-related threats, errors and malfunctions.

The lack of platform security in today's computer systems has given rise to waves of successful attacks, resulting in severe damages to enterprises and potential failure of critical infrastructures.

The OpenTC consortium will define and implement an open Trusted Computing framework. The architecture is based on security mechanisms provided by low level operating system layers with isolation properties and interfaces to Trusted Computing hardware. These layers make it possible to leverage enhanced trust and security properties of the platform for standard operating systems, middleware, and applications.



The suggested architecture is applicable to a wide range of platform types, e.g. servers, GRID technology, mobile phones and industrial automation. It provides basic building blocks for complex, distributed scenarios with inherent, multilateral trust and security capabilities. The
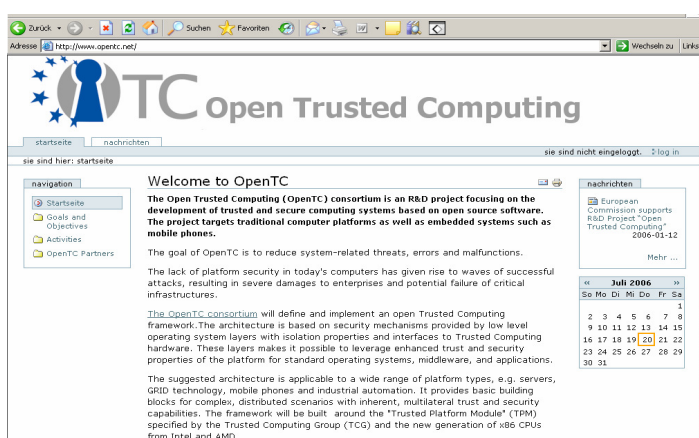
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framework will be built around the "Trusted Platform Module" (TPM) specified by the Trusted Computing Group (TCG) and the new generation of x86 CPUs from Intel and AMD
To enable maximum community benefit, project results will be integrated in and distributed as Open Source software, supporting Linux in particular.
The project aims to have first Open Trusted Computing prototypes available around the time when proprietary Trusted Computing operating systems and solutions are expected to hit the market.[10]

**For more information:**
http://www.opentc.net/


**EU-Russian cooperation in TC Open and Trusted Computing**
The Russian partner, the company INTEK, was found via existing industry cooperation. INTEK supplies software to Infineon Germany, who recommended the involvement of the Russian partner into the project.
It is the first time that INTEK takes part in an IST project. The consortium is composed of partners experienced in IST, and of newcomers. The coordinator, Mr. Koch, explains how they provided special assistance to the newcomers with the rules of IST during proposal development: "We have two persons which concentrate on explaining open administrative tasks to non-experienced partners". The Russian partners were offered a clearly defined work package (software development) which INTEK accepted to carry out."
The contract negotiations were led by a small steering committee of this large project which involves more than 200 persons located in a variety of countries. The Commission requested a budget cut of more than 5 million Euros. The project had to be scaled down. In order to balance this change, a new proposal was submitted to Call 5/IST.
When preparing the consortium agreement with the different partners, the shared responsibility for the success of the project was one of the delicate key issues which raised discussions. But both, the contract negotiations and the signature of the consortium agreement advanced eventually very quickly: Submitted by March 22nd 2005, the project started on the 1st of November 2005.


**Cultural differences?**
Asked if there is any cultural difference, the Austrian coordinator, Michael Koch from Technikon Research, implies a different style of negotiating. He mentions that Russian partners perhaps sometimes need more time to agree decisions and obligations internally and to make reliable agreements. "In Europe, we are more accustomed to quick decisions on an operational level", he says. In general, the experience is that the Russian partner was at the beginning rather contained, but with growing familiarity, people proof to be very open. "Our Russian partner really appreciates the opportunity to take part in this type of project", believes Mr. Koch, "They really enjoy it".
Mr. Koch recommends to European partners to provide Russian partners with exact descriptions of the work, focussed tasks and clearly defined expected RTD solutions. "This is the best way to guarantee excellent results", he believes. For Russian partners, Mr. Koch estimates, it is wise to start the first time with a rather limited task and to extend the own role with subsequent projects.


**Russian research excellence in TC Open and Trusted Computing**
Mr. Koch recognizes the research excellence of Russian researchers in mathematics and software development. "They are very good in both mathematics and security theory", he says, which is very useful in this type of project. Unfortunately, in the field of trust and security a lack of hardware currently prevents Russian researchers from playing a more important role.

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[10] Source: Website of Open TC: http://www.opentc.net/

| Key data about Open TC | |
|---|---|
| Funding: | FP6/IST |
| IST-Call: | Call5/IST, closing on 21st December 2005 |
| Strategic Objective: | 2.4.3 Towards a global dependability and security framework |
| Type of instrument: | Integrated Project (IP) |
| Duration: | 36 months |
| Total budget: | 17, 2 Million Euro (23 Million requested) |
| IST - funding requested: | 17 Million Euro |
| IST-funding received: | 12 Million Euro |
| Start of the project: | 1.11.2005 |
| **Consortium:** | |
| Coordinator: | TECHNIKON Forschungs- und Planungsgesellschaft |
| Contact: | Dr. Klaus-Michael Koch |
| | koch@technikon.at |

**Partners:**

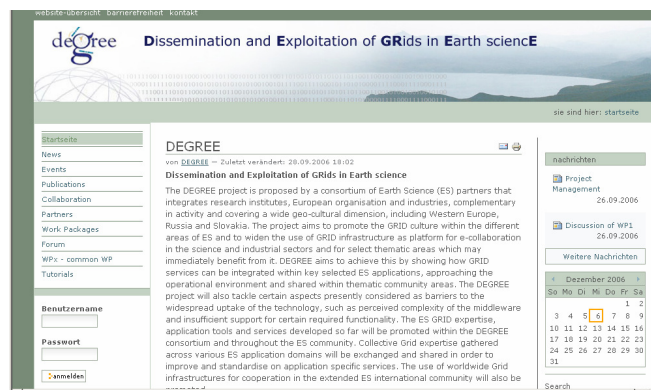| Russian partner: | INTEK |
|---|---|
| Germany | Infineon Technologies AG |
| Austria | Institute for applied information processing and communications, Graz University of Technology |
| Germany | Lehrstuhl für Datenverarbeitung, Universität München |
| United Kingdom | RHUL Royal Holloway University of London |
| Germany | ITAS Forschungszentrum Karlsruhe GmbH |
| Turkey | TUBITAK, National Research Institute for Electronics and Cryptology |
| Italy | Politecnico di Torino |
| Hungary | Budapest University of Technology and Economics |
| France | Commissariat à l'energie atomique - LIST |
| Germany | Horst Görtz Institute for IT security, Ruhr Universität Bochum |
| Germany | Technische Universität Dresden |
| United Kingdom | University of Cambridge, Computer Laboratory |
| Switzerland | IBM research GmbH Switzerland |
| Turkey | Portakal Teknoloij Egitim Danismanlik Yazilim Turizm Taahut |
| Bulgaria | Technical University of Sofia |
| Belgium | KUL Katholieke Universität Leuven |
| Germany | Comneon GmbH& Co OHG |
| Great Britain | HP Hewlett-Packard Bristol Laboratory |
| Germany | Novell/SUSE Linux Products GmbH |
| Spain | Institute for security and open methodologies |
| Germany | AMD Advanced Micro devices |

## DEGREE: Dissemination and Exploitation of GRids for Earth Science

DEGREE is a Specific Support Action coordinated by the Slovak Academy of Sciences, Institute of Informatics, Department of Parallel and Distributed Computing, Dr. Ladislav Hluchy. There are 9 other partners from a variety of European countries, among them a Russian partner, Geophysical Center, Russian Academy of Sciences, Moscow.  DEGREE was submitted to Call 5/IST.

**Project Summary:**

DEGREE is a Specific Support Action (SSA) project which aims to promote GRID throughout a large and diverse earth science (ES) community, in order to increase the awareness and uptake of GRID technology and infrastructure by the EU Earth Science Industry and Research communities. It aims to do this by developing and driving home convincing arguments on the considerable benefits of using GRID technology and infrastructures for large scale Earth Sciences processing, e-collaboration and research. Although several ES applications have been ported on GRID infrastructures since 2000, GRID technology is still undergoing development and the Earth Science community is very reluctant to deploy their applications on it. Therefore, DEGREE also seeks to address the barriers which stand in the way of a wider uptake of the technology, such as the perceived complexity of the middleware, insufficient support for important Earth Sciences functions and vital additional services.

A major challenge for DEGREE is to build a bridge linking the Earth Sciences and GRID communities throughout Europe, and focusing in particular on the EGEE-II Project.

> The EGEE Project (**E**nabling **G**rids for **E**-Scienc**E**) is a large IST-project funded within Research Infrastructures of FP6. There are also other Russian partners involved.
> http://www.eu-egee.org/

An ES applications panel with a range of candidate applications suitable for porting to GRID will make sure key earth sciences requirements for porting and deployment on the GRID middleware are identified, communicated and discussed within the GRID community. At the same time, the DEGREE SSA will ensure the earth sciences community is informed and up to date on GRID developments and potential benefits.

The results will provide feedback to the GRID community and dissemination in the earth sciences community, and will increase awareness of and involvement with GRID developments. In order to ensure that Earth Sciences requirements are taken into account in the next Grid generation, DEGREE will initiate different collaborations; at short, medium and long term via EU horizontal collaborations, specific collaboration with GRID projects and participation to the e-Infrastructure Reflection Group (e-IRG).

For more information:
http://www.eu-degree.eu/

**Russian research excellence in DEGREE**

The coordinator of DEGREE is the Slovak Academy of Sciences, Institute for Informatics, Department of Parallel and Distributed Computing. The consortium is mainly composed of GRID experts and/ or developers/users of applications of GRID in Earth Sciences.

The Geophysical Center, Russian Academy of Sciences, Moscow, was involved as a partner.

Asked why the consortium wished to involve a Russian partner, Mr. Dobrucký says "Because they bring in extensive expertise in both, Earth Sciences and Grid Technology. They are actually experts in the field of data mining on environmental data". Mr. Dobrucký adds that Mr. Zhizhin, the Russian project partner, was responsible for key developments in data mining on environmental data which proved to be very important for ES applications.

Mr. Zhizhin was involved in fact following the recommendation of the Centre National de Recherche Scientifique/CNRS, Paris, France. CNRS, the French partner of the EGEE

project, funded within IST/Research Infrastructures, had previous positive experience in cooperating with the Russian partner. Several other partners of DEGREE also knew the Russian partner from a previous collaboration. Mr. Dobrucký says that the Russian partner was aware of the rules of IST and that they actively participated in proposal development.
The only problem experienced so far was difficulties for Mr. Zhizhin to get a Visa in time for the kick-off meeting which was organised at the end of July 2006 in Paris. He was finally not able to take part.

| Key data about DEGREE | |
|---|---|
| Contract Number | IST-034619 |
| Funding: | FP6/IST |
| IST-Call: | Call FP6-2005-IST-5 |
| Strategic Objective: | IST-2005-2.5.4 – Advanced Grid Technologies, Systems and Services |
| Type of instrument: | Specific Support Action - SSA |
| Duration: | 24 months |
| Total budget: | 1.34 Mio € |
| IST - funding requested: | 1 Mio € |
| Project status: | Current (until June 2008) |

**Consortium:**

| Coordinator: | Slovak Academy of Sciences, Institute of Informatics, Department of Parallel and Distributed Computing Dubravska cesta 9 84507 Bratislava Slovakia |
|---|---|
| Contact: | Dr. Ladislav Hluchy Hluchy.ui@savba.sk |

| Russian partner: | Geophysical Center, Russian Academy of Sciences, |
|---|---|
| France | Centre Nationale de la Recherche Scientifique |
| Netherlands | Koninglijk Nederlands Meteorologisch Instituut |
| Switzerland | Université de Neuchatel |
| Italy | CRS4 Soc.Cons. s.r.l |
| Italy | European Space Agency |
| France | Compagnie Générale de Géophysique |
| Netherlands | Dutch Space B.V |
| Germany | Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V. |

# Examples of EC – funded support projects promoting EU-Russian collaboration in IST, IST/NEST and INTAS

## SITE – Siberia, information technologies and Europe

The main aim of the SITE – project is to promote collaboration between Europe and Siberia in the IST-priority of the 6th Framework Programme for research and technological development.
SITE deploys a number of means in order to achieve a sustainable impact on the activities of Siberian researchers in IST:

### A network of contact points for IST in SFD

A multilevel network of contact points in SFD for the IST-priority has been established. Eight regional centers located in the main cities of SFD are trained by 2 workshops carried out by the Association for Engineering Education of Russia/AEER, Tomsk, Russia in cooperation with Singleimage, Cambridge, UK.
In addition, the Austrian Research Promotion Agency/FFG trained 56 managers of European offices acting as further local contact points on the IST-priority. The European offices are set up within Siberian research organisations. The training takes place by means of eLearning.
AEER co-ordinates the activities of the SITE network in SFD.

### An online database with 300 profiles of Siberian researchers

A database containing 300 profiles of researchers from SFD strong in IT is established over the course of the project. A partnering mechanism was developed and implemented, enabling European researchers to find appropriate partners for IST- proposals and to build lasting working relationships.

### Real and virtual brokerage events as part of European IST-conferences

SITE ensures the participation of highly competent Siberian researchers at European IST-conferences. IST-conferences are promoted in SFD by AEER and the multilevel network and researchers are invited to apply to take part by submitting papers. Depending on the number of papers accepted, up to 8 researchers may receive funding for their participation in the respective conference. Furthermore, up to 8 researchers are instructed in how best to profit from the virtual brokerage event. Similar to those wishing to attend a conference, they must undergo a selection procedure for participation.
At the IST-conferences, the SITE exhibition booth functions as a communication platform for real and virtual brokerage events. There European researchers are encouraged to talk to Russian researchers on the spot or by virtual means in order to exchange project ideas and develop joint IST-projects.



### Support with proposal writing

SITE provides support to Siberian researchers presenting IST- proposals. This includes partner search, consortium building and proposal writing itself. In order to maximise the quality of the Russian contribution, workshops are held for Siberian researchers. One

workshop took place in the Sibirsky Region and two workshops are carried out via distance training. The SITE-project ensured during FP6 the submission of 11 IST-proposals with Siberian participation in the course of the project.

Several Siberian researchers who took part in one of these proposals are included into the present publication.

## A helpdesk for daily business with Russia

SITE offers a helpdesk service assisting researchers from Europe and Russia to overcome cultural differences and any other problem surrounding collaboration.

## The consortium behind SITE

SITE is co-ordinated by Singleimage, UK.  The Austrian Research Promotion Agency and the Association of Engineering Education of Russia (AEER), represented by the Tomsk Polytechnic University are partners.

Funded as a Specific Support Action within FP6/ IST, SITE started on 1$^{st}$ July 2004 and lasts until December 31$^{st}$ 2006.

### Singleimage, Cambridge, UK
http://www.singleimage.co.uk

Singleimage advises companies, universities, research organisations and administrative bodies and assists them with participating in the European RTD programmes. Its main services are workshops for proposal writers, administrators and managers; partner search, advise on proposals, partners, contracts and project management.

The workshops are run on a commercial basis in the UK. They attract participants from organisations in the UK and abroad such as the BBC, the British Museum, British Telecom, Philips, Rolls Royce, Schlumberger, Unilever, and many universities.

The same workshops are run in countries such as the Czech Republic, Poland, Latvia, and Russia, with support from the European Commission. Over 30 workshops were held by Singleimage in 2003.

In the SITE-project, Singleimage is holding two info days in SFD about FP6 and FP7 for the regional centres and researchers. It is also organising one workshop in SFD and two distance workshops for Siberian proposal writers. A partnering mechanism for online partner search in the Sibirsky Region has been developed by Singleimage.  In addition to this a web knowledge base on participation in the EC programmes offering remote advice to European and Siberian researchers will be provided. In cooperation with AEER, Singleimage reviews proposals where researchers from SFD are involved.

For more information, please contact: Sue Kerr sue.kerr@singleimage.co.uk

### FFG/ Austrian Research Promotion Agency, Vienna, Austria
### (Österreichische Forschungsförderungsgesellschaft)
http://www.ffg.at

The Austrian Research Promotion Agency (FFG) offers advice, support and promotion for research projects on a national as well as European and international level.

The division **European and international programmes** of FFG is the Austrian National Contact Point for the EU-Framework Programme for Research and Technological Development, hosting all NCPs in one organisation.

Founded as the "Bureau for International Research and Technology Cooperation - BIT" in 1993, its focus has always been providing information and advice services for Austrian researchers and industrialists regarding the participation in European and international RTD

projects. FFG also offers information and advisory services with respect to INTAS and EUREKA.

In addition, as the co-ordinator of the Innovation Relay Center Austria, the FFG is actively involved in the European-wide transfer of new technologies and other initiatives supporting innovation.

FFG encourages and supports companies, universities, independent research institutes and other organisations interested in transnational research cooperation. The FFG's years of experience are not restricted to training and consulting, but also include the promotion and marketing of programmes, collaboration and the dissemination of success stories and other relevant information. FFG's activities include the organisation of conferences, information seminars, training workshops, road shows and brokerage events and it also edits and publishes a bimonthly magazine, various guidelines, instructional leaflets and illustrative material.

FFG has carried out a substantial number of projects regarding the training of multipliers, the support of SME's and their participation in different framework programmes, among them as co-ordinator of Train-Net, Partners for Life, Fellows for Industry, and as a partner in Mobitech, Medtech-T3M, IPR – guide, Bestas 2, and many others.

A number of projects addressed cooperation with Russia, for example ENRIN, Tristan-East, Admire-P and RUSERA.

Within SITE, FFG is responsible for the promotion of SITE in Europe, the e-training of 56 contact points in SFD (managers of European offices) in the IST-priority of FP6 and the organisation of real and virtual brokerage events as part of European IST-conferences.

For more information, please contact:     Petra Reiter    Petra.Reiter@ffg.at


## AEER – Association for Engineering Education of Russia
http://aeer.ru/index.phtml

AEER was established in 1992. Currently, AEER is one of the leading Russian organisations determining the policy of engineering education in Russia. AEER supports the cooperation of Russian higher education engineering institutions and research units with Russian and foreign commercial enterprises and public bodies.

AEER is participating in the FP6-project RUSERA – "Supporting the Russian participation in EU-RTD programmes" (http://www.rusera.tpu.ru).

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The aim of RUSERA was to establish contact points all over Russia for Russian engineering universities, in order to increase university participation in FP6.  In addition to this, it aimed to contribute to competence-building thus enabling researchers to fully understand the structure of FP6 and the application procedures.

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Today AEER relies on a network of IST-experienced regional centres located in SFD, which act as information nodes for the SITE-project.  The centers are located in the regional administration of the following regions of SFD: Tomsk, Omsk, Novosibirsk, Barnaul, Krasnoyarsk, Irkutsk, and Kemerovo.

The President of AEER is the Rector of Tomsk Polytechnic University (TPU) which also hosts one of the AEER regional centres. The SITE project will operate through the TPU regional centre of AEER, and this centre will coordinate the activities of the other centres.

Tomsk Polytechnic University was established in 1896 and currently comprises 14,500 students and 13 faculties. The university has more than 10 years experience in promoting international collaboration. TPU participated in the ENRIN project "A proposal to enhance cooperation of European and Russian industry by regional information nodes/ RIN".

Funded from the budget of the ESPRIT programme (FP4), ENRIN aimed to increase cooperation between institutions and enterprises from the European Union and from several regions of Russia in the IST-Programme under the Commission's Fifth Framework Programme.
Today TPU relies on a substantial number of contacts within the regional research community, business and industrial spheres and with the regional administration. These excellent contacts ensure a stronger impact of TPU's work in SITE.

AEER is responsible for a substantial number of SITE's activities in SFD:
AEER establishes, co-ordinates, and maintains the multilevel network in SFD. It contributes to the training of the network contact points, including e-training. In cooperation with the multilevel SITE-network in SFD, AEER collects and classifies the profiles of researchers from SFD, enters them into the SITE-database, promotes the activates of SITE in the Sibirsky Region, and organises the participation of Siberian researchers in real and virtual brokerage-events.

For more information, please contact:        Olga Mazurina: mazurina@cc.tpu.edu.ru

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**The Russian website of SITE:**
http://www.site.tpu.ru/

**The English website of SITE:**
http://www.singleimage.co.uk/russia-in-ist

**Contact for more information on SITE:**
Petra.Reiter@ffg.at

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**Showcase of a successful transfer of knowledge to the Sibirsky Region. The Krasnoyarsk Regional Center of SITE**

The Regional Center of Krasnoyarsk is one of 8 regional centers which were set up and trained by the SITE consortium in the Sibirsky Region.



Natalia Edwards is the manager of the Regional Center of the SITE project at the Krasnoyarsk State Technical University (KSTU).
The Krasnoyarsk region is located in Eastern-Siberia and at the geographical center of Russia. The size of the Krasnoyarsk region is more than 2300 km², equal to size of the European part of Russia, and 7 times the size of France. The region has a significant scientific and engineering capacity: 1.2% of the total Russian R&D scope and approximately 1% of the specialists are located in the region.
The Regional Center for FP6/IST was established by the Association of Engineering Education of Russia (AEER) at the Krasnoyarsk State Technical University (KSTU), as the university is the largest university in the region involved in RTD.

Since the SITE Project started in the region in December 2004, the following activities were carried out respectively coordinated by Natalia Edwards:
• **A regional network of IST multipliers** was established within research organizations in the Krasnoyarsk region: 11 European Offices, within 7 universities, within one institute of the Russian Academy of Sciences, within two SMEs, and within one autonomous public organisation, were set up by following the selection requirements of SITE, such as a good internet connection and good English language skills of the staff employed

- **Training of IST multipliers**: The managers of the European Offices were trained through several workshops: two real trainings and one virtual training carried out by the European partners of SITE (Singleimage, Austrian Research Promotion Agency/European and International Programmes), and two regional workshops conducted by Natalia Edwards, the Regional Manager: certificates endorsing the 11 European offices as multipliers for IST were obtained from the SITE consortium after tests completing the training.
- **Researchers from Krasnoyarsk searchable online:** 51 carefully selected, highly qualified RTD teams active in the area of IST were entered into the online partnering database of SITE, of which 45 university scholars, 4 SBRAS[11] researchers and 2 SME specialists;
Regarding the database of RTD teams entered into the online partnering database, Ms. Edwards notes that the ratio between younger and experienced researchers is 40:60 percent, while the ratio between men and women involved is 55:45 percent. As a matter of fact, the research teams were very carefully selected and checked by the Regional Center before being added to the online database.
- **Participation in real and virtual brokerage events:**
For participation in real brokerages organized at European IST conferences, 25 papers were written by Russian researchers located in the Krasnoyarsk region, and submitted to European IST conferences such as the e-Challenges, the Axmedis or the Med-e-Tel conference. Out of them, 12 were finally accepted by the respective conference committee. Ms. Edwards underlines that this demonstrates an efficiency of 48 per cent which were accepted, which is a really satisfying percentage. Researchers from the Krasnoyarsk region carried out 8 real brokerages during 5 European IST conferences.
- **Partnering and proposal writing**
Furthermore, 49 direct partner-search requests were issued on project ideas, 6 IST - project proposals developed and actually 4 submitted to IST under FP6 with researchers from Krasnoyarsk involved. Ms. Edwards-Klimchuk estimates that 3 additional new proposals will be submitted during the first calls of IST in FP7.
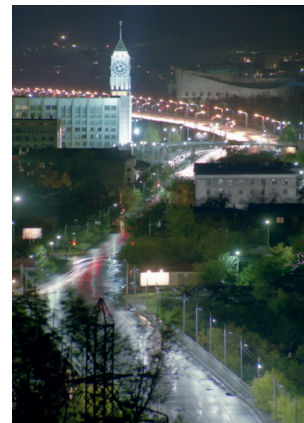
Asked about the major benefits of the SITE project for the region, Ms. Edwards mentions the following impact:

<u>Awareness:</u>
As a result of the activities of SITE in the Krasnoyarsk region, there is considerably more awareness among researchers in the region for opportunities to cooperate with Europe.
The motivation to learn languages was considerably enhanced due to the international contacts which the RTD teams established during brokerage events, but also by online means.

<u>Understanding:</u>
There is a better understanding now of the European approach towards RTD. Issues such as consortium building, international targeted communication and interaction, funding requirements, proposal outlay regulations and partner search tools for IST are much more familiar to researchers and research stakeholders in Krasnoyarsk. Furthermore, the researchers gained a better understanding regarding gender-related issues and concerns for ecological safety.

<u>Networking:</u>
Networking on a regional level was supported. A multi-level regional framework for cooperation between Siberia and Europe in RTD in IST areas was set up and will at least partly be maintained after the end of the SITE project. For Krasnoyarsk, there are 11 European Offices supporting contacts, 51 RTD teams registered in the partnering

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[11] Siberian Branch of the Russian Academy of Sciences

database and as a whole 207 contact persons available for interested European researchers.

**Partnering***:*

EU-Siberian partnering was an important objective of the SITE project. As a matter of fact, 19 Siberian researchers located in the Krasnoyarsk region managed to set up contacts with 68 partners from Europe. 30 lasting relationships were created, 14 IST project ideas were developed and 6 IST project consortia built. 4 Proposals were actually submitted to IST, and 3 are under development for IST in FP7. Ms. Edwards is convinced that the ground has been prepared for further collaboration and partnering in IST in FP7.

**Dissemination:**

The papers written, respectively presented by Siberian researchers from Krasnoyarsk have contributed to a better awareness in Europe and Russia for collaboration with the Krasnoyarsk region. Workshops and information days on FP6, with overall 213 participants from Krasnoyarsk ensured a good dissemination of information on IST on a regional level.

Ms. Edwards firmly believes that cooperation with Europe has only started in her region: Ms. Edwards, who lived 2 years in the US but decided recently to return together with her daughters to her native Russia, underlines her optimistic view: "We are 4400 km to the east of Moscow, and 4000 km to the west of Vladivostok. We withstand an extreme climate and like to live here. We will succeed in taking advantage of the new opportunities for cooperation with Europe offered also in FP7." Ms. Edwards speaks fluent English.

**Author and contact for more information**:
Regional Manager: Natalie Edwards
Contacts: omc225@kgtu.runnet.ru        Phone/Fax: 7 3912 912 118

About Regional Center for R&D Collaboration between Researchers from Europe and
   Siberia: http://www.eng.krgtu.ru/international/rc/

## The NIS-NEST Project: The Eastern European Countries (Newly Independent States) and the New and Emerging Science and Technology areas of FP7

The NIS-NEST project is a Specific Support Action funded by the EU under the FP6/NEST Programme. Its main aim is to open up the opportunities for collaboration within the framework of FP7, especially in frontier and high risk research fields between the EU and the Eastern European countries and more specifically: Russian Federation, Ukraine, Belarus, and the Republic of Moldova.

Seven organisations from six different countries form the project's consortium. The countries are: Greece, France, the Russian Federation, Ukraine, Belarus, and the Republic of Moldova.

The Russian Federation, Ukraine, Belarus, and the Republic of Moldova have a long record of scientific excellence, yet their visions on future research are largely unknown to the rest of Europe. In addition the EU and the above mentioned countries know little about each other's research and technology development. So, the time is right to bring the two sides together.

The project has three major objectives:

- To open up the novel exploratory and transnational collaborative research to the participating countries.

- To support EU researchers and the scientific community to find their "counterparts" in the participating Eastern European countries in order to formulate consortia and jointly participate in projects regarding the visionary research areas under FP7.
- To raise awareness among potential partners from the Eastern European countries regarding the opportunities and chances for their participation under the emerging and novel exploratory areas of FP7.

**1**. Within this framework and in order to achieve the objectives of the project the partners are undertaking a mapping activity which will enable them to identify the researchers and organisations in the Russian Federation, Ukraine, Belarus, and Moldova, who are actively involved in new and emerging science and technologies areas.

The mapping exercise will result in an on-line database, which will be a pool of potential partners from the above mentioned countries–for the Seventh Framework Programme (FP7) and for other EU Programmes. This tool will help the EU Scientific community, researchers (of Academic community and research organisations) and the SMEs to find potential partners from Eastern European Countries, with special emphasis on those active in FP7 visionary research fields.

The quality of participation and the integration of the partner-countries' expertise, however, is the key aim, rather than simply to increase the level of applications. Bringing research organisations of the above countries into FP7 will allow different approaches and schools of thought to stimulate new multidisciplinary achievements in addition, In addition, attracting researchers from these countries to become involved in EU collaborations could also help to reduce the "brain drain" from Europe to other parts of the world.

**2**. Moreover within the framework of the project will be analysed the information to develop an understanding of research related activities in the different countries, including their cultural and financial support conditions, research performance and career structure, participation in framework programmes and mobility of Researchers (Marie-Curie Actions). This analysis will also contribute information towards helping the EU to prepare future initiatives relating to science and technology in Eastern European countries.

The project's awareness activities include the organisation of Information days and workshops, the realisation of a web site and the publication of a quarterly e-newsletter.
Information days will be held in the Russian Federation, Ukraine, Belarus, and the Republic of Moldova near the date of the first call for proposals for novel exploratory research under FP7, to inform researchers and policy-makers from the above countries about the opportunities and procedures. These will be followed by workshops, tailored to meet the needs of the potential applicants and to provide advice and support to consortia from both EU and the participating countries. Throughout the project, awareness on New and Emerging Science and Technology areas of the FP7 initiatives will be maintained among organisations via a quarterly e-newsletter, invitations to participate in Information days and workshops and electronic contact through the database and web site.

The partners of the project in Russia and Ukraine will collaborate with the International Science and Technology Centre (Moscow, Russia Federation) and the Ukraine Science and Technology Centre (Kiev, Ukraine), both of which support numerous staff in emerging research areas. The partners of the project in Belarus and Republic of Moldova will collaborate with the National Academy of Sciences of Belarus and Moldova as well.
Moreover the partners established links and collaboration with similar projects – in particular NEST-IDEA, SITE, Russera, etc. – which is identifying ideas of great potential for future research.

**Consortium - Partners**
- National Documentation Centre/NHRF (EKT/NHRF), Coordinator, Hellas
- Institut National de la Recherche Agronomique (INRA), France
- M.V. Lomonosov Moscow State University (MSU), Russian Federation

- Center for Advanced Studies/St. Petersburg State Polytechnic University (CAS), Russian Federation
- Institute of Semiconductor Physics, National Academy of Sciences of Ukraine (ISP/NASU), Ukraine
- Centre of Information Technology (CIT), Belarus
- Academy of Science of Moldova/Centre of Optoelectronics of the Institute of Applied Physics (ASM), Republic of Moldova

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**Author and contact for more information:**

Maria Koutrokoi, NCP for IST in Hellas
eMail: mkoutr@ekt.gr

**Web site of the NIS-NEST project:**
http://www.nisnest.gr

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## The RUSMECO Project

**Introduction:** Innovative small and medium enterprises (iSMEs) play an increasingly important role in the Russian economy, with significant social and economic functions. However, the Russian SME sector has not become the main driving force of innovation processes in Russia yet. Despite their high innovation potential and remarkable flexibility, Russian SMEs do not possess the capabilities to defend their position on the global market. A way for improving these capabilities could be to give them access to practical knowledge and expertise.

**Project background:** The aim of the EU-funded project RUSMECO (INCO project; May 2005 to May 2007) is to enhance the collaboration and business development of Russian iSMEs and thereby to raise their competitiveness. The project does so by establishing a Community of Practice (CoP) between SME clusters in Moscow, St. Petersburg and Ekaterinburg. The intention of this CoP is to provide a basis for Russian managers for sharing knowledge and experience on subjects of common interest and thereby to increase their individual management capabilities and their SME's performance.

The project is done by a consortium of 12 Russian and four European partners from research and industry. Five SME networks from the three regions the project concentrates on (Moscow, St. Petersburg, and Ekaterinburg) are formally committed to the project as supportive partners.



Looking back on our research approach, we have done an analysis of the needs, problems and good practices of SMEs, based on a literature review as well as interviews and a survey of Russian SMEs. Our results show that Russian iSMEs struggle with many aspects of

successful corporate management, such as financial management, foreign language skills and marketing skills, compared to European SMEs.

**BUSINESS DEVELOPMENT: SKILLS/COMPETENCIES**



Foreign Language Skills

Product Quality

Financial Management Skills

Awareness of Importance of Training

Management Skills (including knowledge on business management methods/ tools)

Marketing Skills

Russian SMEs
European SMEs

1= very low/ bad
5 = very high/ excellent

Other results showed that the concept of the communities, and especially communities of practice, is something entirely new to Russian SMEs, so we had to think about how to explain the idea to them. Collaboration and knowledge sharing, typical practices in European enterprises, are less common in Russian organizations, while personal relationships are crucial for Russian businessmen to build up trust and to enable collaboration. We therefore had to find a good way of establishing personal relationships in our project and creating an atmosphere of trust, where people feel secure enough to exchange ideas.

**The current status – our community concept:** The community interacts via a web-based community portal including chats, discussions forums and member profiles (persons and companies). An extensive library on innovation-related themes contains various case studies, articles, expert advice, etc. Self-assessment tools help companies to further specify their main problems. Besides, the RUSMECO community offers its members free online and offline trainings on subjects related to business development and collaboration. Face-to-face events with presentations, workshops and networking dinners enable SME managers to meet fellow businessmen and experts.

Another focus of RUSMECO activities is on fostering the collaboration and exchange of the community companies with further organisations outside the consortium. The platform thus contains a "brokerage area", where external companies can identify suitable SMEs from the RUSMECO community for collaboration and knowledge sharing.
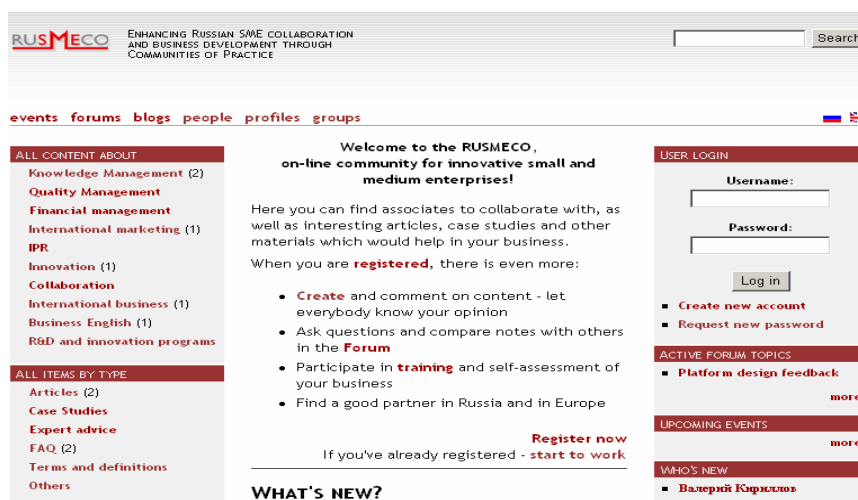


**Outlook on the future – next steps:**

The next months will focus on the following topics:

| Topic | On-line event | F2f event | Training |
|---|---|---|---|
| Intellectual Property Rights | | + | - |
| Collaboration Management | + | | Online |
| Quality Management | | + | Blended |
| Innovation supporting programs and projects | + | | Online |
| Marketing of Innovation | + | | Blended |
| International Business | | + | Blended |
| Knowledge Management | + | | Online |

The community kick-off events were successfully conducted in Moscow on November 16 and in St. Petersburg on November 24. The kickoff event in Ekaterinburg will take place on December 7. In the next months, the consortium partners will continue supporting the community. The platform will be tested and improved and further refinement will be introduced in the community concept. Additional results of the project will be a roadmap and policy recommendations, as well as a book.

**Author and contact for more information**:

Liza Wohlfart, Fraunhofer IAO / IAT University of Stuttgart
Phone: +49 711 971 5310
Mail:    Liza.Wohlfart@iao.fraunhofer.de
Project website:    www.rusmeco.net
Community portal:    www.rusmeco.ru