IT-park of
Petrozavodsk State University

Cooperation of IT-park of PetrSU with Nokia Research Center and companies of Russia and Finland

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IT-park of Petrozavodsk State University

Information about PetrSU

Established	- 1940
Faculties	- 16
Departments (in Petrozavodsk),	- 82
Branches	- 4
Degree programs (Bachelor, Specialist, Master)	- 48
Postgraduate programs	- 54
Students	- 19 000
Postgraduate students	- 320
Graduates (2008)	- 3388
Teaching and research staff	- 1038
Other staff	- 1745

Faculties of PetrSU

1. Agriculture
2. Biology and ecology
3. Economics
4. Philology
5. Finnish philology
6. Forest engineering
7. History
8. Industrial and civil engineering
9. Law
10. Mathematics
11. Medicine
12. Physics and engineering
13. Political and Social Sciences
14. Training and Retraining
15. Retraining in Medicine
16. Preparatory

Legal entities of PetrSU

- Karelian regional institute of management, economics and law of PetrSU at the Government of Karelia
- Northern fisheries research institute
- Karelian forestry research institute
- Research institute of architecture
- Regional center of new information technologies
- Northern-European open university of PetrSU
- PetrSU publishing house
- Scientific library
- University college

Cultural and sports life at PetrSU

- Academic chorus
- Folk ensemble “Toive”
- Tourist club “Sampo”
- Comedy club
- Theater studio
- Sport camp “Shotozero”
- International training center “Urozero”
- Gymnasium
- About 15 other

Among PetrSU students and staff are champions and prize-winners of the world, Europe, Russia and Karelia

Achievements of PetrSU

Classical universities

- Number of classical universities in Russia -- 95
- Usually – 1 classical university in the region

PetrSU rating by Ministry of Education of Russia:

- 31st place in Russia
- 2nd place in North-Western Federal district (9 regions) after St.-Petersburg State University

PetrSU is among top 20 classical universities of Russia in:

- IT
- International cooperation

Degree programs in IT at PetrSU

1. MF Mathematics
2. MF Applied math and computer science
3. MF Information systems and technologies
4. MF Business IT
5. FTF Automated measurement and control systems
6. FTF Computer science and equipment
7. FTF Information and measurement equipment and technologies
8. FTF Physical electronics
9. CCF Computer-aided design systems

Number of students (“day-time”): 1300
Graduates (“day-time”): 200- 250 a year

Programmers Club of PetrSU

Main goal: foster the students and schoolchildren activity in the fields of mathematical modeling, optimization, theory of algorithms, data structures, and programming skills development.

Number of participants: >100 students and schoolchildren

Activities:

- Lectures and training - 3-4 times a week
- Organization of City and Republic programming contests
- Organization of Winter and Summer schools for the best Russian University student teams in Petrozavodsk
- Organization of the Head of Republic of Karelia Prize Contest
- Participation in the quarterfinal, semifinal and final stages of the ACM World Programming Contest

Programmers Club of PetrSU achievements

ACM World Contest for Collegiate Programming (2008: 6700 teams at 1821 universities in 83 countries world-wide)

Semifinals (CIS and Baltics):

- 5th place (season 2001-2002)
- 8th place (season 2003-2004)
- 13th place (season 2004-2005)
- 10th place (season 2005-2006)
- 5th place (season 2006-2007)
- 6th place (season 2007-2008)

Finals:

- 18th place (Honolulu, season 2001-2002)
- 27th place (Prague, season 2003-2004)
- 19th place (San-Antonio, season 2005-2006)
- 13th place, BRONZE medal (Tokyo, season 2006-2007)
- 10th place, BRONZE medal (Canada, season 2007-2008)

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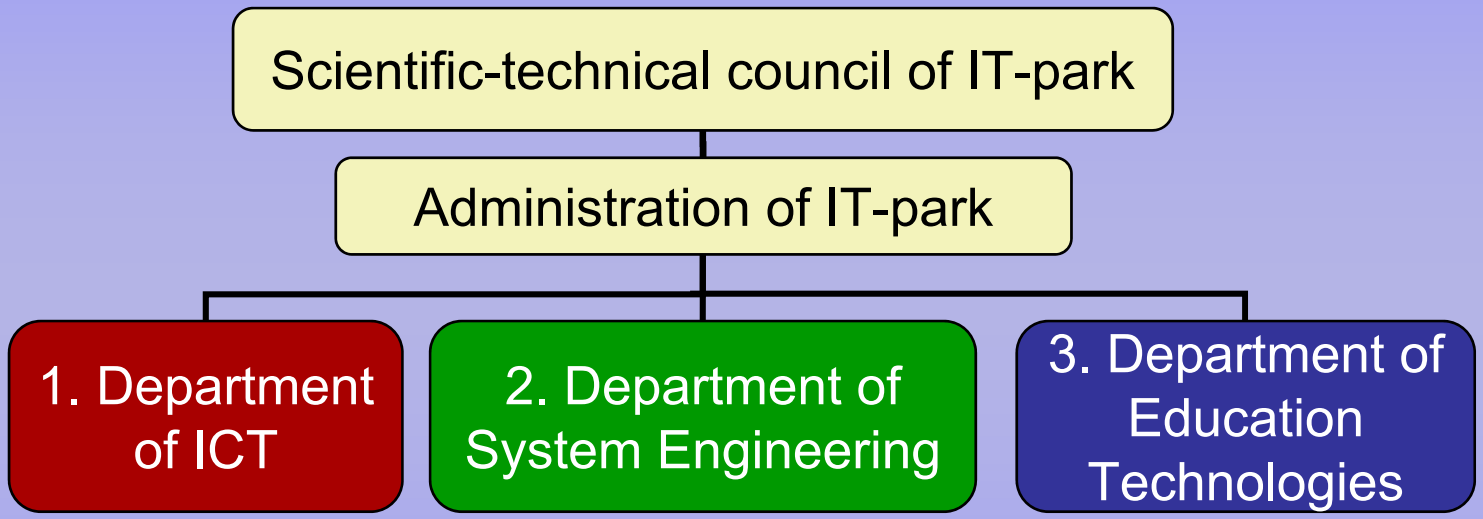

Staff: 330 people (100 full-time, 230 part-time), 23 units

Mission: to promote hi-tech products in Nordic countries and the Russian Federation by building on the existing scientific-educational and technological potential of its personnel; by formulating **uniform** policy throughout, and by coordinating the activity among its entities

IT-park of Petrozavodsk State University

1. Department of ICT

- **PetrSU-Metso Automation Systems Center**
- **Mobile and Wireless Systems Center**
- Budget Monitoring Center
- GIS-Center
- Mobile and Wireless Technologies and Applications Center
- Telecommunications Center
- Information Systems for Educational Institutions Center
- CAD-Center
- Information Technology Center for Botanical Gardens of Russia
- Laboratories

2. Department of System Engineering

- Center of Electronic Components and Materials
- Innovative Technologies Center “Polar star“
- **Research and Educational Center "Plasma"**
- Center of Special and Unique Equipment
- Laboratories

3. Department of Education Technologies

- Distance Technology Center
- **Process Control Systems Training Center**
- Continuing Education and Retraining Center
- e-Karelia Project. Educational Center for Businessmen
- **Programmers Club**

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IT-Park, 2012

Personnel: 500-600 people

Activities:

- PC software development for industrial enterprises and other organizations, including decision-making support systems
- Embedded software development, for example, for mobile devices and modules in distributed sensors networks
- Supervisory Control and Data Acquisition (SCADA) systems design (both electronic and software)
- Outsourcing of software development
- Web-applications and Internet-resources
- Medical information systems
- Geoinformation systems
- Training (incl. distance learning) and other

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IT-park values

1. Integration of our work:

   Integration of RTD, project execution, training, research, conferences and seminars

2. Integration with Customer:

   Satisfy the Customer requirements to the maximum extent

3. Integration of personnel:

- Joint work of lecturers, personnel, students aimed at professional and carrier growth
- Development of corporate spirit

4. Integration with partners:

   Wide partnership relations with Russian and foreign universities, scientific and industrial organizations and enterprises

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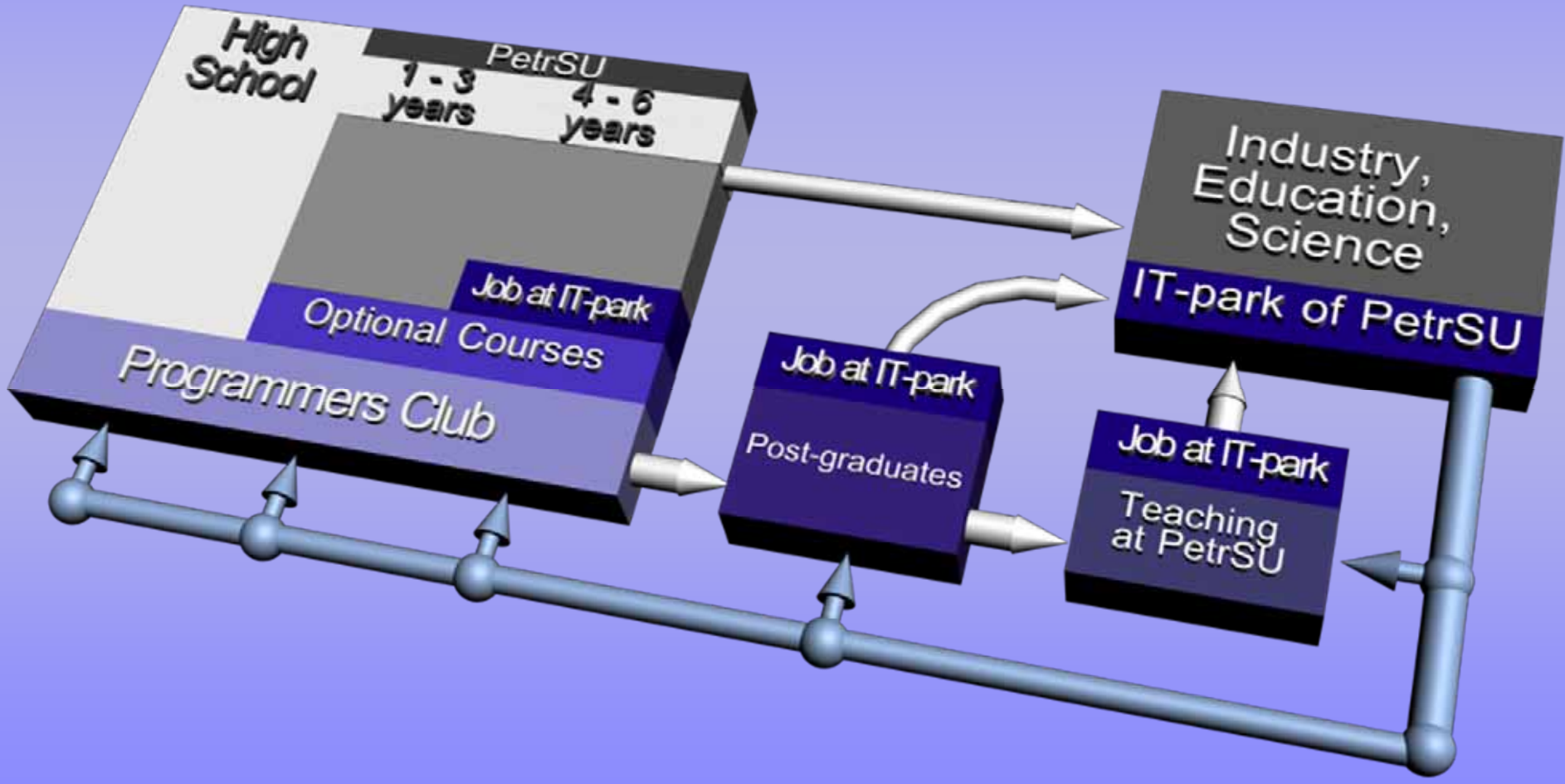
Innovative IT-conveyor at PetrSU



Financial flows in PetrSU

- 85% -> Unit (salary, all taxes, equipment, furniture, office supplies, trips, etc.)
- 15% -> PetrSU (rent, security, local phone, Internet, etc.)

1. Structural unit, not a legal body (e.g., PMASC):

- Contract -- between Customer and PetrSU, work – by Unit
- Accounting and banking services – by PetrSU

2. Structural unit, legal body:

- Own bank account, own stamp, own signature, quarterly reporting to PetrSU (=> more freedom)
- Contract -- between Customer and Unit, work – by Unit

Each unit acts like a business company – income and working conditions depend only on unit's sales. There is no financial support from PetrSU, but also all profit remains in the unit. PetrSU administration is actively involved in customer contacts because of academic, research and financial interests.

Cooperation of PetrSU and Metso Automation Inc. (since 1993)

- International Conferences "New information technologies in the pulp-and-paper and energy industries" (1994, 1996, 1998, 2000, 2002, 2004, 2006).
- Some facts about VIII Conference, 2008: 120 participants, 12 software and equipment development companies, 13 Pulp-and-paper mills producing 2/3 of Russia's pulp, paper and board
- Collaborating with Metso Automation Inc. in configuring the metsoDNA information and process control systems in Russia and former USSR countries – since 2001
- PetrSU-Metso Automation Systems Center (PMASC) – since 2002

http://pmasc.karelia.ru/

- Strategic partnership agreement between Metso Automation Inc. and PetrSU signed in 2005

Structure of PMASC

1. SysRTD CAXA, IA, PaRTD (Metso Automation)
2. Device Type Management (Metso Automation)
3. Business Process Automation (Metso Automation)
4. Mineral Automation Solutions (Metso Minerals)
5. Information Systems (PetrSU)
6. Process Control Systems (PetrSU)
7. Mobile and Wireless Systems (PetrSU, Nokia, VTT)
8. Administration

Total: 70 people

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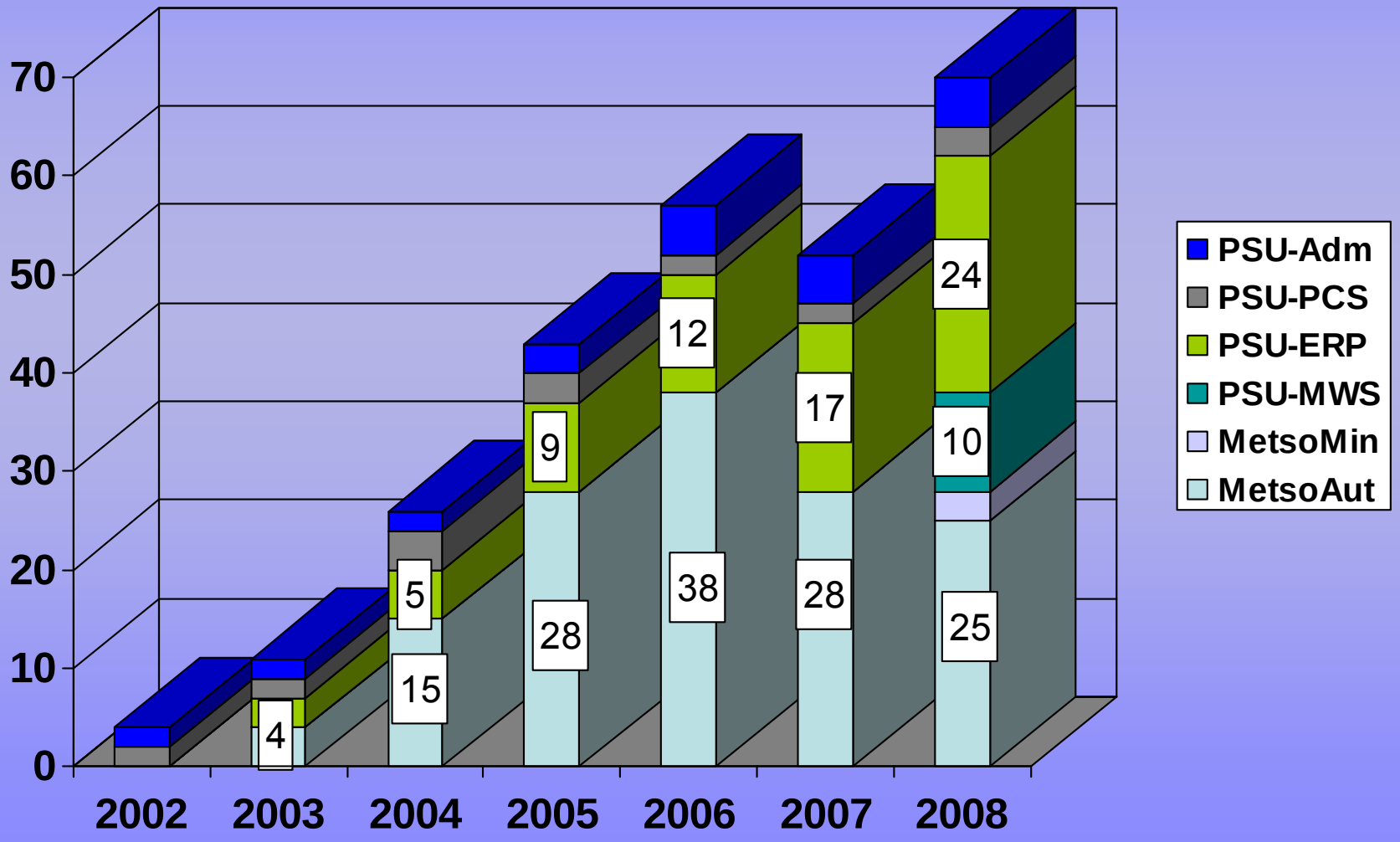
PMASC staff dynamics



PetrSU-Metso Automation Systems Center

Most significant projects for Metso Automation Inc.:

- Custom distributed software systems based on Microsoft .NET technology,
- Generalized reporting system,
- Tools for automating the development of distributed software systems
- Development and enhancement of tools for generation of function blocks and control loops in the metsoDNA process control system
- ASP.NET Web applications (working with MS SQL Server 2000/2005, popular reporting tools and all major browsers)
- Collaborating with Metso Automation, Inc. in configuring the metsoDNA information and process control systems (**32 projects** since 2001),
- Providing training to specialists of Metso Automation Inc.'s customers and partners (**200 specialists** since 1997)

Information Systems development

Projects for industrial enterprises of Russia:

- Optimal planning of cardboard plant operation (including trim optimization);
- Software packages for multi-product plant management (ERP-MRP II class)
- Optimization of loading of transportation facilities (trucks, trains and ships);
- Optimal planning of plywood plant operation;
- Optimal planning of paper machines operation (including trim optimization);
- Optimal enterprise resource and sales planning;
- Optimal accounting and analysis of non-storable resources;
- Consulting research in the field of information technologies and re-engineering of business-processes of enterprises.
- Upon customer's demand the software systems are integrated with existing third party corporate information systems.

Major customers

- OJS “Arkhangelsk pulp-and-paper mill” (1982-2008);
- OJS “Arkhbum” (branch in Podolsk) (2005-2006г)
- OJS “Bratsk pulp-and-board mill” (2007-2008);
- OJS “Segezha pulp-and-paper mill” (1985-2008);
- OJS "Karelenergo" (1997-1998);
- OJS “Kondopoga pulp-and-paper mill” (1990-2009);
- OJS “Kotlas pulp-and-paper mill” (2003-2004);
- OJS “Priboy” (St.-Petersburg) (2004-2008);
- OJS “Mondi Business Paper Syktyvkar” (2008-2009);
- OJS “International Paper Svetogorsk” (2005-2006);
- OJS “Kiev pulp-and-paper mill” (2006-2007)
- “Yaroslavl cardboard” Ltd. (2006)

TOTAL: over 85 projects

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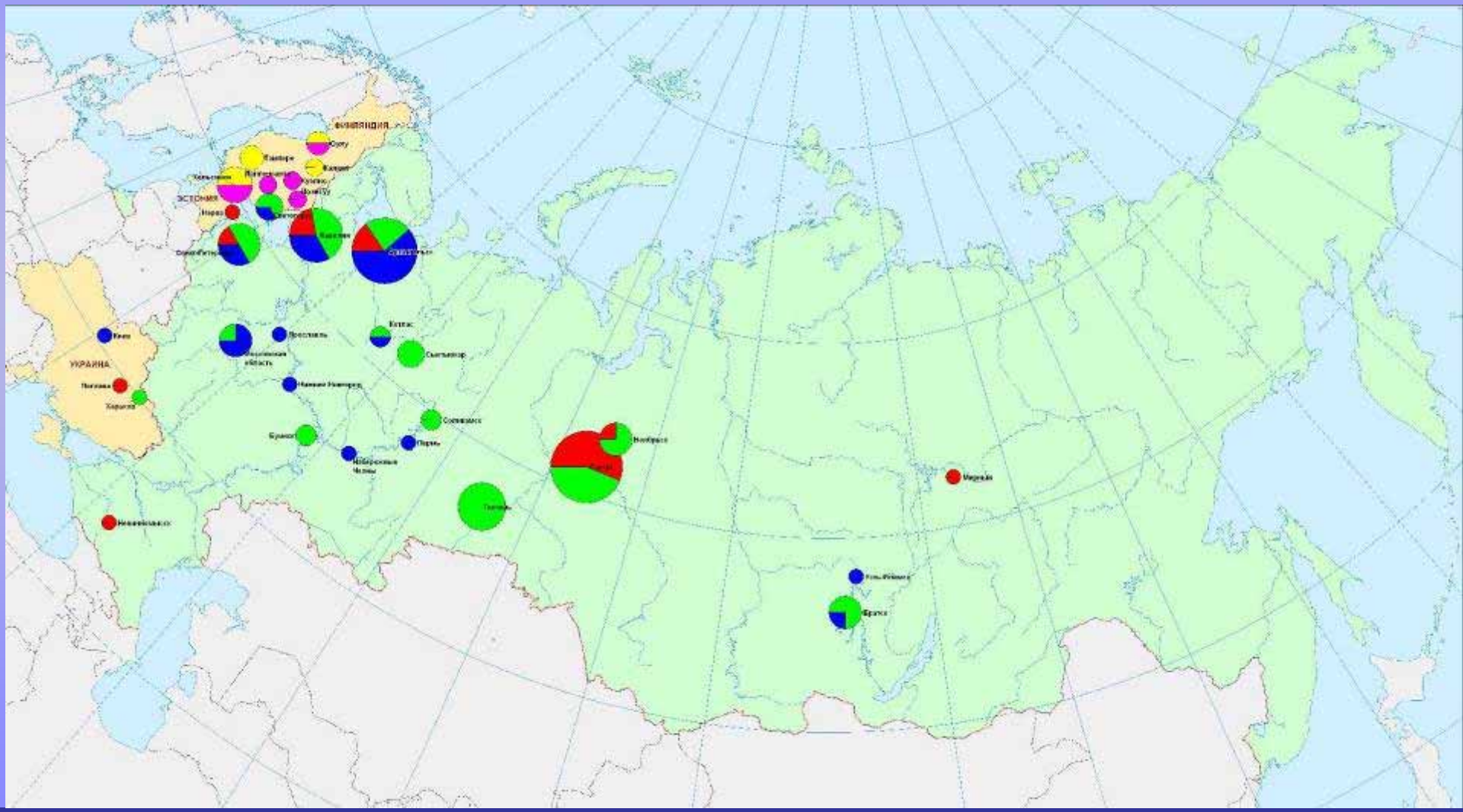
PMASC projects, customers and partners



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Federal contract (20 mln rub, 0.55 mln Euro)

"Versatile software system for developing production planning and control applications":

- Optimal planning of cardboard plant operation (including trim optimization);
- Software packages for multi-product plant management
- Optimization of loading of transportation facilities (trucks, trains and ships);
- Optimal planning of paper machines operation (including trim optimization);
- Optimal planning of plywood plant operation;

Budget: €0.55 mln - Federal agency for science of Russia

Time schedule: December 2007 – November 2008

Cooperation with VTT Technical Research Center of Finland

Progress

- VTT is the largest multidisciplinary contract research organization in Northern Europe (www.vtt.fi). Funding in 2007: €232 mln.
- Cooperation going on since 2005 (wireless sensors networks)
- Memorandum of understanding signed on June 01, 2007
- Separate subcontracts signed for each project
- Projects:
  - scientific research on development of a project management tool for distributed agile software development
  - wireless sensors networks

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Cooperation with VTT: hardware and software for sensor control and communica-tion

Cooperation with Nokia Research Center

Progress

- Cooperation since 2006 (participation in events organized by Nokia)
- 05 March 2008: “WidSets meets Russia” seminar at PetrSU. Attended by more than 50 students and staff members of PetrSU.
- 25-30 August 2008: Summer school “Internet-tablet 2008” at PetrSU. Attended by more than 50 students and staff members of PetrSU.
- 05 Sept. 2008: 1st Russian Conference on Smart Spaces (ruSMART), St.-Petersburg. 6 participants from PetrSU (sponsored by Nokia).
- **Current activity**:

  Mobile and Wireless Systems Center of PetrSU (Software development for Maemo platform, Open Source courses, widgets, wireless sensors networks).

  Discussions with Symbian Academy, HIIT, et. al.

Cooperation with Metso Minerals

Progress

- Discussions going on since 2006
- Developers selected in June
- Contract signed as of October 01
- The development work starts on November 10 with a training course in MM office in Tampere
- Project contents currently quite confidential

Cooperation with universities of Finland

At the **Finnish-Russian Cross-Border University (CBU)** one can join a Master's degree program in 6 study fields: Information and Communications Technology, Forestry and Environmental Engineering, Business and Administration, History, International Relations, Public Health.

Studies are made on both sides of the border, in Finland and in Russia. The extent of the studies is two years and 120 ECTS credits.

Required: Bachelor's degree and a good command of academic English.

Participating universities: University of Helsinki, University of Tampere, University of Joensuu, University of Kuopio, Lappeenranta University of Technology;

St. Petersburg State University, St. Petersburg State Polytechnic University, **Petrozavodsk State University**

Web-site: http://www.joensuu.fi/cbu/

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Visit of President of Russia D. Medvedev

On July 18 a delegation headed by President of Russia Mr. Dmitry Medvedev has visited Petrozavodsk:

- Deputy head of the Government of Russia Mr. Sergey Ivanov,
- Minister of Economic Development of Russia Mrs. Nabiullina,
- Minister of Communications of Russia Mr. Shuvalov,
- Minister of Education and Science of Russia Mr. Fursenko

Mr. Medvedev, Mr. Fursenko, Mrs. Nabiullina and Head of the Government of Karelia Mr. Katanandov visited PetrSU, where Rector of PetrSU, director and staff of PMASC presented main achievements and directions of activity of PetrSU in the field of information technologies.

ПетрГУ
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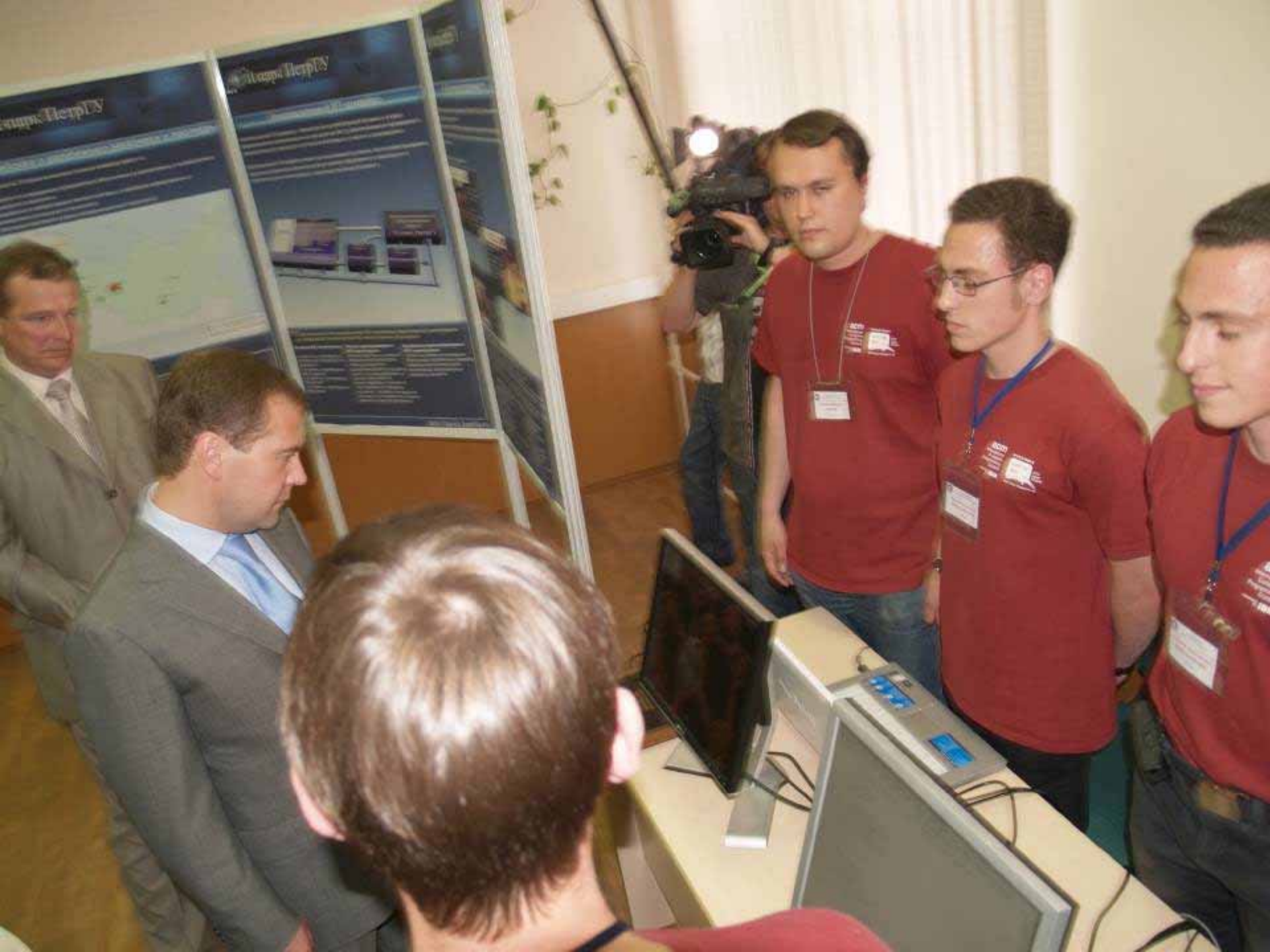
Общая информация
совет IT-парка
Российские и зарубежные заказчики и партнеры
Специуры



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Overall …

We believe that in the next years

- IT will be ubiqutous (“all around”)
- success will come to the organization that (among other resources) can well handle and manage Information
- qualification, size and *motivation* of resource pool are key success factors for an IT-company

We prepare for this challenge