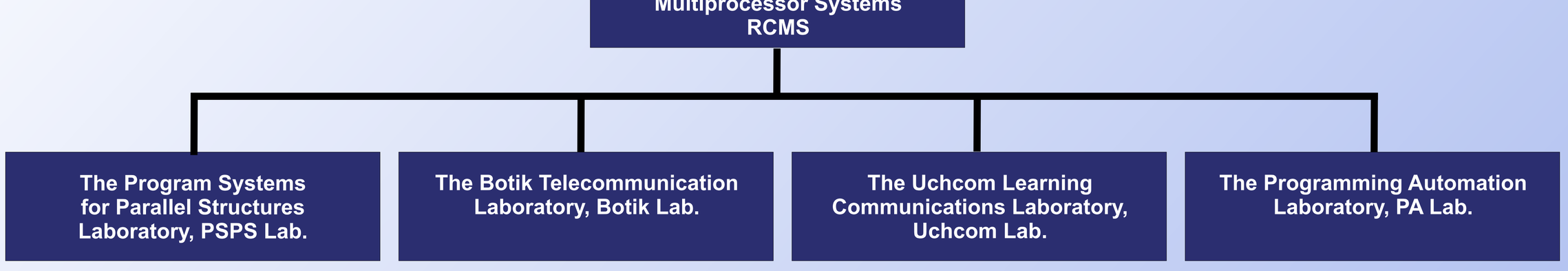
Russian Academy of Sciences

Program Systems Institute

Research Center for Multiprocessor Systems



Software and Hardware for Multiprocessor Systems

- Development of theory and methodology for automatic dynamic program parallelization.
- Software design and development for multiprocessor systems within the framework of the SKIF Russia-Belarus Union State Supercomputer Program:
  - cluster-level software development (CLSW) for the SKIF supercomputer family;
  - application system development for the SKIF supercomputers.
- Hardware development for multiprocessor systems.
- Organization of students' schools/workshops with the purpose of training programmers for high-performance computers of the SKIF family.

Hardware and Software Solutions for Regional Networks

- Development of cost effective hardware and software solutions for regional (urban and rural) computer networks (BOTIK Technologies).
- Design, maintenance, and development of regional networks in Pereslavl (the Botik Telecommunication System) for further testing and enhancement of the Botik technologies.
- Transfers of the approved technology to Russian regions and the CIS countries.

Learning Internet Resources Network Communities of Practice

- Building and research of network communities of practice.
- Development of ways of introducing digital collections into teaching and learning processes.
- Development and adaptation of social network resources to learning purposes.
- Investigation of cognitive space of personality.
- Research of personal psychology and computer technology interference.
- Design and development of network learning resources.

Metacomputations and Functional Programming Languages

- Supercompilation and automatic program conversion.
- Application of metacomputations to theoretical and practical programming.
- The Refal and Flac functional programming languages.
- Realization of the Refal Plus programming system for different platforms, including multiprocessor systems.
- The CAC, DoCON computer algebra systems.
- Realization of a standard library project of the BAL-0.01fundamental algebra for the Haskell programming language.

ADDRESS

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