Standardization of Information Technologies in Fundamental Research in Russia

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ABSTRACT

This article presents history, current state and directions of research and implementation of Open Information System Technology in the Russian Academy of Sciences. [Article copies are available for purchase from InfoSci-on-Demand.com]

Keywords: Interoperability; OST; Profile; RAS; Standardization

INFORMATION TECHNOLOGIES IN THE RUSSIAN ACADEMY OF SCIENCES

The Russian Academy of Sciences was established on the order of the Emperor Peter I by the Decree of the Ruling Senate dated January 28 (February 8), 1724. The Academy was reinstated by the Decree of the President of the Russian Federation dated November 21, 1991 as the supreme scientific institution of Russia (http://www.ras.ru).

The Russian Academy of Sciences (RAS) is a civil self-governed non-commercial organization. The RAS functions in compliance with the legislation of the Russian Federation and the Academy Charter. It is the legal successor of the Academy of Sciences of the USSR within the territory of the Russian Federation.

The principal aim of the RAS is the organization and performance of fundamental research for the purpose of obtaining further knowledge of the natural, social...
and human development principles that promote technological, economic, social and cultural development in Russia.

The Academy also does applied research. Right now, the innovation policy - the mechanism of using the fundamental researches in practice in the field of the market economy - is revised.

Due to its historical status and aims, the RAS is subdivided both into individual science-branches and territorially. It includes 9 scientific departments and 3 regional departments of RAS, and also 14 regional scientific centers. The Academy includes about 400 scientific-research institutions, located all over the country.

RAS is connected with all systems of scientific researches and high education in the country. It also hosts many scientific councils, committee and commissions.

The main aims of the scientific councils (commissions) in the field of the most important problems of scientific research is to analyze the state of research in the relevant fields of science, and coordinate the scientific research done by the different organizations subordinate to the central office of RAS. The scientific councils, which are scientific-consulting agencies, are made of the leading scientists, regional academies, employees of the high schools, representatives of the ministries, agencies, and organizations which take part in the decision-making about relevant problems. Organization of scientific sections, conferences and publications are important parts of the work of the scientific councils.

The scientific councils on the important problems of the scientific developments are usually run by the different departments of RAS. Some, however, which work on the problems of the few departments of RAS, is by the Presidium of RAS. One of them is the Council on “High Performance Computing Systems, Scientific Telecommunications and Information Infrastructure” (Chairman: academician G.I. Savin). One of the functions of the Council is to make recommendations on emerging standards and profiles for computing systems and information technologies. The Council comprises three sections, including the “Open systems” section.

RAS is playing the role of both custom-er and the developer of IT. The customers are the specialists who work in the fields of natural sciences and humanities; effective scientific research in all fields is almost impossible without IT. The development of new IT is usually done by RAS’ Department of Nanotechnologies and Information Technologies. The main Directions of their work include (Head of Department - academician E. P. Velikhov):

1. Theories of information, scientific foundation of information-computing systems and networks, the information society.
2. Systems of automation, CALSTechnologies, mathematic models and methods of research on large scale management systems and processes.
3. Neuro-informatics and bio-informatics; scientific foundations and applications.
4. Global and integrated information-telecommunication systems and networks, Information Technologies, fundamental and practical problems of the creation of a distributed information-computing environment based on GRID technologies, and the development of standards for the GRID.
5. Architecture, software for, and standardization of, information security for new generation IT systems and networks.
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