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EC FP6 Enviro-RISKS project outcomes in area of Earth and Space Science Informatics applications

E. P. Gordov (1) and E. A. Zakarin (2)

(1) Siberian Center for Environmental Research and Training/Institute of Monitoring of Cimatic and Ecological Systems SB RAS, Tomsk, Russian Federation (gordov@scert.ru, + 3822 492537), (2) KazGeoCosmos enterprise ,Almaty, Republic of Kazakhstan

Nowadays the community acknowledged that to understand dynamics of regional environment properly and perform its assessment on the base of monitoring and modeling more strong involvement of information-computational technologies (ICT) is required, which should lead to development of information-computational infrastructure as an inherent part of such investigations. This paper is based on the Report&Recommendations (www.dmi.dk/dmi/sr08-05-4.pdf) of the Enviro-RISKS (Man-induced Environmental Risks: Monitoring, Management and Remediation of Man-made Changes in Siberia) Project Thematic expert group for Information Systems, Integration and Synthesis Focus and presents results of activities of Project Partners in area of Information Technologies for Environmental Sciences development and usage.
Approaches used the web-based Information Technologies and the GIS-based Information Technologies are described and a way to their integration is outlined.

In particular, developed in course of the Project carrying out Enviro-RISKS web portal and its Climate site (http://climate.risks.scert.ru/), providing an access to interactive web-system for regional climate assessment on the base of standard meteorological data archives, which is a key element of the information-computational infrastructure of the Siberia Integrated Regional Study (SIRS), is described in details as well as developed on the base of GIS technology system for monitoring and modeling air and water pollutions transport and transformations. The later is quite useful for practical applications realization of geoinformation modeling, in which relevant mathematical models are plunged into GIS and all the modeling and analysis phases are accomplished in the informational sphere, based on the real data including those coming from satellites.

Major efforts currently are undertaken in attempt to integrate GIS based environmental applications with web accessibility, computing power and data interoperability thus to exploit completely huge potential of web bases technologies. In particular, development of a region devoted web portal using approached suggested by the Open Geospatial Consortium has been started recently.

The state of the art of the information-computational infrastructure in the targeted region is quite a step in the process of development of a distributed collaborative information-computational environment to support multidisciplinary investigations of Earth regional environment, especially those required meteorology, atmospheric pollution transport and climate modeling. Established in process of the Project carrying out cooperative links, new Partners initiatives, and gained expertise allow us to hope that this infrastructure rather soon will make significant input into understanding regional environmental processes in their relationships with Global Change. In particular, this infrastructure will play a role of the 'underlying mechanics' of the research work, leaving the earth scientists to concentrate on their investigations as well as providing the environment to make research results available and understandable to everyone.

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