



## **Internet-based information system of digital geological data providing**

Egor Yuon (1), Mikhail Soukhanov (2), and Kirill Markov (3)

(1) SRC VNIIGeosystem, Moscow, Russian Federation (egor@geosys.ru), (2) SRC VNIIGeosystem, Moscow, Russian Federation (mik@geosys.ru), (3) SRC VNIIGeosystem, Moscow, Russian Federation (kirm@geosys.ru)

One of the Russian Federal agency of mineral resources problems is to provide the geological information which was delivered during the field operation for the means of federal budget. This information should be present in the current, conditional form. Before, the leading way of presenting geological information were paper geological maps, slices, borehole diagrams reports etc. Technologies of database construction, including distributed databases, technologies of construction of distributed information-analytical systems and Internet-technologies are intensively developing nowadays. Most of geological organizations create their own information systems without any possibility of integration into other systems of the same orientation.

In 2012, specialists of VNIIGeosystem together with specialists of VSEGEI started the large project – creating the system of providing digital geological materials with using modern and perspective internet-technologies. The system is based on the web-server and the set of special programs, which allows users to efficiently get rasterized and vectorised geological materials. These materials are: geological maps of scale 1:1M, geological maps of scale 1:200 000 and 1:2 500 000, the fragments of seamless geological 1:1M maps, structural zoning maps inside the seamless fragments, the legends for State geological maps 1:200 000 and 1:1 000 000, full author's set of maps and also current materials for international projects «Atlas of geological maps for Circumpolar Arctic scale 1:5 000 000» and «Atlas of Geologic maps of central Asia and adjacent areas scale 1:2 500 000».

The most interesting and functional block of the system – is the block of providing structured and well-formalized geological vector materials, based on Gosgeolcart database (NGKIS), managed by Oracle and the Internet-access is supported by web-subsystem NGKIS, which is currently based on MGS-Framework platform, developed by VNIIGeosystem. One of the leading elements is the web-service, which realizes the interaction of all parts of the system and controls whole the way of the request from the user to the database and back, adopted to the GeoSciML and EarthResourceML view.

The experience of creation the Internet-based information system of digital geological data providing, and also previous works, including the developing of web-service of NGKIS-system, allows to tell, that technological realization of presenting Russian geological-cartographical data with using of international standards is possible. While realizing, it could be some difficulties, associated with geological material depth. Russian informational geological model is more deep and wide, than foreign. This means the main problem of using international standards and formats: Russian geological data presentation is possible only with decreasing the data detalisation. But, such a problem becomes not very important, if the service publishes also Russian vocabularies, not associated with international vocabularies. In this case, the international format could be the interchange format to change data between Russian users. The integration into the international projects reaches developing of the correlation schemes between Russian and foreign classificators and vocabularies.