POSSIBILITIES OF VISUAL INTERPRETATION OF TRUNK PIPELINES AND INFRASTRUCTURE FACILITIES USING SATELLITE IMAGES OF HIGH AND ULTRA-HIGH SPATIAL RESOLUTION

Daniil V. Dolgopolov
LLC "I-Teco CC", 14, Kedrova St., Moscow, 117218, Russia, Ph. D., Deputy Head of Geographic Information Systems and Cartography Division, phone: (905)714-13-77, e-mail: d-daniil@yandex.ru

Dmitry V. Nikonov
LLC "I-Teco CC", 14, Kedrova St., Moscow, 117218, Russia, Senior Geospatial Analyst, Geographic Information Systems and Cartography Division, phone: (917)592-52-29, e-mail: nikonov.msk@gmail.com

Alexandra V. Poluyanova
LLC "I-Teco CC", 14, Kedrova St., Moscow, 117218, Russia, Specialist, Geographic Information Systems and Cartography Division, phone: (916)608-93-91, e-mail: Aleksis709@yandex.ru

Vyacheslav A. Melkiy
Institute of Marine Geology and Geophysics of the Far East Branch of Russian Academy of Science (IMGG FEB RAS), 1b, Nauki St., Yuzhno-Sakhalinsk, 693022, Russia, D. Sc., Leading Researcher, Laboratory of Volcanology and Volcano Hazard, phone: (984)139-70-77, e-mail: vamelkiy@mail.ru

Image recognition specialists perceive the surrounding space as set of fragments of interrelated images that are recognizable objects of natural environment and industrial complexes. Visual interpretation allows to reveal the specific properties of parts, components, production facilities, which are reflected in images and stand out in the analysis of shape, size and other distinctive features of the decryption based on the knowledge and experience of the interpreter. The purpose of the work is to identify the possibilities of high-resolution images to determine the condition of pipelines and organize monitoring, ensuring reliable and safe operation of oil and gas facilities. Researchers in this research used methods of visual interpretation and GIS mapping. In the article the methods of filling corporate geographic information systems with information about the state of pipelines on satellite images of high and ultra-high spatial resolution are developed. The analysis of the images of the visible range obtained by the spacecraft SPOT-6 and GeoEye-1 is carried out, the decoding features for the recognition of technological equipment and infrastructure of trunk pipelines are determined based on the data of the decoding of space images with high spatial resolution and the creation of schemes and models based on them. Studies have shown that images with resolution of 1,5 m/pix can be used in mapping schemes at scale of 1 : 25 000, containing simplified spatial data. Images with resolution of 0,5 m/pix in conjunction with the operational documentation allow you create topographic plans at scale of 1 : 2 000 and perform inventory of the equipment of the linear part of the main pipelines and oil pumping stations.

Key words: Earth's remote sensing, visual observation, interpretation, main pipeline, infrastructure, pipeline transport, geodetic reference, linear coordinate system, monitoring of lands, digital cartography, pattern recognition.

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