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INTELLECTUAL SYSTEM OF PROCESSING AEROSPACE DATA FOR MODERN MANAGEMENT
AZERBAIJAN NATIONAL SPATIAL DATA

Abstract

Aerospace activities are one of the priority directions of the state policy of the Republic of Azerbaijan. Intellectual resources are one of the basic strategic reserves of the country's future development.

The state of modern development of information and communication technology has contributed to the comprehensive development of the country, as well as the creation of the space industry, which has been of significant importance for national security and economic benefit. The implementation of satellite systems requires the use of accurate information obtained from the remote sensing satellites of the Republic of Azerbaijan in economic, energy and other areas of regional importance.

Aerospace information systems and technologies that have rapidly spread in the 21st century and the processes of globalization, which have received a new impulse in this regard, have a serious impact on the socio-economic life of the country. Nowadays, the collection of dynamically changing data and their analysis is extremely important.

This paper presents modern methods for the processing of remote sensing data. The developed algorithm devoted to the solution of tasks of preliminary analysis of images and recognition of target objects for their further monitoring is carried out. Emphasis has been placed high-performance computing technologies and artificial neural networks.

Furthermore, discusses the technology for selecting the necessary Earth observation satellite systems from a large distribution of continuous real-time data.

Technology for automated maintenance of super-large distributed archives satellite data and the results of their processing requires accurate processing of aerospace data in real time.

The use of high-resolution satellite information requires the evaluation of multiple natural and artificial objects in the same location and the selection of objects with similar spectral characteristics.

Intelligent algorithms are used for image classification because of their nonstatistical basis, their ability to easily use different data from different sources simultaneously, and their ability to learn. For this purpose, investigated intelligent algorithms are the most used in the solution of the clustering problems, but the clustering problem is not singular, and since there is no single-valued criterion of the best quality, the quality criterion will depend on the clustering criterion.

We have used machine learning techniques that are intended to solve segmentation, classification, and decision-making problems by artificially augmenting the data with limited samples.