

## INFORMATION AND WEB TECHNOLOGIES

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### REMOTE EARTH SENSING USING AES

Remote sensing of the Earth (ERS) - observation of the Earth's surface by ground, aviation and space vehicles, equipped with various types of imaging equipment.

Earth remote sensing spacecraft are used to study the natural resources of the Earth and to solve meteorological problems. Spacecraft for the study of natural resources are equipped mainly with optical or radar equipment. The advantages of radar equipment are that it allows you to observe the Earth's surface at any time of the day, regardless of the state of the atmosphere.

Examples of remote sensing applications include monitoring deforestation (for example, in the Amazon basin), the state of glaciers in the Arctic and Antarctic, and measuring the depth of the ocean using a lot. Remote sensing is also replacing expensive and relatively slow methods of collecting information from the Earth's surface, while at the same time guaranteeing human non-interference in natural processes in the observed territories or objects.

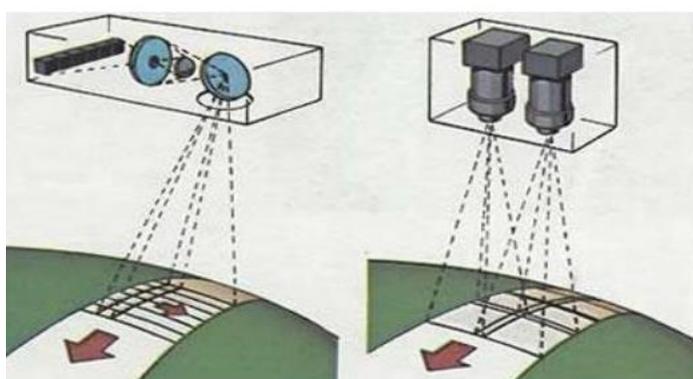


Fig. 1. Earth scanning methods

Remote sensing of the Earth's surface refers to the observation and measurement of the energy and polarization characteristics of radiation from objects in different ranges of the EM spectrum in order to determine the location, type, properties and temporal variability of environmental objects without direct contact with a measuring device. Remote sensing has a wide range of applications, primarily in the military sphere.

In the non-military field, most applications fall into the environmental research category:

1. Atmosphere: temperature, precipitation, distribution and type of clouds, concentration of gases, etc.
2. Earth's surface: topography, temperature, albedo, soil moisture, type and condition of vegetation, anthropogenic loads.
3. Ocean: temperature, topography, water surface color, etc.
4. Cryosphere: distribution, state and dynamic movements of snow, sea ice, icebergs, glaciers.

One of the most important characteristics of remote sensing is the ability to accumulate data on a large area of the earth's surface or volume of the atmosphere in a short period of time, obtaining an almost instantaneous image

Currently, remote sensing data is a source of relevant and operational spatial information and is widely used to solve various thematic problems.