

## Remote Sensing

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### Abstract

Today the GIS and Remote sensing technology has been operationalised to cover diverse themes areas such as forestry, agriculture drought monitoring, flood monitoring and damage assessment, land use/ land cover and soil resource mapping studies, wasteland identification, water resources, ground water targeting, marine resources survey, urban planning, mineral prospecting environmental impact assessment and so on encompassing almost every facet of sustainable resource development and management.

**KEYWORDS:** GIS and remote sensing, synoptic, transmitter, electromagnetic radiation.

### Introduction:

Remote sensing is the science of deriving information about an object or phenomena through analysis of data acquired by a device that is not in contact with the object or phenomena under investigation. Here the measurements are made in different spectral region on interaction between the targets and electromagnetic radiation. The observations are synoptic provide repetitive coverage of large areas and the data is quantifiable. Remote Sensing is “The art and science of obtaining information about an object without being in direct contact with the object” (Jensen 2000). There is a medium of transmission involved.

### Study Objectives:

The present study has the following objectives, i) to study the Discussion in GIS & Remote Sensing. ii) to understand the GIS & Remote Sensing.

### Data Base & Methodology:

The data has been furnished from the related articles, research papers. Some data has furnished the websites & as well as time magazine. For the present research paper the primary and secondary sources have been used. Materials from various libraries have been collected. The articles regarding to it have been read thoroughly. The descriptive and analytical research methods has been used for this research paper.

### What is Remote Sensing?

“Remote Sensing is defined as the science and technology by which characteristics of objects Of interest can be identified without direct contact” Concept of Remote Sensing

Earth observation from space and air Remote Sensing is a technology to observe objects' size, shape and character without direct contact with them. The reflected or radiated electromagnetic (EM) waves are received by sensors aboard Platform. “The art and science of obtaining information about an object without being in direct contact with the object” (Jensen 2000).

### Importance of GIS and Remote Sensing:

A flat representation of the surface of the Earth. A graphic representation of features using points, lines, and areas defined both by position with reference to a

coordinate system and by their non-spatial attributes. An abstract representation of the physical features of a portion of the Earth's surface graphically displayed on a planar surface. A map represents geographic features or other spatial phenomena by graphically conveying information about locations and attributes. GIS is in organized collection of Computer hardware, software, geographic data, and personnel designed to efficiently capture, store, update, manipulate, analyze and display and publish all forms of geographically referenced information. Any geographical data can be represented by points, lines, areas and continuous surfaces. **Points** are the simplest type of spatial of spatial data. They are zero dimensional objects with only a position in space but no length. **Lines** are one dimensional spatial objects besides having a position in space, they also have a length. **Areas** are two dimensional spatial objects with not only a position in space and a length but also a width. **Continuous surfaces** are three dimensional spatial objects with not only a position in space a length and a width, but also a depth or height. These spatial objects have not been discussed further because most GIS do not include real volumetric spatial data. **Data Types** : Any geographical data comes in three basic forms

1. Map data- Map data contains the location and shape of geographic features maps use three basic shapes to present real-world features points, lines, and areas called polygons.
2. Attribute data- Attribute data is the descriptive data that GIS links to map features Attribute data is collected and compiled for specific areas like states census tracts, cities and so on and often come packaged with map data.
3. Image data : Image data ranges from satellite images and aerial photography to scanned maps.

### Three Views of a GIS

A GIS is most often associated with maps. A map however is only one way you can work with geographic data in a GIS and only one type of product generated by a GIS This is important because it means that a GIS can provide a great deal more problem solving capabilities than using a simple mapping program or adding data to an online mapping tool. a GIS can be viewed in three ways.

Data models in GIS . There are three basic data models that GIS uses are vector raster and TIN , Vector, and raster. Methods in representation of terrain :- Physical Models, Physiographic Diagrams, Block Diagrams. Gridded perspective block diagram – It is another type of block diagram used to display surface terrain. Channel Geometry and Flow Characteristic:- Stream Flow , Flow velocity, Flow Regimes, Stream Discharge , stream energy, Sinks and Peaks, hillshade, slope, aspect,

### Conclusion:

There is a growing awareness of the economic and strategic value GIS and Remote sensing the benefits of Geography Subjects on the Cost Saving and Increased Efficiency, Better Decision Making, Improved Communication, Better Record – Keeping, Managing Geographically, Useful Agriculture, Solution on Environmental Problems etc.

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