

Lecture-2

Introduction to Remote Sensing

(Advantages & Disadvantages of Remote sensing, Applications)

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Remote Sensing Advantages

- Remote sensing provides a regional view
- Remote sensing provides repetitive geo-referenced looks at the same area
- It provides useful information in various wave lengths, and they can be stored as permanent records for use in future.
- Remote sensors “see” over a broader portion of the spectrum than the human eye
- Sensors can focus in on a very specific bandwidth in an image
- They can also look at a number of bandwidths simultaneously
- Some remote sensors operate in all seasons, at night, and in bad weather
- Easy acquisition of data for inaccessible area
- Three dimensional analysis can be carried out using stereo satellite

Disadvantages

- It requires trend and experienced personnel for data processing and analysis .
- It become expensive affairs if applied for a small area
- Satellite data cannot be used for preparing large scale engineering Maps.
- Soft wares used for processing the data are costly.
- It requires ground verification .

Multi Concept of Remote sensing

1. **Multi Station Images.**
2. **Multi Band Images**
3. **Multi Date Images**
4. **Multi Stage Images**
5. **Multi Polarization images**
6. **Multi Enhancement images**
7. **Multi Disciplinary Analysis**

Multi Station images

- It involves successive overlapping picture along a flight path using an aircraft or space craft for better perception of 3D features and improve signal to noise ratio

Multi Band images

- Which exploit the fact that each type of feature tend to exhibit a unique type of tonal signature
- When the brightness values seen in the series of imagery taken in different wavelength band are suitably combine
- It is possible to identify the specific terrestrial features

Multi date images

- It involves a comparative analysis of the images taken in a series of preplanned dates
- It can provide an additional handle for identify the signature since many feature exhibits dynamic characteristics

Multistage images

- It involves in multistage sampling scheme
- It gives progressively more detail information from successively smaller sub-sample of the area being studied
- Three stage process involving observations from space, aircraft and ground

Multi Polarization images

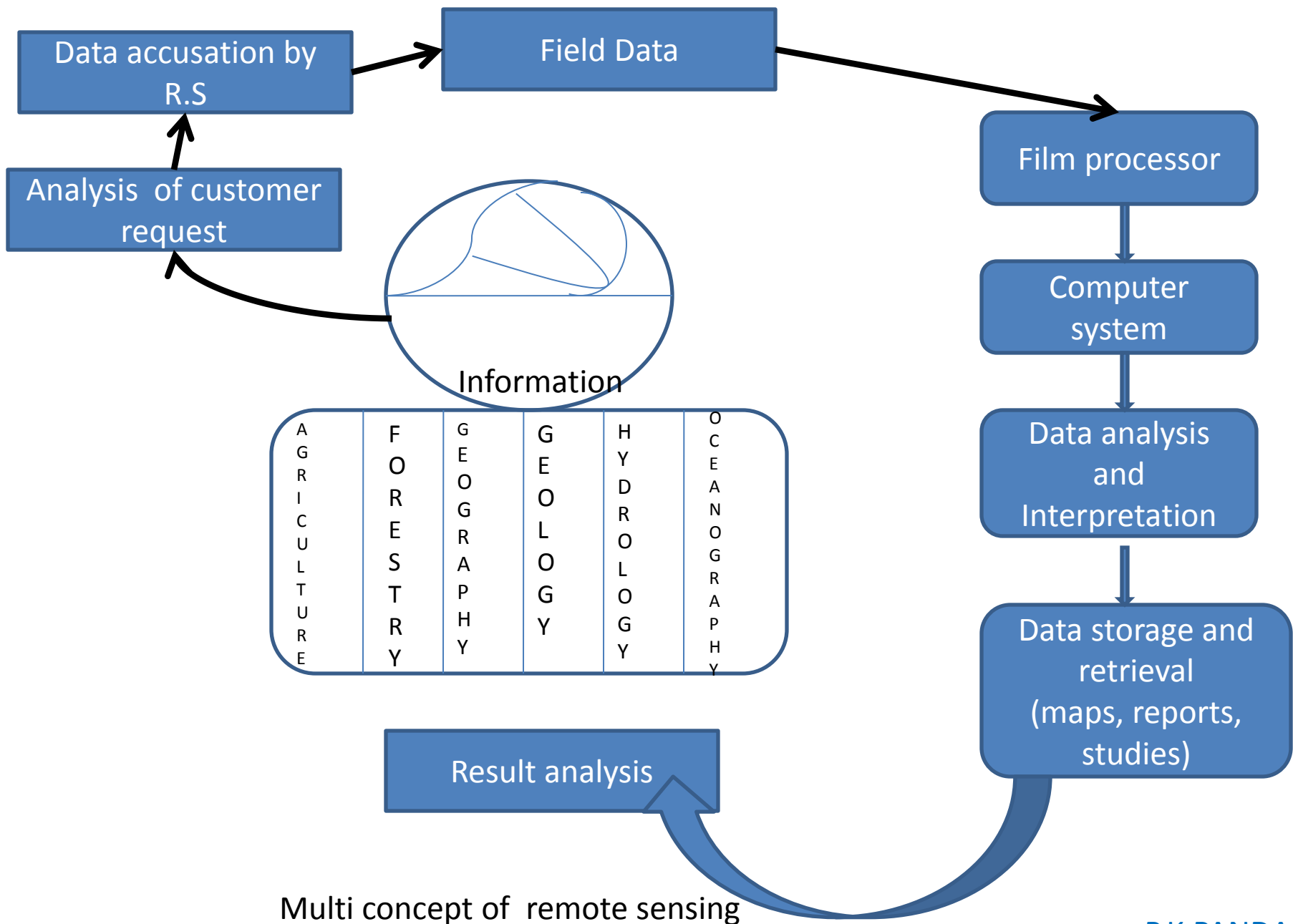
- Delineation of features are based on polarization of the reflected radiation
- Ex. Water body reflect more strongly polarized radiation
- Vegetation or fractured rock reflect weakly

Multi enhancement images

- It involves the combination of multi date ,multi band, multi polarization images to suitable generate composite images.

Multi Disciplinary analysis

- Analyzing the data by two or more analyst from different discipline
 - ✓ To obtained a more accurate and complete information about the total earth resources of an area.
- Analysis are usually presented in a set of multi-thematic



Multi concept of remote sensing

Remote Sensing Applications

- Land-use/land cover study
- Geological study
- Forest and agriculture applications
- Telecommunication and planning
- Environmental applications
- Hydrology and coastal mapping
- Urban planning
- Emergencies and Hazards
- Global change and Meteorology