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Topic: Concepts of satellite photogrammetry

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Report

Concepts of satellite photogrammetry

Hardware components of a digital photogrammetric workflows

i. Enabling stereo-viewing &

ii. Measuring capability

iii. Work station with appropriate processing & storage capabilities

A digital photogrammetric system is defined by its hardware & software designed to derive photogrammetric products from digital imagery using manual & automated techniques.

Digital photogrammetry is applied to digital images that are stored & processed on a computer.

Digital photogrammetry is sometimes called soft copy photogrammetry

photogrammetric process is fully automated.

ex:

commercial off the shelf photogrammetric software

• Leica geosystems

• PCI geomatica

• Intergraph

Base Systems

ENPHOV

→ open source software enabling photogrammetric processing

- ILWIS

- e-phot

- OSCIM

→ software requirements of a digital photogrammetric workflow

- standard requirements

Handling image display

Measurement

Recording pixel coordinates

Determination of orientations

Inner orientation

Relative & absolute orientation

Transformations

Image processing queries

Image matching

edge detection

Digital rectification

Visualization

- Automation

→ Advantages of imaging from space

- Synoptic view

- Large swath, repeatability

- constant scale

- negligible internal distortions

- stable radiometry

- General workflow
- Branches of photogrammetry
- Based on processing technique
 - Analog photogrammetry
 - Analytical & Digital photogrammetry

Input	Analog Hard copy (photograph)	Analytical Hard copy	Digital Digital
Processing	Manual	using computers	Digital processing

- Stereo imaging & topographic mapping
- Satellite
 - Cartosat-1, IRSIC/D, TM on Chandrayaan,
 - World view.

- Stereo imaging
 - Light rays in a bundle defined by the sensor are almost parallel - lensing importance of the satellite position.

- tri-stereo imagery

- stereo covering.