

9. Theme: Orthoimagery



The Federal Geographic Data Committee (FGDC, 1997, p. 18) defines **orthoimage** as "a georeferenced image prepared from an aerial photograph or other remotely sensed data ... [that] has the same metric properties as a map and has a uniform scale." Unlike orthoimages, the scale of ordinary aerial images varies across the image, due to the changing elevation of the terrain surface (among other things). The process of creating an orthoimage from an ordinary aerial image is called **orthorectification**. Photogrammetrists are the professionals who specialize in creating orthorectified aerial imagery, and in compiling geometrically-accurate vector data from aerial images. So, to appreciate the requirements of the orthoimagery theme of the NSDI framework, we first need to investigate the field of **photogrammetry**.

[◀ 8. Theme: Geodetic Control](#)[up](#)[10. Photogrammetry ▶](#)

The Nature of Geographic Information

Chapters

- ▶ [Chapter 1: Data and Information](#)
- ▶ [Chapter 2: Scales and Transformations](#)
- ▶ [Chapter 3: Census Data and Thematic Maps](#)
- ▶ [Chapter 4: TIGER, Topology and Geocoding](#)
- ▶ [Chapter 5: Land Surveying and GPS](#)
- ▼ [Chapter 6: National Spatial Data Infrastructure I](#)
 - [1. Overview](#)
 - [2. National Geographic Information Strategies](#)
 - [3. Legacy Data: USGS Topographic Maps](#)
 - [4. Accuracy Standards](#)
 - [5. Scanned Topographic Maps](#)
 - [6. Federal Geographic Data Committee](#)
 - [7. USGS National Map](#)
 - [8. Theme: Geodetic Control](#)
 - **[9. Theme: Orthoimagery](#)**

- 10. Photogrammetry
- 11. Perspective and Planimetry
- 12. Stereoscopy
- 13. Rectification by Stereoscopy
- 14. Orthorectification
- 15. Metadata
- 16. Digital Orthophoto Quadrangle (DOQ)
- 17. Summary
- 18. Bibliography

- ▶ [Chapter 7: National Spatial Data Infrastructure II](#)
- ▶ [Chapter 8: Remotely Sensed Image Data](#)
- ▶ [Chapter 9: Integrating Geographic Data](#)

Navigation

- [login](#)
- [Search](#)

Author: David DiBiase, Senior Lecturer, John A. Dutton e-Education Institute, and Director of Education, Industry Solutions, Esri. Instructors and contributors: Jim Sloan, Senior Lecturer, John A. Dutton e-Education Institute; Ryan Baxter, Senior Research Assistant, John A. Dutton e-Education Institute, Beth King, Senior Lecturer, John A. Dutton e-Education Institute and Assistant Program Manager for Online Geospatial Education, and Adrienne Goldsberry, Senior Lecturer, John A. Dutton e-Education Institute; College of Earth and Mineral Sciences, The Pennsylvania State University.

Penn State Professional Masters Degree in GIS: Winner of the 2009 Sloan Consortium award for Most Outstanding Online Program

This courseware module is offered as part of the Repository of Open and Affordable Materials at Penn State.

Except where otherwise noted, content on this site is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

The College of Earth and Mineral Sciences is committed to making its websites accessible to all users, and welcomes comments or suggestions on access improvements. Please send comments or suggestions on accessibility to the site editor. The site editor may also be contacted with questions or comments about this Open Educational Resource.



Navigation

- Home
- News
- About
- Contact Us
- People
- Resources
- Services
- Login

EMS

- College of Earth and Mineral Sciences
- Department of Energy and Mineral Engineering
- Department of Geography
- Department of Geosciences
- Department of Materials Science and Engineering
- Department of Meteorology and

Programs

- Online Geospatial Education Programs
- iMPS in Renewable Energy and Sustainability Policy Program Office
- BA in Energy and Sustainability Policy Program Office

Related Links

- Penn State Digital Learning Cooperative
- Penn State World Campus
- Web Learning @ Penn State

The John A. Dutton Institute for Teaching and Learning Excellence is the learning design unit of the College of Earth and Mineral Sciences at The Pennsylvania State University.

Atmospheric
Science

- Earth and Environmental Systems Institute
- Earth and Mineral Sciences Energy Institute



2217 Earth and Engineering Sciences Building, University
Park, Pennsylvania, 16802
Contact Us

Privacy & Legal Statements | Copyright
Information
The Pennsylvania State University ©
2023