Working with Drone Data in ArcGIS

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Topics

Drone data in ArcGIS

New Drone App from Esri

Managing Imagery
Drone Data in ArcGIS ▶ Themes

Full Motion Video  ▶  Mapping  ▶  Inspection
Drone Data in ArcGIS  ▶  Full Motion Video
Drone Data in ArcGIS ▶ Mapping
Drone Data in ArcGIS ➤ Inspection
Drone2Map™ for ArcGIS®
Drone2Map for ArcGIS

Overview

1. Collect

2. Process

3. Share

Streamlining Imagery from Drone to GIS
Drone2Map for ArcGIS ▶ Collect

Support for a Wide Range of Drones and Sensors
Let the App be the imagery expert

Drone2Map for ArcGIS  ▶  Process

2  Process

• Imagery expert in a box
• Ortho Mosaics
• Imagery and 3D Products
Drone2Map for ArcGIS

Process

Minimal metadata required
Drone2Map for ArcGIS ➤ Process

Image Matching Intelligence Built In
Drone2Map for ArcGIS ➤ Process

- **Rapid Processing Mode**
  - Field Optimized
  - Results in 15 mins
  - Rough Accuracy

- **Full Processing Mode**
  - Back in the Office
  - Results in 1.5 hrs
  - Highly Accurate

*Seamless Mosaics Ready to Share*
• Tile Caches and Dynamic Image Services

• 3D Web Scenes

• Upload and share to your Organization

• Leverage throughout the platform
Drone Imagery in ArcGIS
Enterprise Imagery Management
• Collection of ArcGIS COTS Technology, custom workflows, and web dissemination and discovery tools

• Transforms massive quantities of Imagery and LiDAR into rich and relevant information products

• Disseminates information products and raw content for search, discovery, and analysis
Enterprise Imagery Management

Disparate datasets spread among various locations and media

Catalog your content and make it available through a web based search and discovery experience

Baseline Your Imagery Archive
Enterprise Imagery Management

Streamline Ingestion, Cataloging, and Product Creation

1. User Defines Data
2. Metadata Harvest
3. Imagery & LiDAR Cataloged
4. Raw and Derived Products Created
5. Web Discovery

- Scripts
- Imagery and LiDAR Catalog
- Feature Extraction Services
- True Color
- False Color
- NDVI
- Infrared

Define Data
Enterprise Imagery Management

• Web-based Imagery Search and Discovery of entire archive
• Easy-to-use, accessible web apps
• Ingest from one or many imagery archives
Enterprise Imagery Management

Apps and services to search, discover, and download imagery
Search and Discovery
Image Analysis
Image Analysis ➤ Imagery Characteristics

- 4 band, 6-inch resolution imagery
  - Blue, Green, Red, Near-Infrared
  - Color corrected
  - Tiled
Image Analysis ➤ Classify and Extract

Semi-Automated

- Multispectral Imagery
- Create 3 band representation
- Image Segmentation
- Collect Training Samples

Automated

- Image Segmentation
- Train Classifier
- Classify Image
- Classified Image
Create 3 band Representation

Image Analysis

Natural Color (RGB)

False Color (NIR, Red, Green)

False Color (Blue, Green, NDVI)

Multispectral Imagery → Create 3 band representation
Image Analysis ➤ Segment the Image

Create 3 band representation ➔ Image Segmentation
Image Analysis ▶ Collect Training Samples

Image Segmentation ➔ Collect Training Samples

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Image Analysis ▶ Object Oriented Classification

Original Image

Segmented Image

Classified Level 2 Image

Image Segmentation ➔ Train Classifier ➔ Classify Image ➔ Classified Image
Image Analysis
Remapping and Aggregation of Classes

Classified Level 2:
- dark grey roof
- grey roof
- brown roof
- white roof
- streets
- barren
- evergreen class 1
- evergreen class 2
- deciduous dead
- grass
- dead grass
- shadow
- water

Classified Level 1:
- impervious
- woody vegetation
- non-woody vegetation
- shadow
- water

Classified Level 0:
- pervious
- impervious
Questions?
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Understanding our world.