PHOTOGRAMMETRY E-LEARNING PROGRAM

PHOTOGRAMMETRY - E-LEARNING PROGRAM

Drones Imaging offers you a guided introduction to the use of various software tools to create mosaics, orthomosaics and 3D models. From tutorials and associated airborne imagery, follow the step by step process that will help you to hone your skills and expand your range of digital productions.

In this context, Drones Imaging offers the following training modules:

- Module 01 ORTHOMOSAIC
- Module 02: 3D
- Module 03: DSM
- Module 04: DELIVER A 3D MODEL TO A CUSTOMER
- Module 05: FLIGHT PLAN PREPARATION
- Module 06: DETECTION OF CHANGES
- Module 07: EXERCISE: SPECIFIC CASE

DETAILED MODULES

01-Module ORTHOMOSAIC
Objective: Create digital mapping with airborne imaging.

- Introduction to orthorectification.
- **Tutorial #1:** Create a mosaic (10ha agricultural plot: 49 images available to download).
- **Tutorial #2:** Create a georeferenced orthomosaïc (2ha agricultural plot: 170 geotagged images available to download).
- Parameter settings.
- Export a georeferenced orthomosaic and import it into google earth.
- Edit a quality report.
- **Knowledge verifcation with two datasets (agricultural plot : 22 geotagged images available to download and a bridge deck: 19 pictures available to download).**

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02-Module 3D

**Objective:** build and operate a 3D model from airborne imagery.

• Introduction to the epipolar geometry. Comparison of different software solutions.
• **Tutorial #1:** Three-dimensional construction from aerial images (rugged terrain: 6 images available to download) - manual georeferencing - export and import into a 3D editing software - Length measurement.
• **Tutorial #2:** Three-dimensional construction from aerial images (pile of gravel: 5 images available to download) - Alterations - scaling and volume calculation.
• **Tutorial #3:** Three-dimensional reconstruction from aerial images (rugged terrain: 6 images available to download) - export and import into a 3D editing software.
• **Knowledge verification with one imagery dataset (triumphal arch in Paris: 31 images available to download).**

03-Module DSM

Objective: build and operate a digital elevation model from airborne imagery.

• Introduction to DSM.
• **Tutorial #1:** Create a DSM from aerial images (riverbank study: 19 images available to download) - georeferencing from google earth - export and import into a GIS software - flood simulation.
• **Tutorial #2:** Create a DSM from geotagged aerial images (rugged terrain: 5 images available to download) – export and import into GIS software - Topographic profile.
• **Knowledge verifcation with two data sets (open quarry: 78 geotagged images and an highway: 48 geotagged images available to download).**
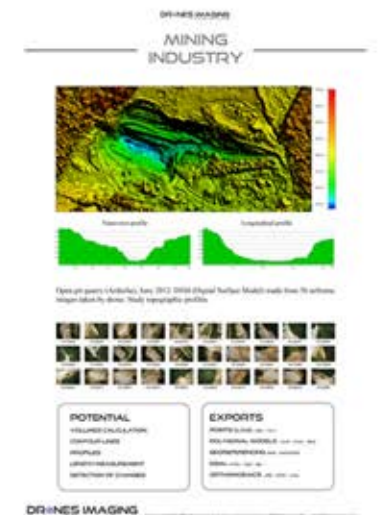
04-Module Deliver a 3D model to a customer

Objective: To deliver and share a personalized 3D production.

• **Tutorial #1:** Create a 3D model from aerial images (roof farm: 10 images available to download).
• Insert a 3D model into a pdf document to customize according to the company (titration, logo etc..).
• Share a 3D model through an online viewing platform. (Sketchfab).

Partnerships

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05-FLIGHT PLAN PREPARATION

**Objective:** To learn how to prepare and plan a flight according to a client's needs.

• Study and transform the customer request into a flight path (with flying height, image resolution, overlapping, time etc.).
• Equipment necessary.
• **Tutorial #1:** Orthophoto generation (vineyard: 46 images available to download).
• Georeferencing.
• Quality control and correction techniques.

06-Module DETECTION OF CHANGES

Objective: To perform a multi-temporal analysis.

• **Tutorial #1:** Detect any changes in an interval of eight months (roof barn: 50 images available to download).
• Detection of roof collapse by calculating physical differentiation.
• **Tutorial #2:** Automatically detect changes (damages) on a wall by radiometric subtraction (6 images available to download).
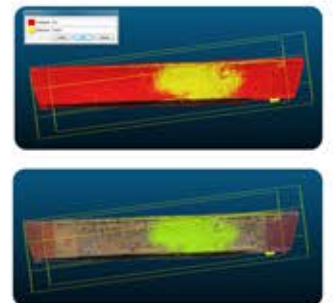
07-Module RESTITUTION: SPECIFIC CASE

Objective: deliver a personalized 3D production according to customer requirements.

• As part of the development of the tourism assets of the Drôme, the mayor contacted you to create a 3D model of his town. This model will be used to enrich the village website.

Partnerships

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