Pix4Dmapper, a New Wave of Geographic Information From UAV Platforms

OhioGIS, September 22, 2015

Pix4D Proprietary

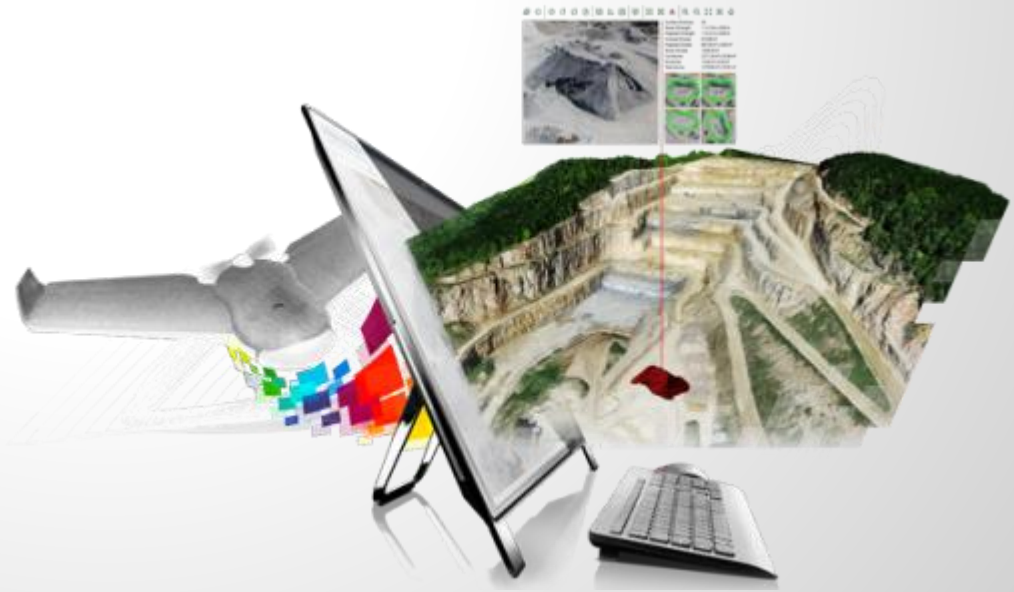
Pix4D

EPFL ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE **spin-off, 2011**

Lausanne (HQ), San Francisco, Shanghai

+100 partners globally

senseFly Parrot dji 3DR Aeryon Labs Inc.



Changing the mapping game

Survey efficiency with respect to survey area

PIX4D
simply powerful

PIX4D pro mapper

Software converting images from off-the-shelf sensors into centimeter accurate 2D maps and 3D models

AUTOMATICALLY

PIX4D simply powerful

Thousands of active Pix4D customers using drones for professional 3D mapping

Over 1000+ projects daily

PIX4D
simply powerful

OS X Mavericks

ANDROID

iOS

Enterprise

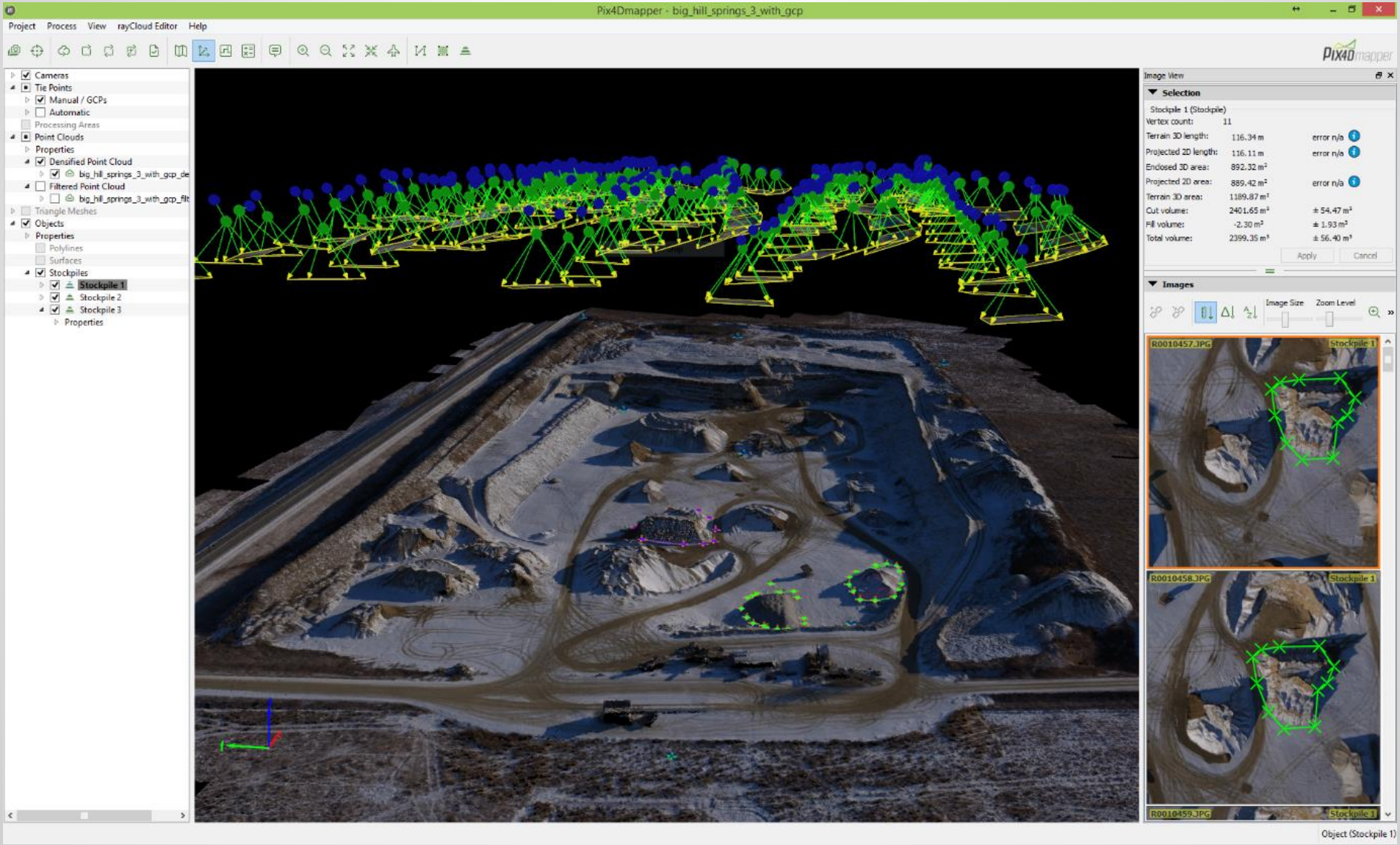
Microsoft Azure

amazon web services™

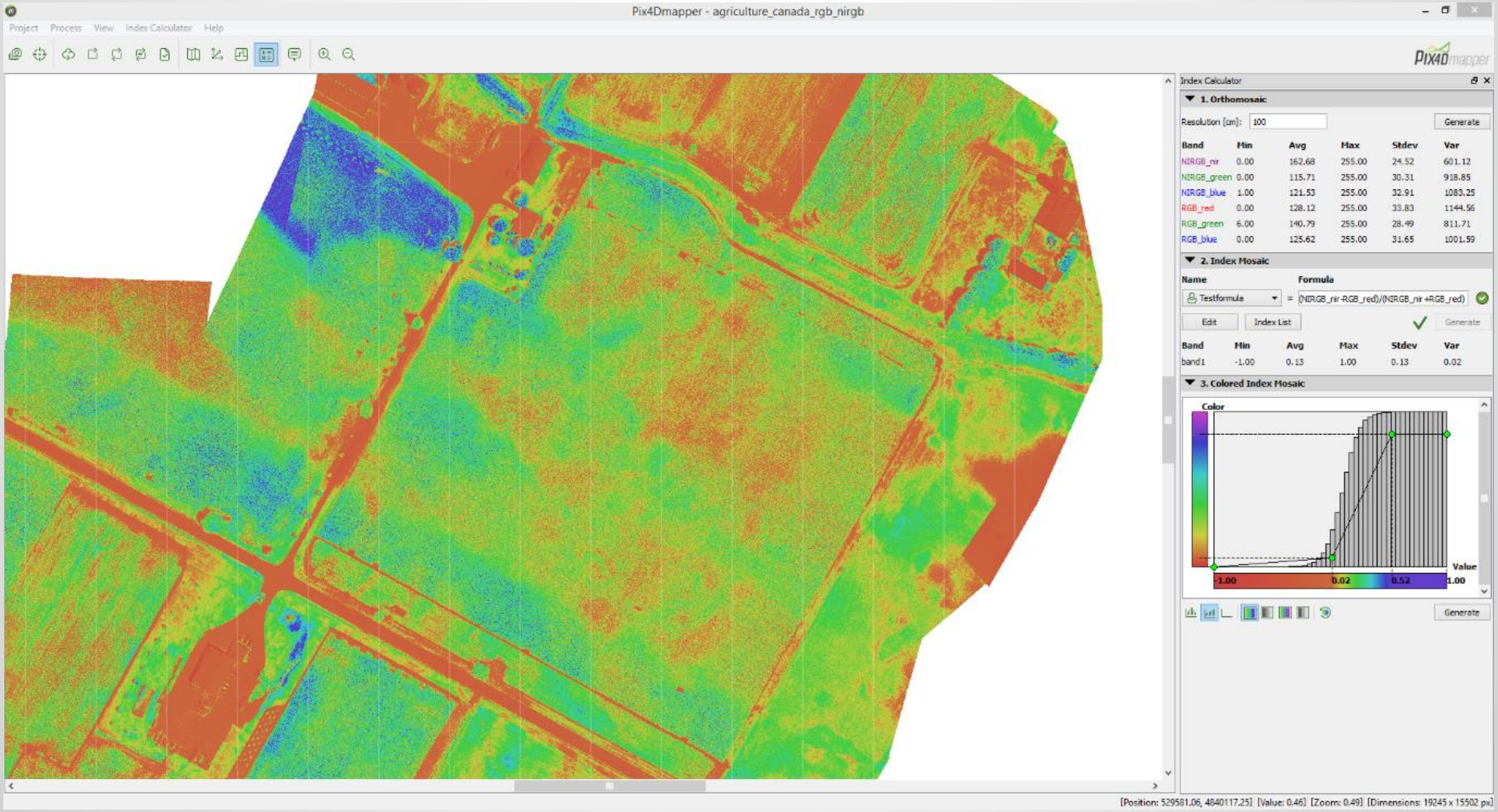
Linux™

PIX4D pro mapper

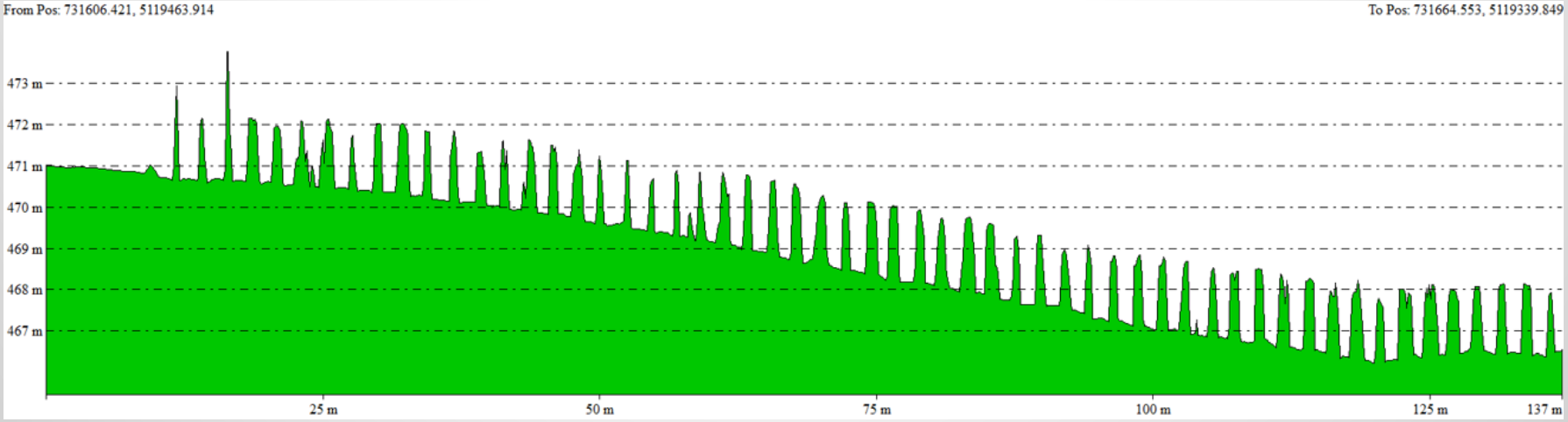
Land development needs frequent estimations



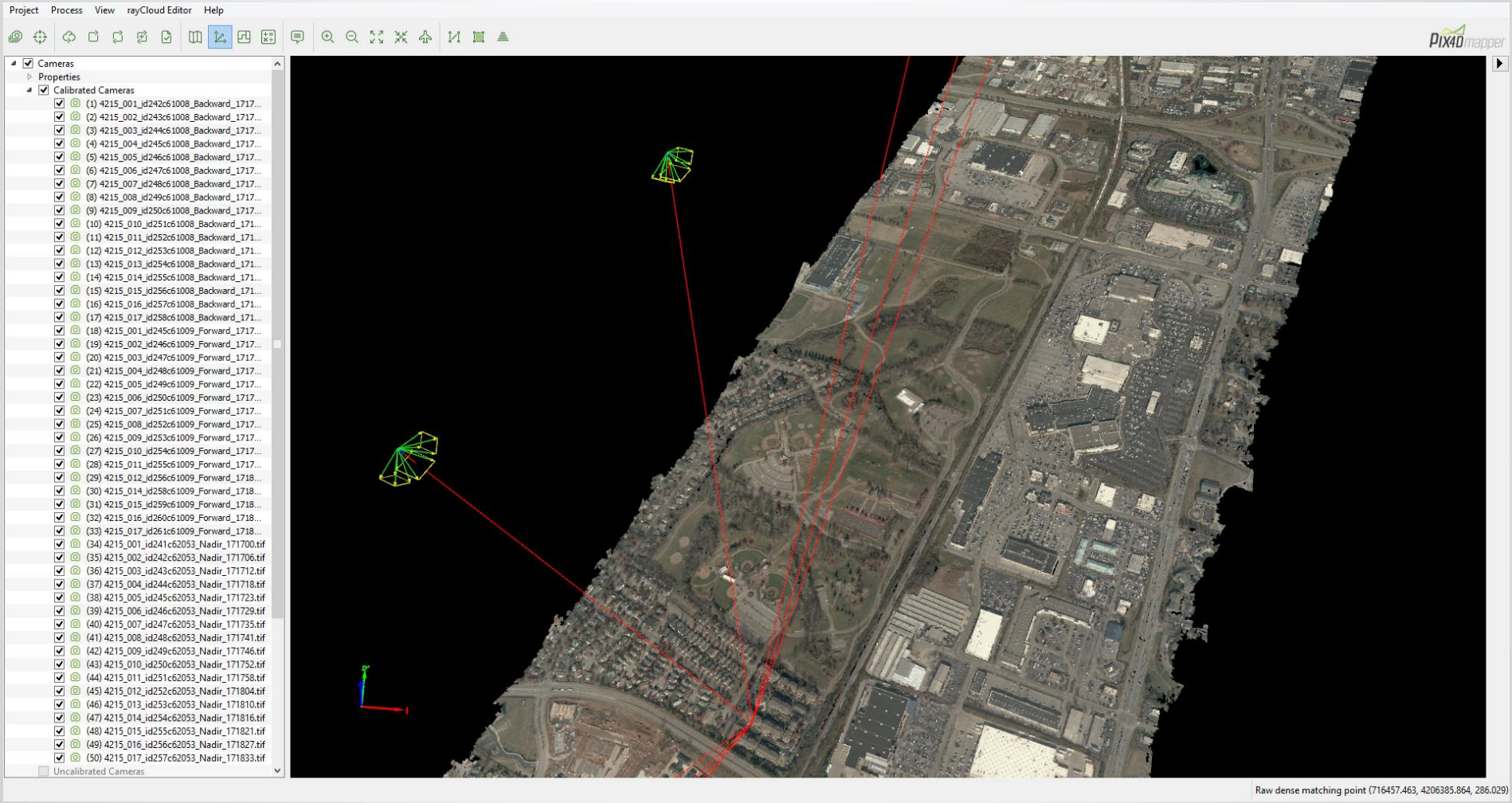
Farmers need to inspect



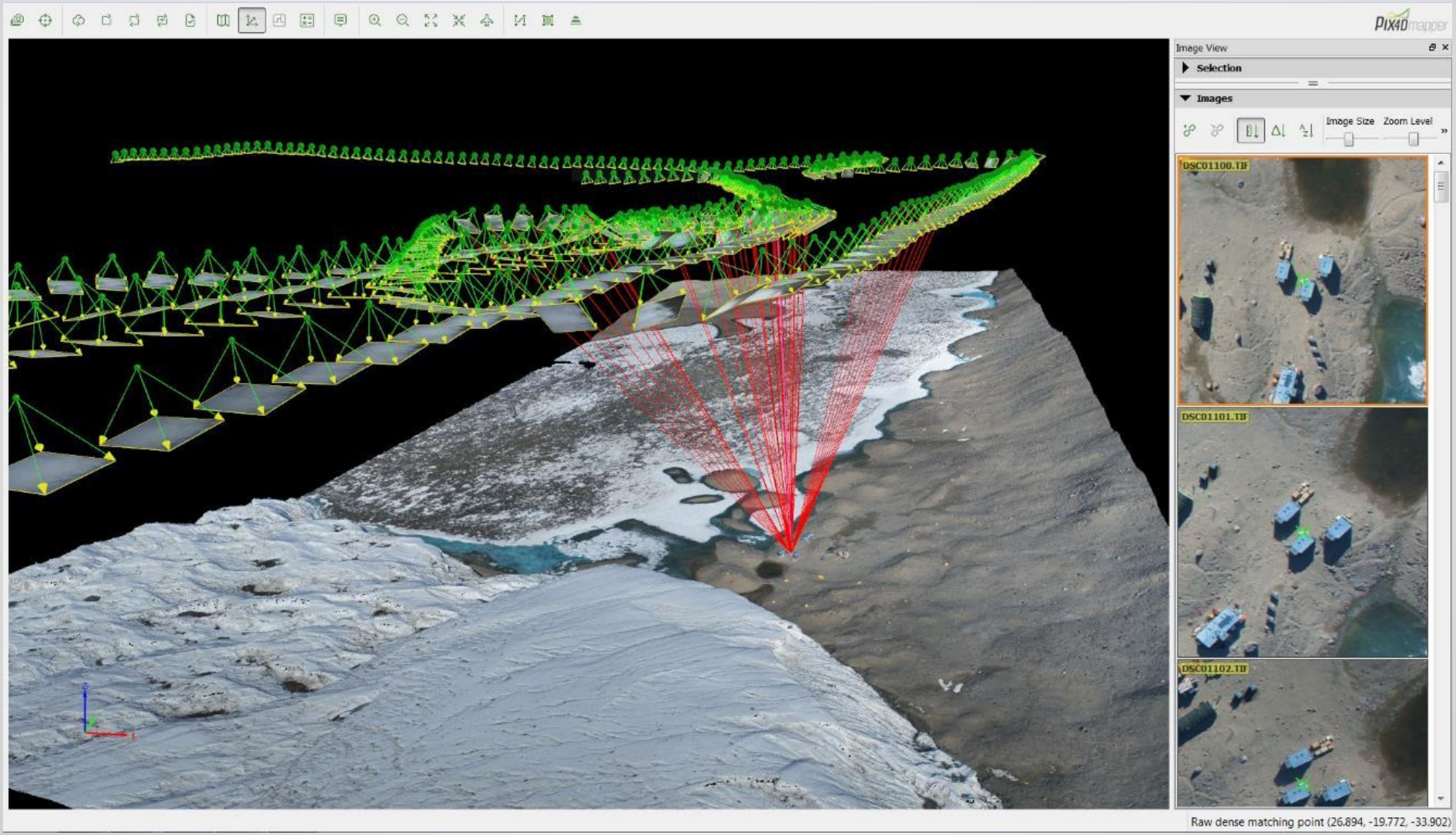
Farming 3D observation



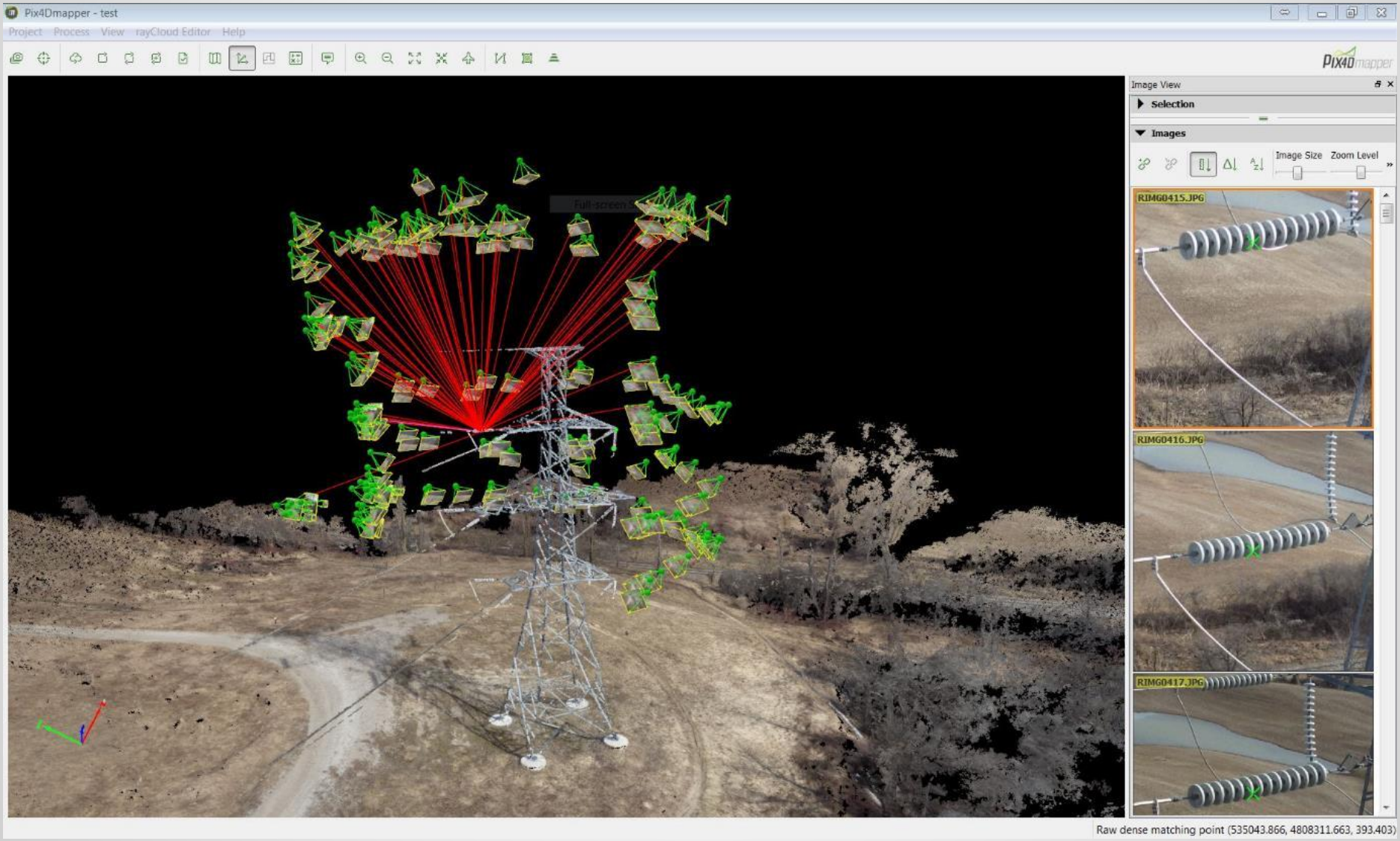
Land development is being planned



Environmentalists need to assess



Powerlines need to be maintained



Video: Construction Data Archiving

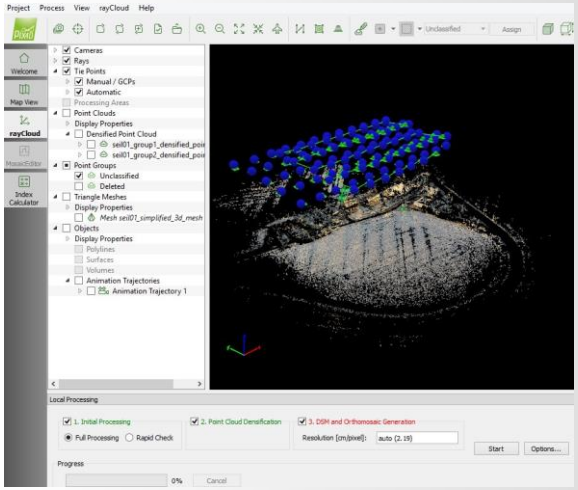
WorkFlow

Workflow

Fly

Capture

Process



PIX4D
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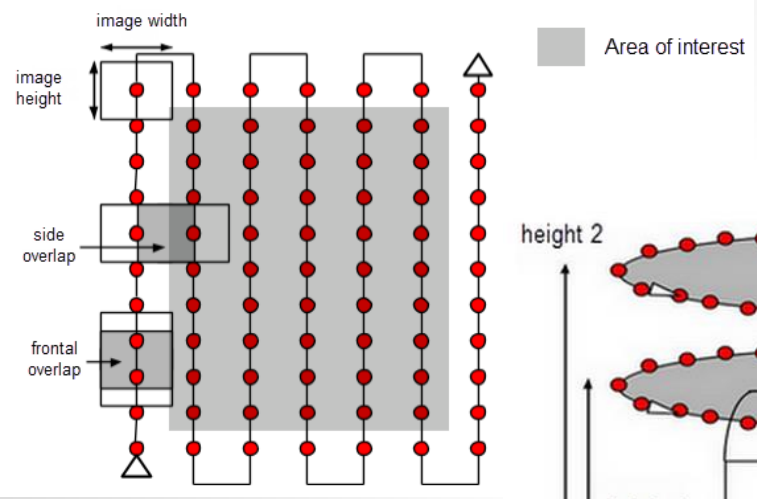
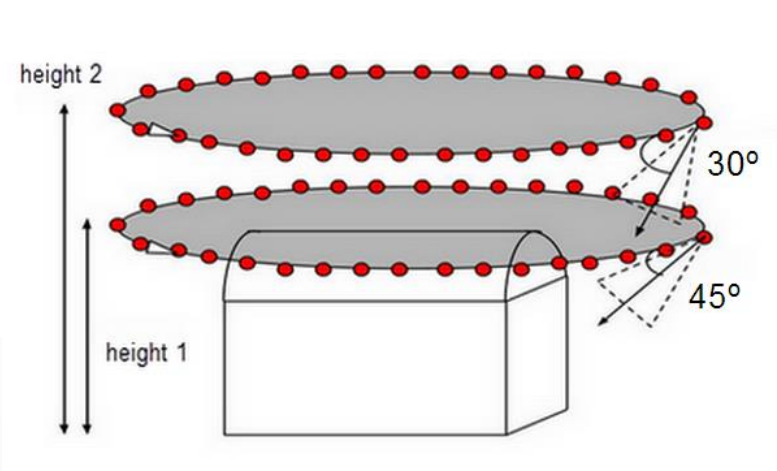
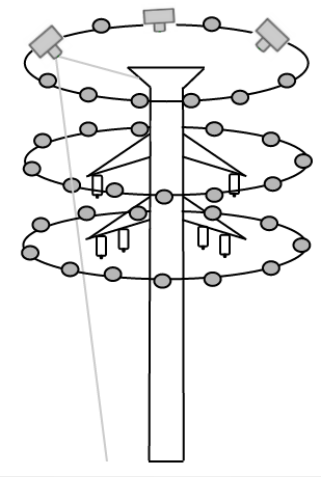
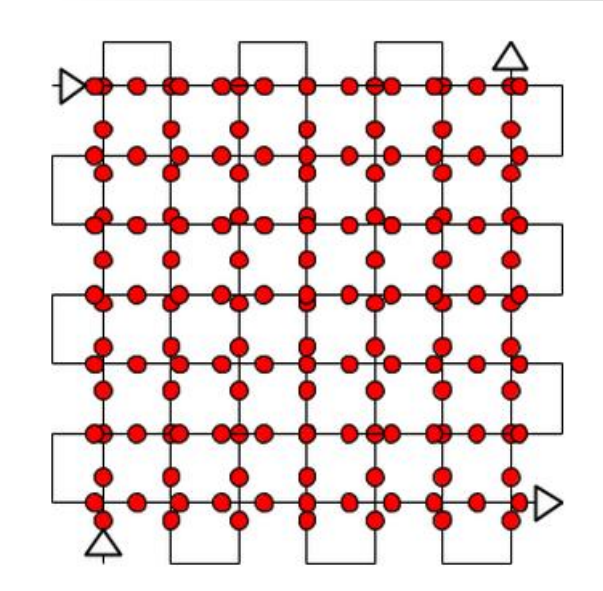
Capture: Flight

- Consistency of overlap and flight lines
- Frontal overlap of 75%, side 65%







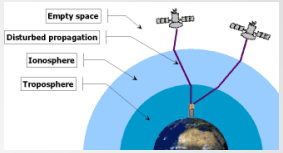


Support.pix4d.com

Positioning and Accuracy

GPS Consumer Grade

Noise (1m) + Global Shift (5m)



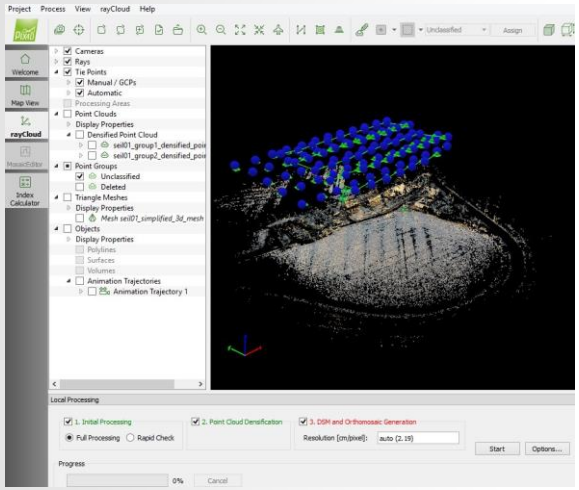
Ground Control Point

Differential GPS / RTK

PIX4D
simply powerful

Process

Process



0. Check image capture

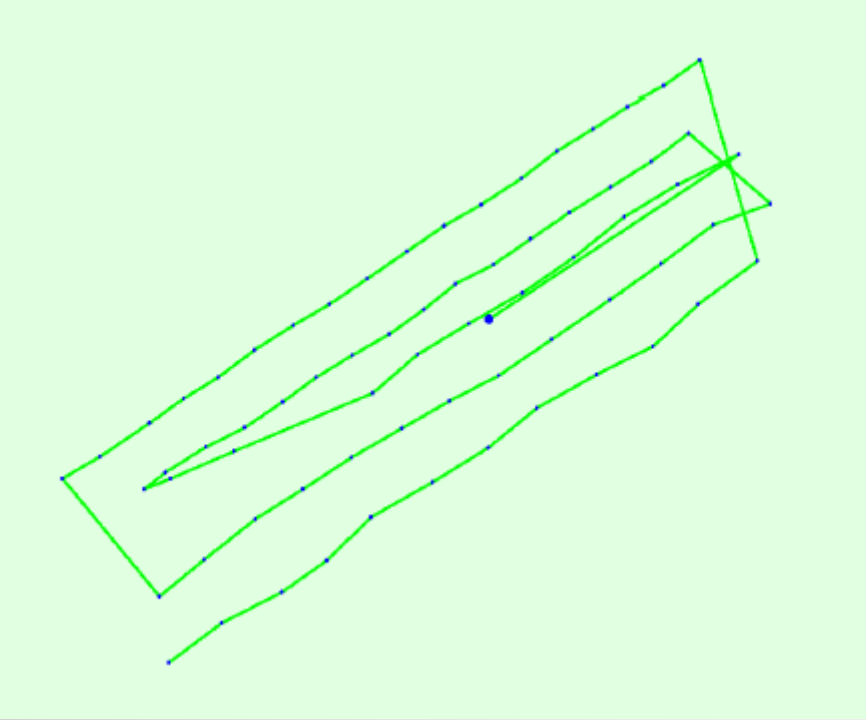
Field Checking

Quality Report

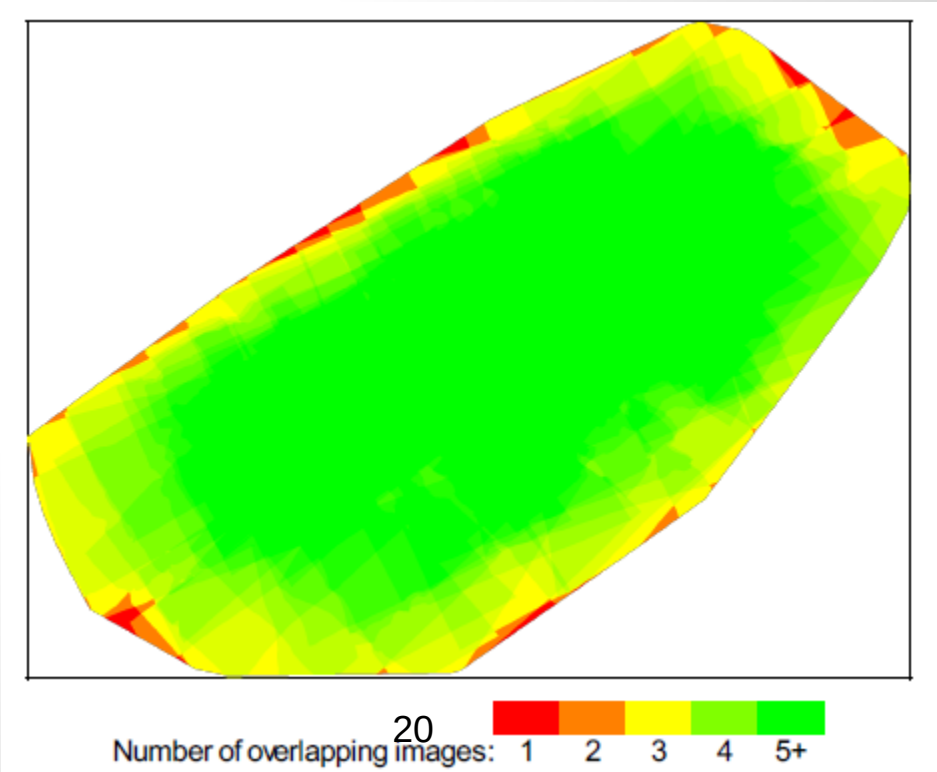
PIX4Dmapper

Generated with version 1.2.69

Flight Path



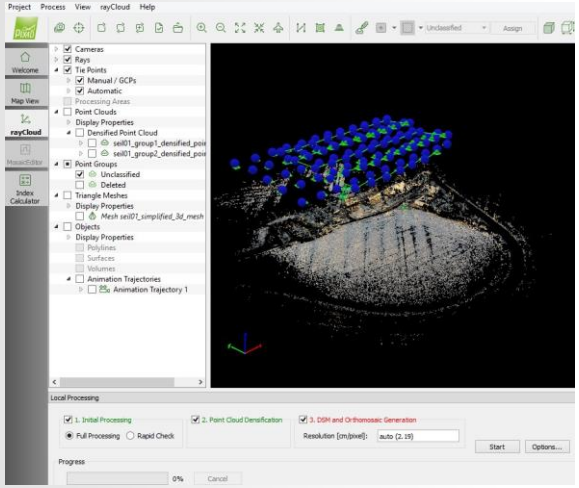
Overlap



Quick Look

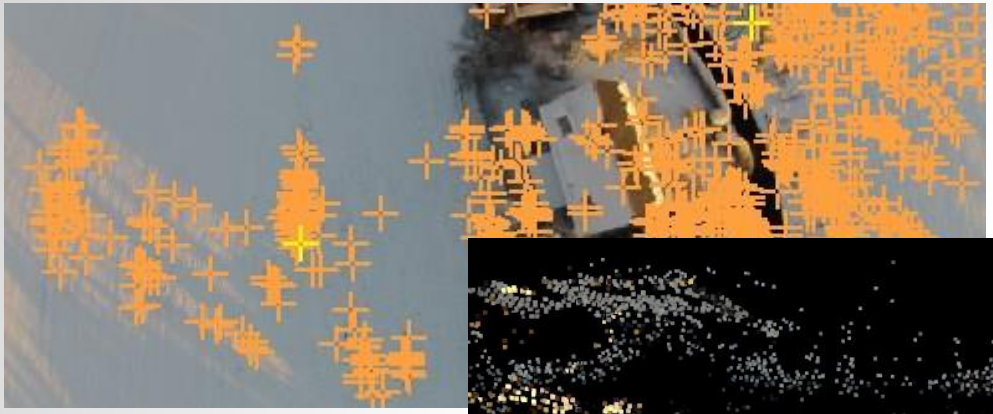
Low Resolution 2D Map

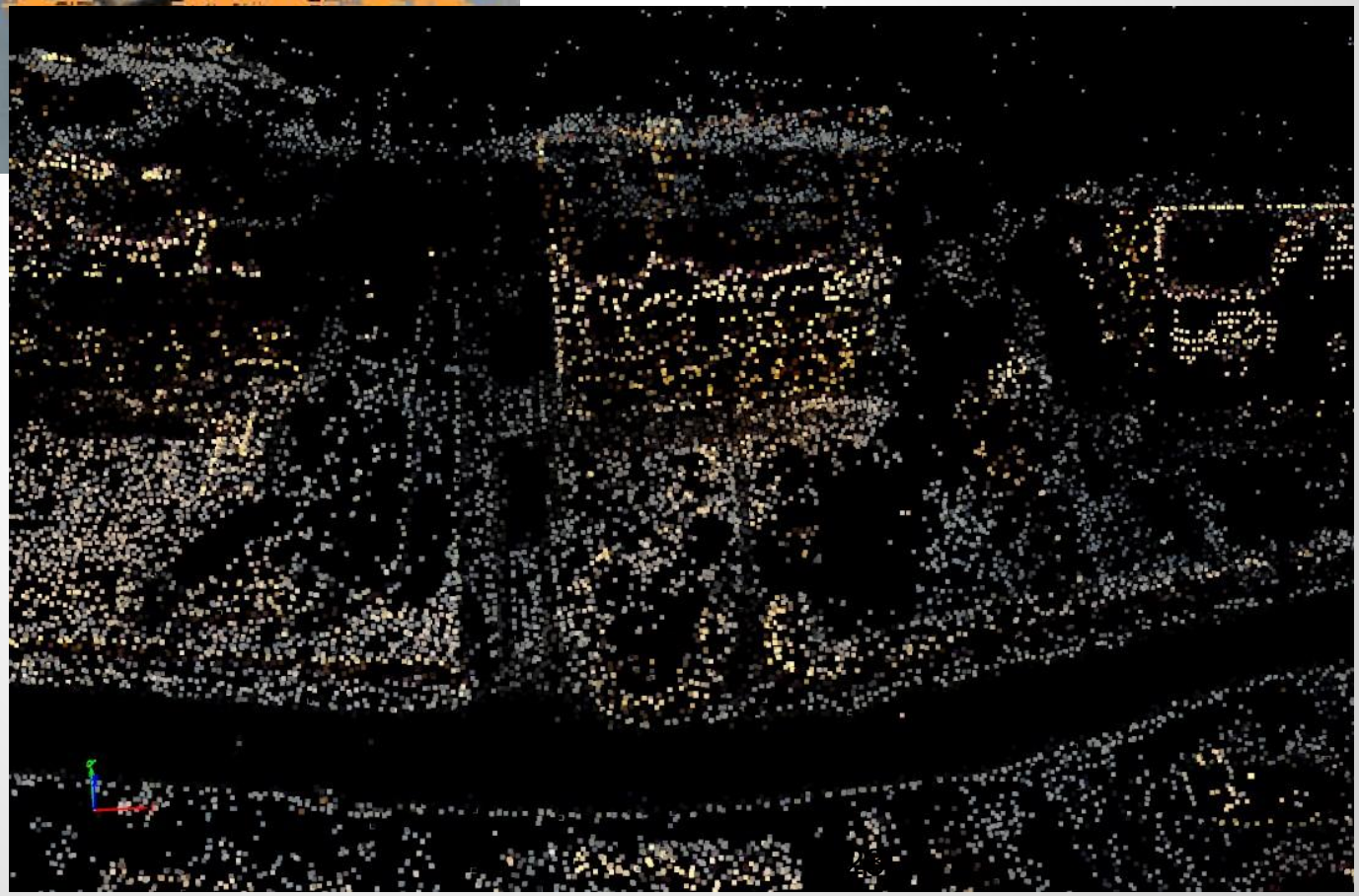
Process



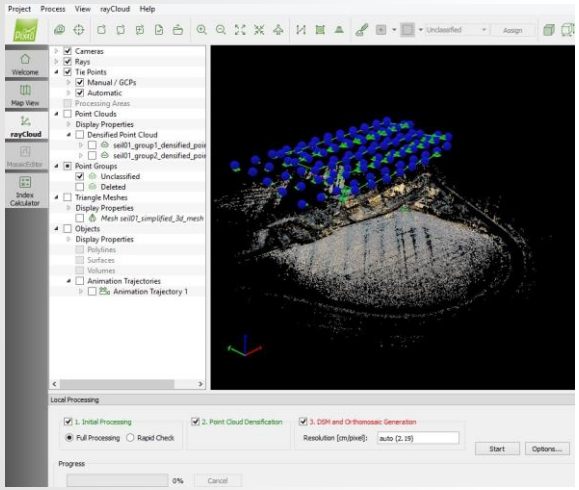
1. Features Matching

Processing: features matching



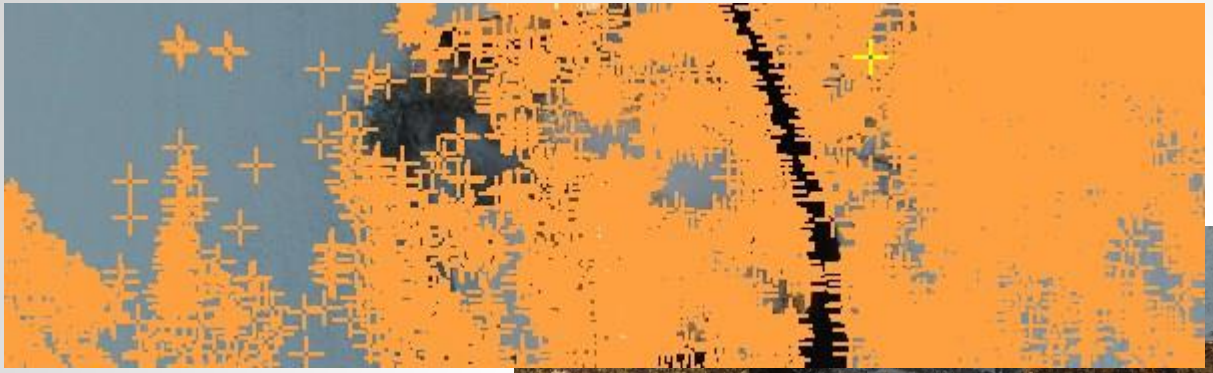


Process

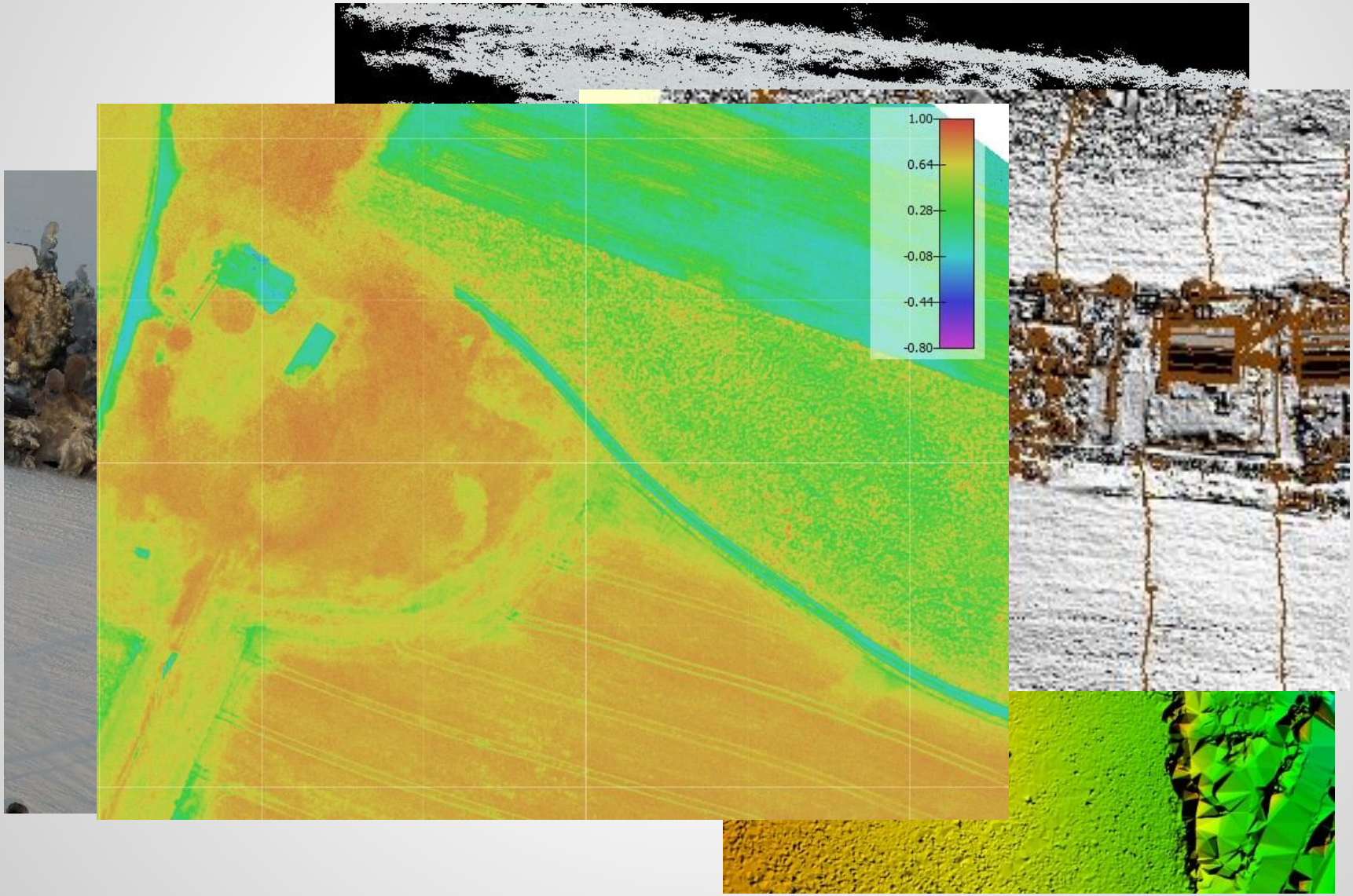


2. Densification

Processing: densification



Create Outputs



Create Outputs

Orthomosaic

Breaklines

Digital Elevation Model

Volumetric Calculation

Point Cloud

Contour map

Radiometric DVI

Digital Terrain Model

Triangulated Mesh

Virtual Camera
Fly Through

Manual reconstruction

PIX4D
simply powerful

Formats

AutoCAD

ESRI ArcGIS

GeoTIFF

Ag Leader®

MapBox

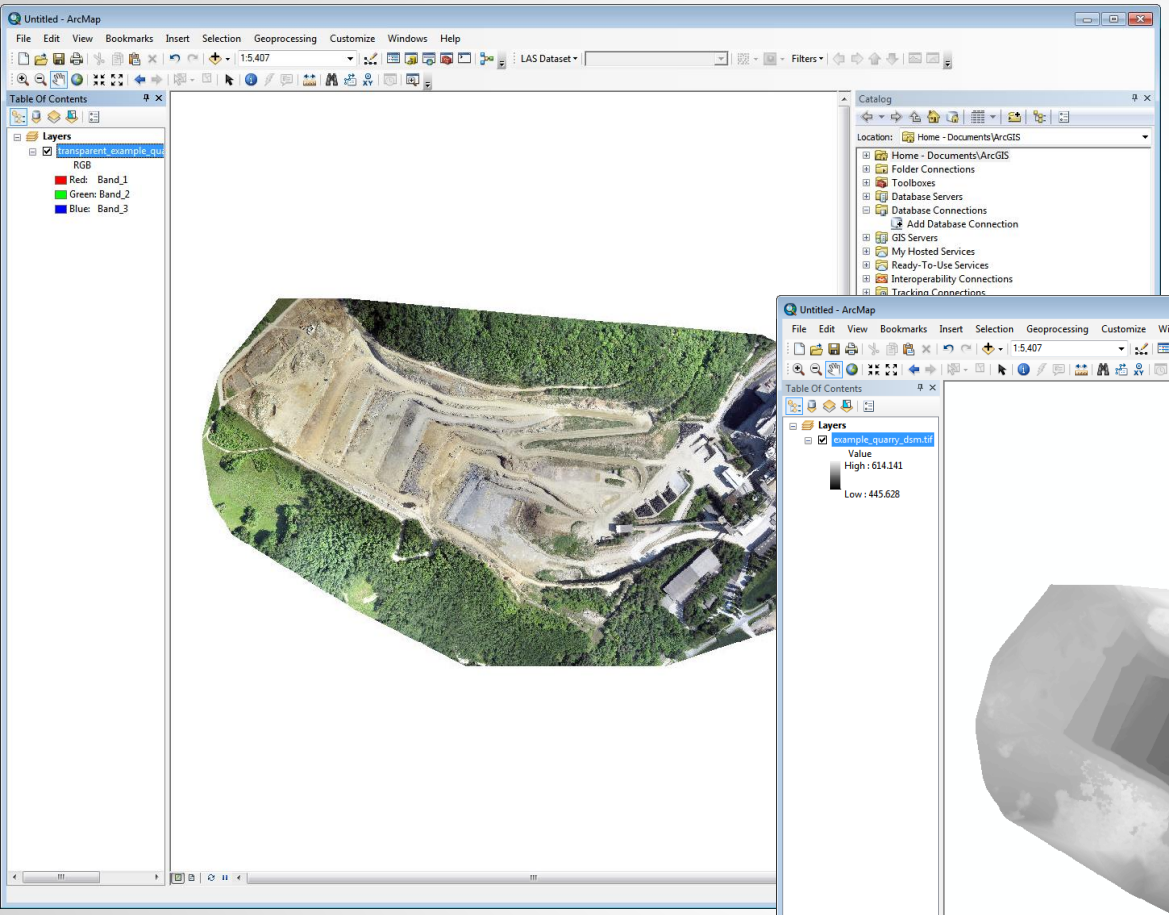
Point Cloud
LAS

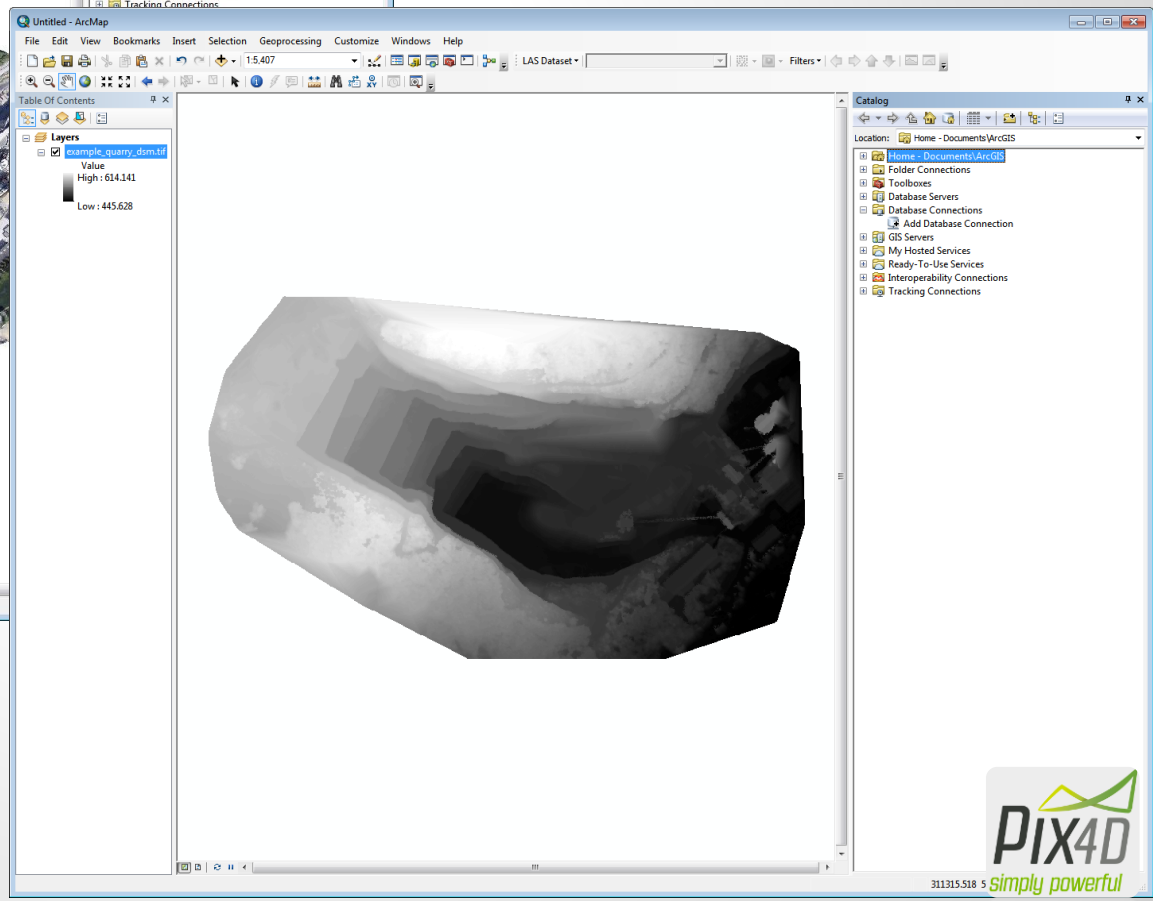
FARM WORKS® SOFTWARE
A DIVISION OF TRIMBLE

Google earth

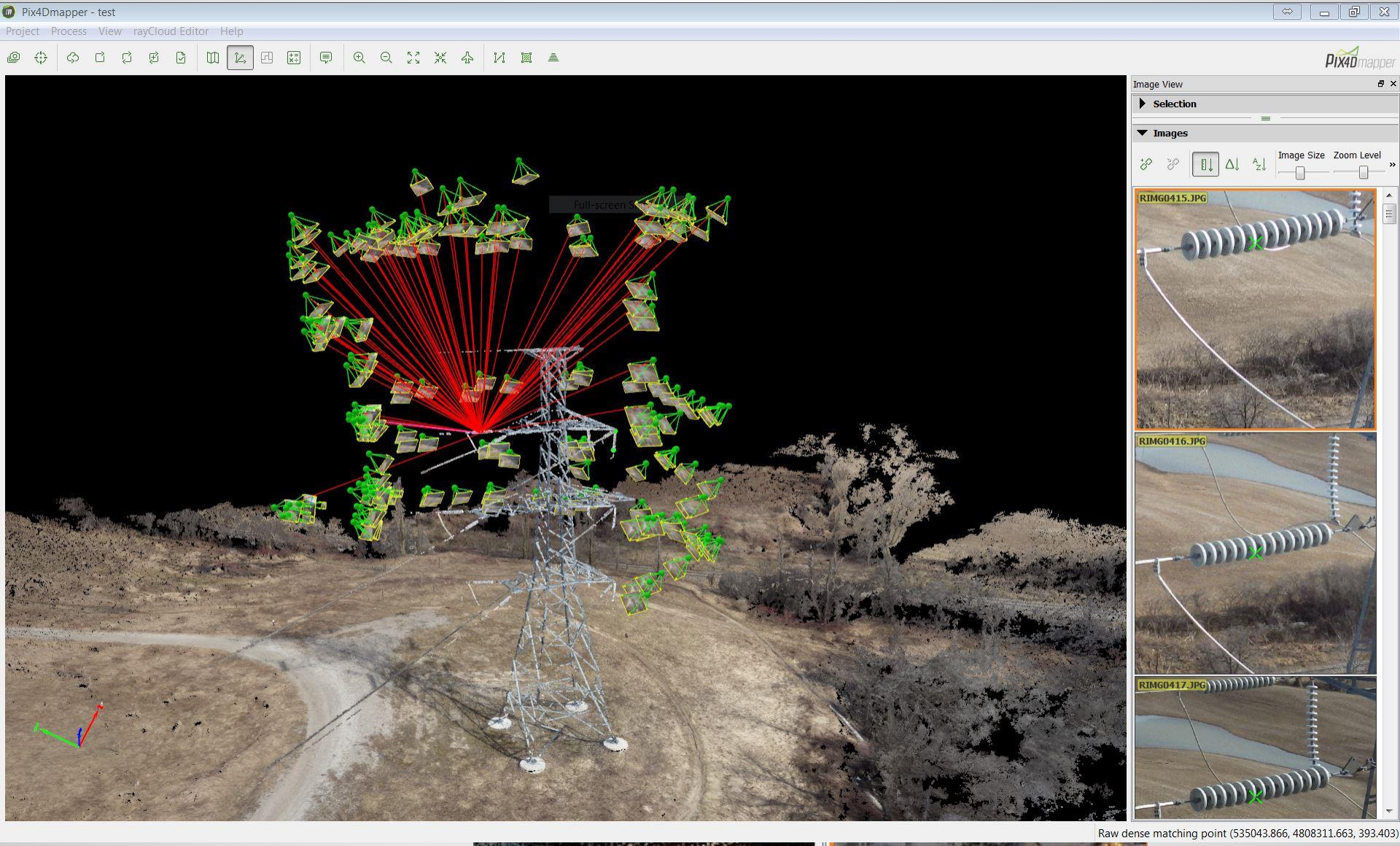
PIX4D
simply powerful

ArcGIS Integration





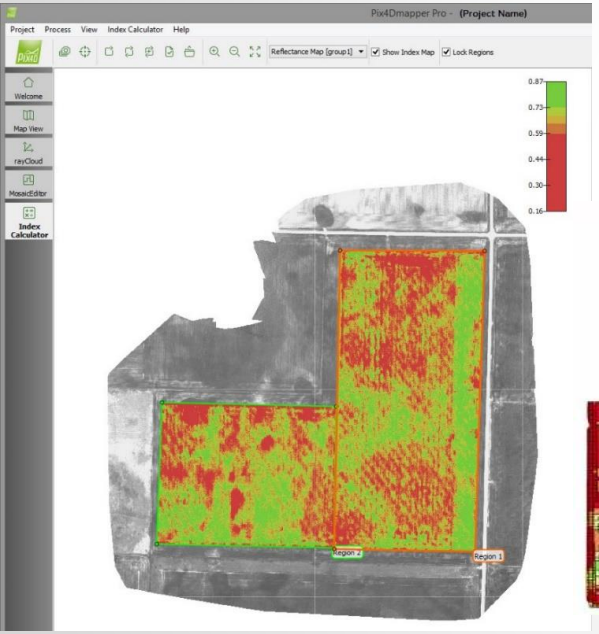
Customize

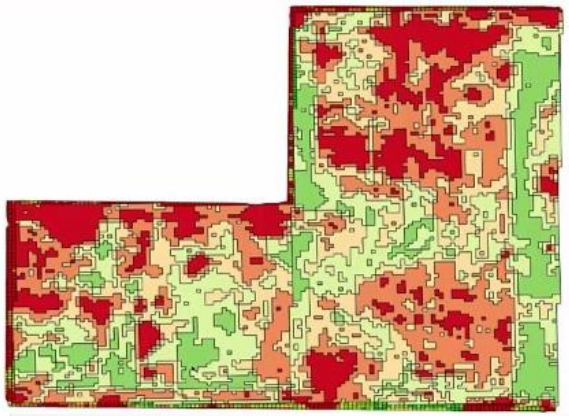

Pix4Dmapper - test
Project
Process
View
rayCloud Editor
Help
Pix4Dmapper
Image View
Selection
Images
Image Size
Zoom Level
RIMG0415.JPG
RIMG0416.JPG
RIMG0417.JPG
Raw dense matching point (535043.866, 4808311.663, 393.403)

Precision Agriculture

From Drones to Tractors

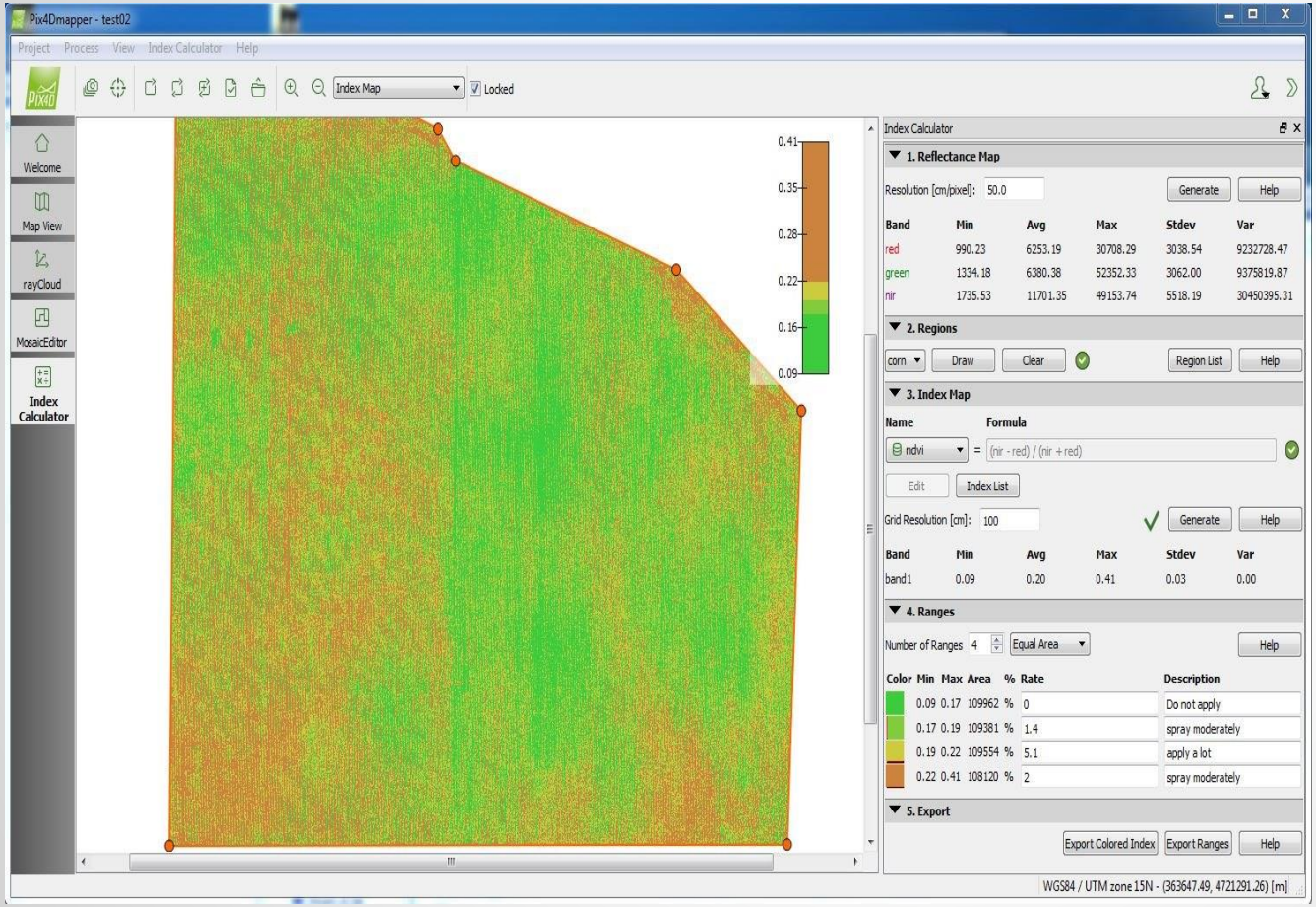
- New Index calculator
- New workflow, co-developed with senseFly
  - Radiometric calibration UI
  - Regions management
  - Index calculation (NDVI)
  - Classes with semantics (Interpretation)
  - Shapefile map export





Fly + Process + Scout + Refine & Interpret
+ Output to Tractor

New Features



NIR, red edge, multispectral Radiometric calibration

Analysis per crop variety

Index formula editor
- NDVI, DVI, ...

Application map
- Automatic segmentation
- Annotation of decisions

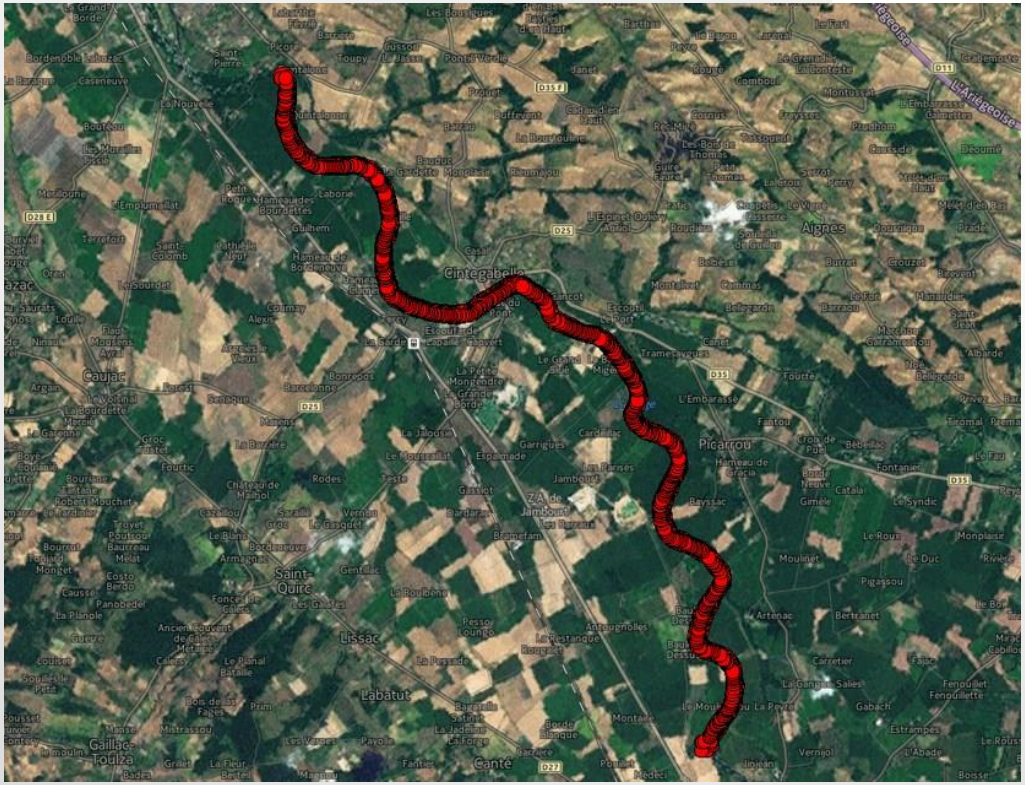
PIX4D simply powerful

GIS Projects Examples

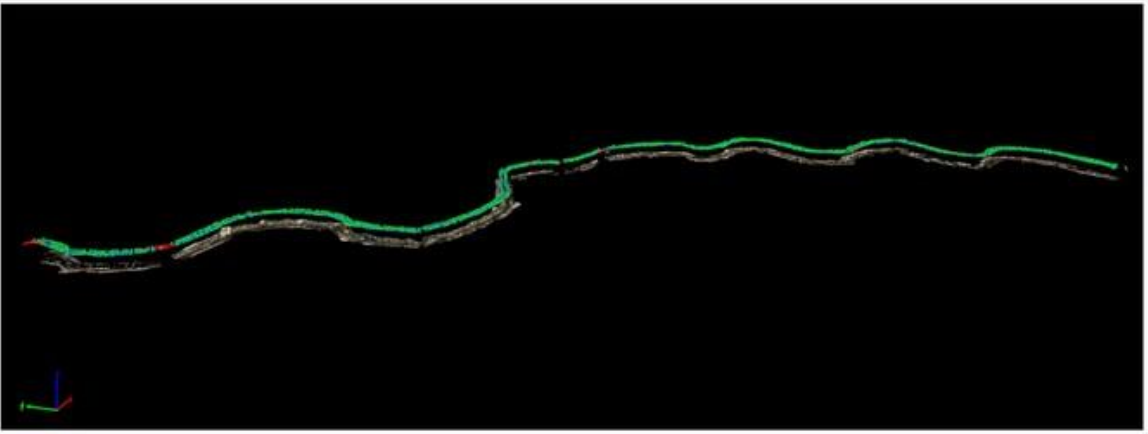
Riverbank Flood Analysis, Trees Clearing

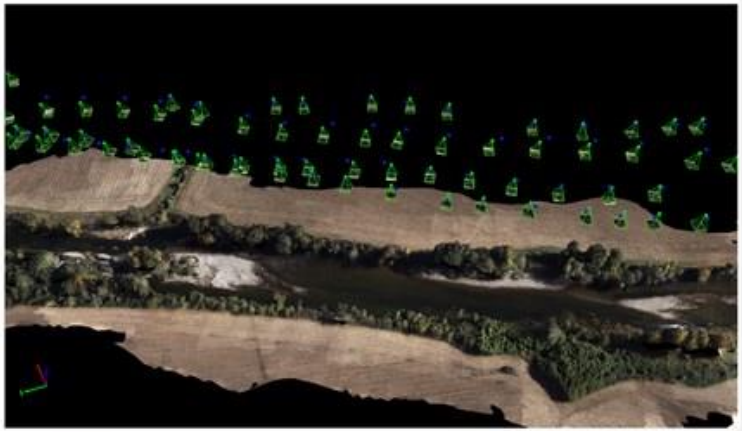
PROJECT INFO

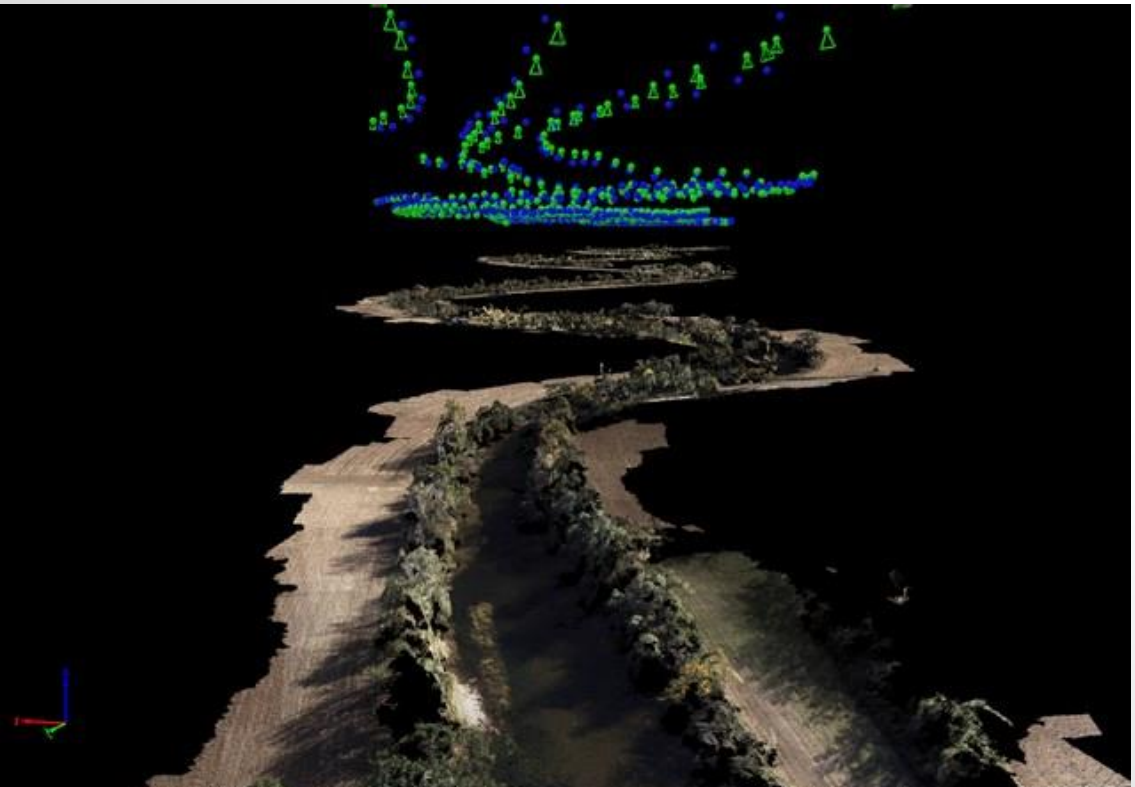
Company:	Delair-Tech
Country:	Toulouse, France
Industry:	Emergency Response
Project date:	November 2014
Project Manager:	David Seguela
Client:	French Department of Territory Management
Equipment:	DT-18 UAV from Delair-Tech packaging with a DT 3-band RGB sensor
Project Dimension:	360 Hectares / 1992 images / GSD: 4.12 cm

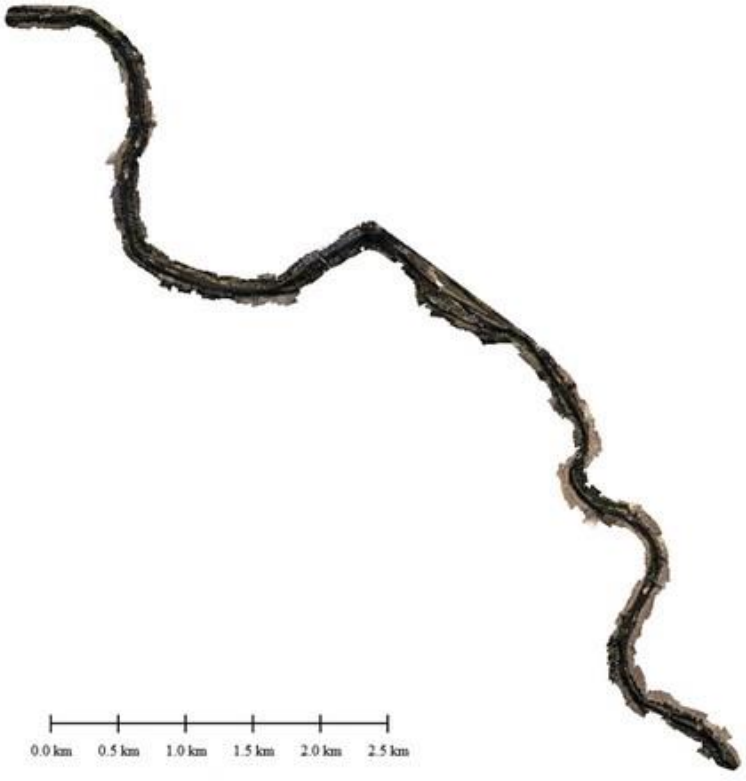


Riverbed – Flood Analysis, Trees Clearing









Landfill Monitoring

PROJECT INFO

TerraPAC Imagery
AERIAL PHOTOGRAPHY

Organization Name:	TerraPAC Imagery
Country:	Hawaii, The United States
Industry:	Mines and Quarries
Project date:	3 phases from January 2013 to January 2014
Project Manager:	David Harrington
Equipment:	A glider with Canon 5D Mark II onboard
GSD:	10 to 12 cm
Website:	www.terrapacimagery.com

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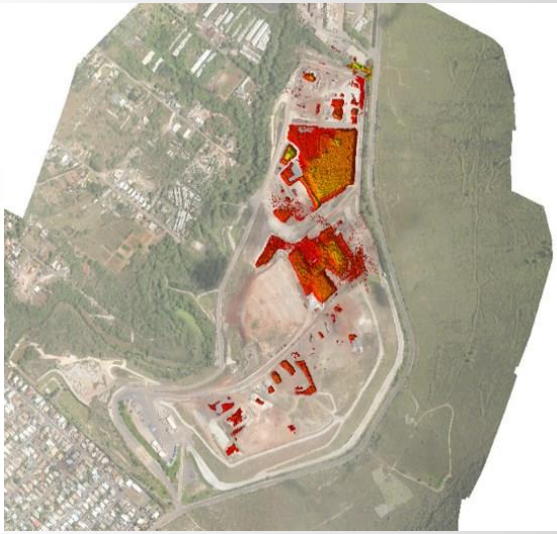
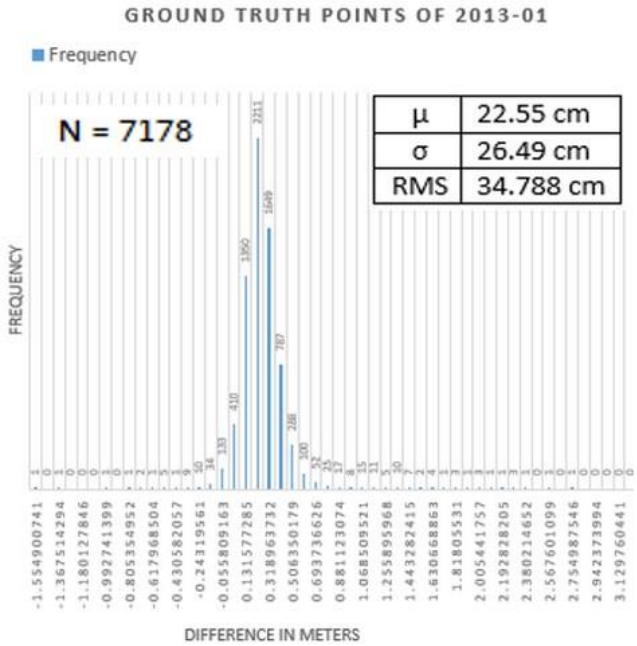
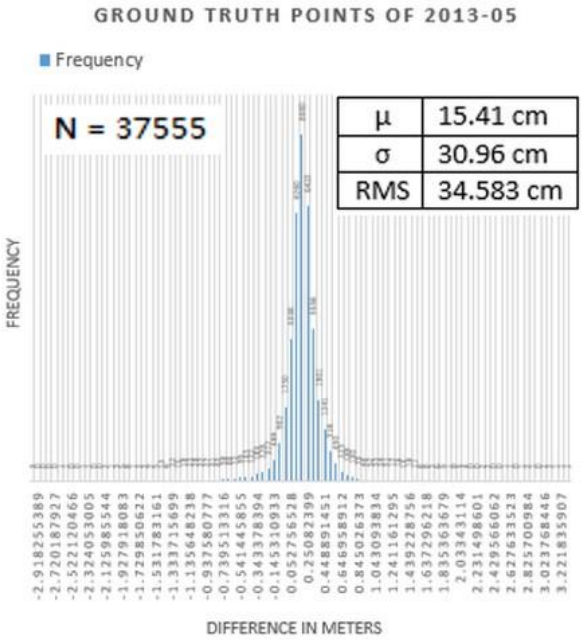
simply powerful

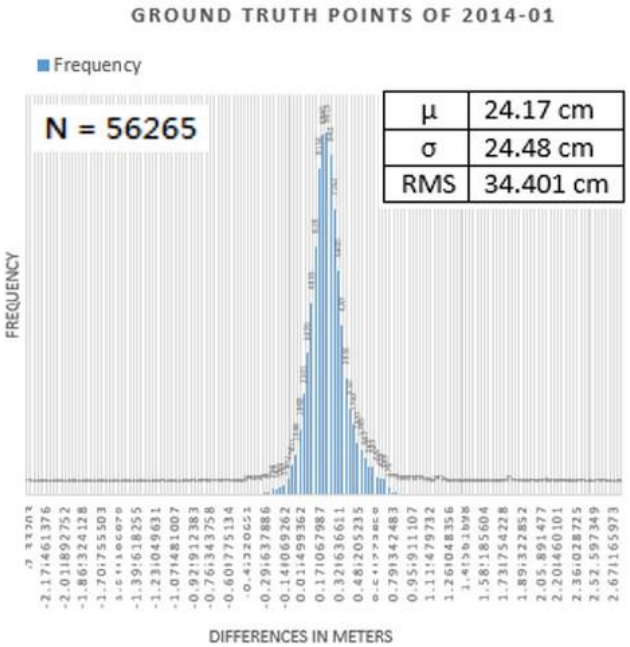
Landfill Monitoring

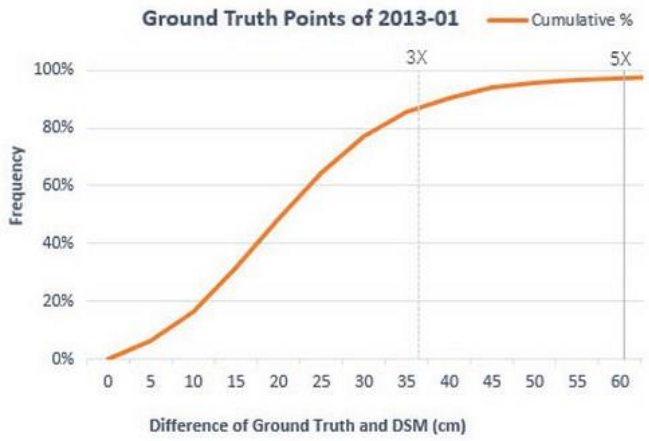


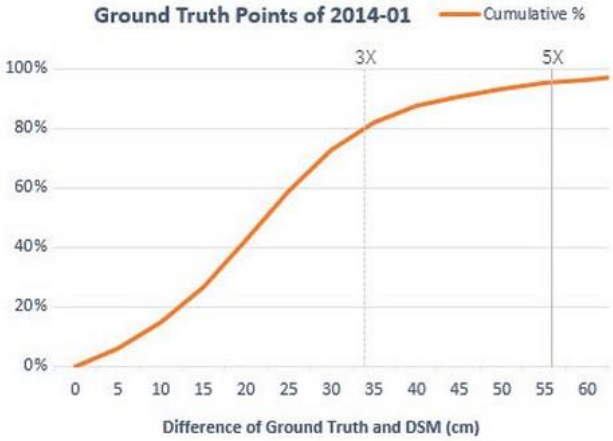
Landfill Monitoring











Landfill Monitoring

Conclusion

Making UAVs a solution

Serving professionals

An input for geospatial analysis

UAVs becoming easier to use

PIX4D
simply powerful

Map Now

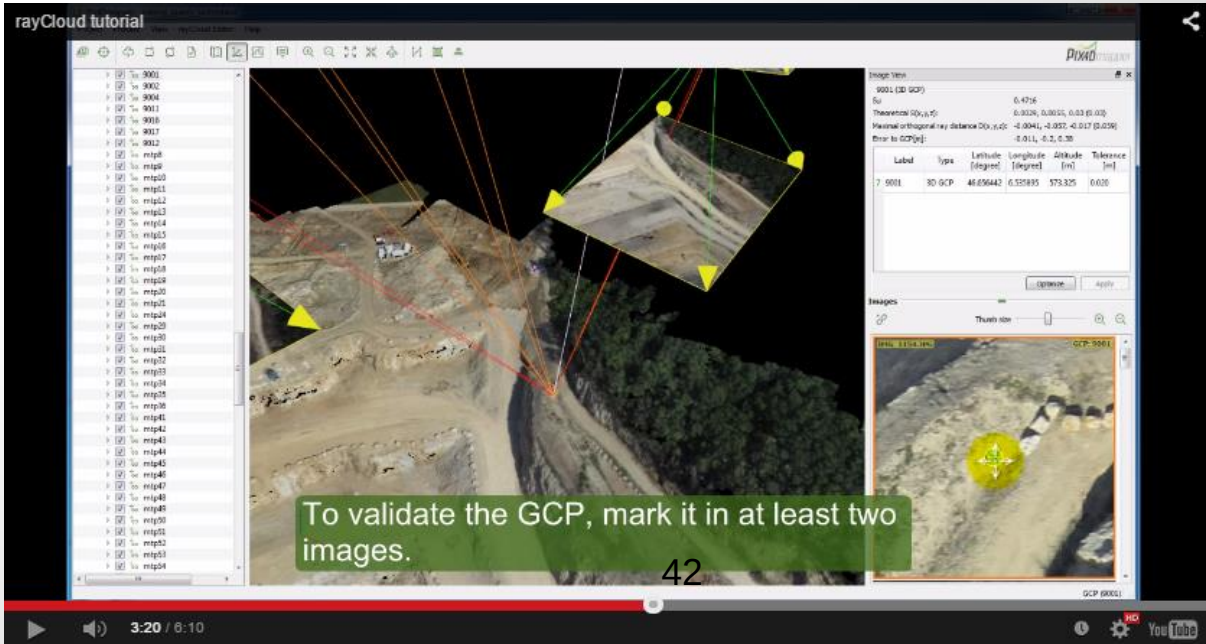
Discover automated modeling with Discovery (FREE!)

Use our sample UAV images to process on your own

Learn how to improve your flight by processing

Our Knowledge Base is free and accessible

Topic-specific tutorials



Start today with Pix4Dmapper Discovery

www.pix4d.com

Thank you

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