

**RUIDE**



**SkyPhoto**

A Professional Desktop Solution for Aerial Photogrammetry



**SKYSOLUTIONS**



Co-developed with some professionals from Wuhan University, ranking top in Asia's geo-spatial industry area and academic field

A sophisticated solution with remarkable accuracy, flexibility, usability and productivity

Designed for transforming low-altitude aerial images or satellite imageries into digitized outputs

A highly-integrated system with modularized functionalities and intellectualized settings

Engineered to meet the demands of both specialists and beginners

A variety of specialized options for diverse marketing purposes

## Intelligent GCP Matching

The system automatically predicts the locations of all other GCPs after the 4 corner points are manually matched, from which you might go straight forward instead of spending much time finding the GCP marks from the original images.

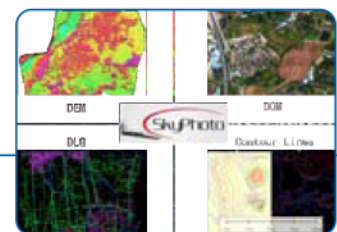
## DLG Mapping Production

The DLG module in SkyPhoto-advanced is particularly developed for line graphic mapping productions, which are demanded to keep the geo-spatial interrelationship and related property information of all elements.



## Systematic & Integrated Approach

The software offers a one-stop solution of generating consistent and accurate orthomosaic, point cloud, DEM, DSM, DOM, TDOM, DLG, etc. that all you need for data productions.



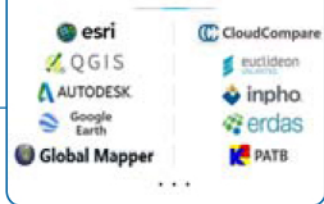
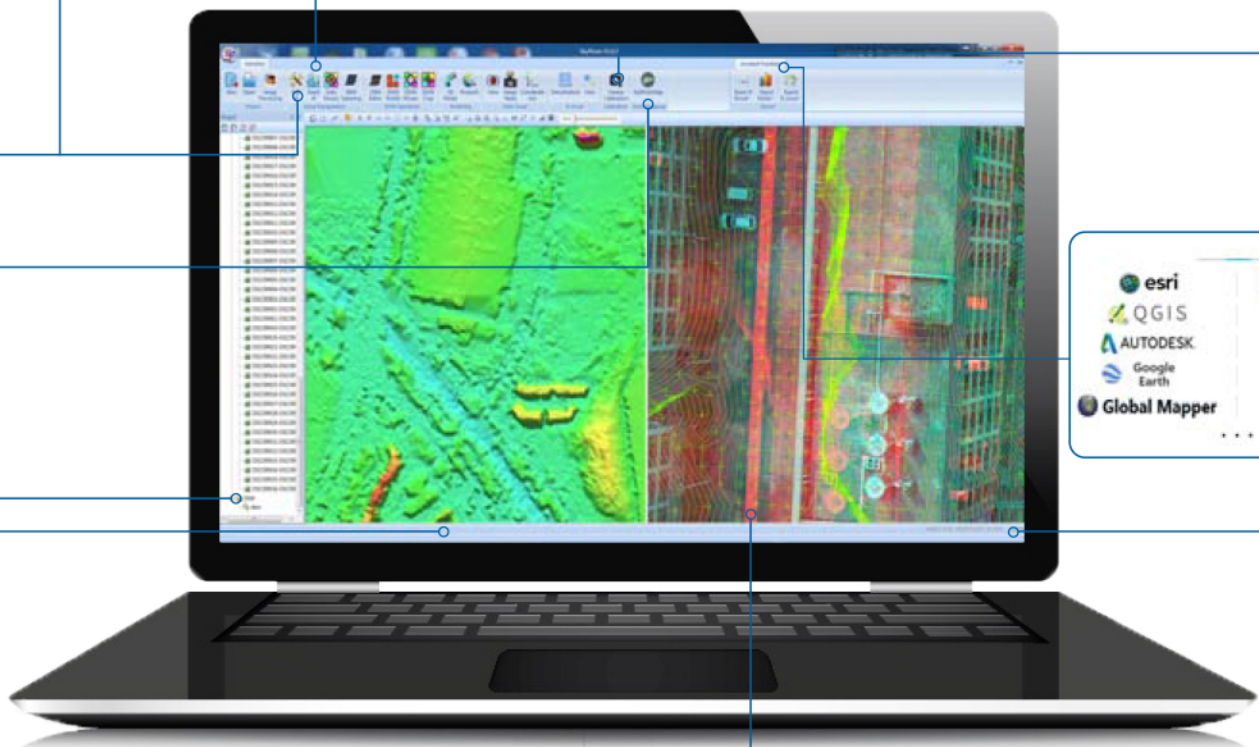
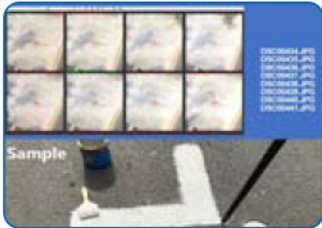
| System Requirements       |               |  Desktop |  Laptop |
|---------------------------|---------------|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Operating System          |               | 64-bit Win7/Win10 Professional Edition                                                      |                                                                                              |
| Recommended Configuration | CPU           | 64-bit Intel multi-core processor, i7 or E series                                           |                                                                                              |
|                           | RAM           | 16 GB or above                                                                              |                                                                                              |
|                           | Hard Disk     | 2 TB or above                                                                               | 1 TB or above                                                                                |
|                           | Graphics Card | NVIDIA GeForce GTX 750 or above                                                             | NVIDIA Quadro Series (preferable) / NVIDIA GeForce GTX 960M or above                         |
| Minimum Configuration     | CPU           | 64-bit Intel multi-core processor, i5 series                                                |                                                                                              |
|                           | RAM           | 8 GB                                                                                        |                                                                                              |
|                           | Hard Disk     | 1 TB                                                                                        | 500 GB                                                                                       |
|                           | Graphics Card | NVIDIA GeForce GTX 480                                                                      | NVIDIA GeForce GT 940Mx                                                                      |

# A Professional Desktop Solution

## FEATURES

### Smart Aerial Triangulation

The fast matching of feature points is very little restricted and quite friendly to tough cases with poor overlapping percentage, skyway deviation or sparse textures.



### True DOM Output

TDOM, modeled from the rectified DSM, presents more comprehensive and precise geo-referenced information to better demonstrate the true terrain and ground objects. The software can output TDOMs after point cloud densification, yet no manual corrections are required.



### Interactive Operation Performance

The outputs are further editable for refined effects as the system provides plenty of human-computer interactive interfaces, like DEM/DOM edit, etc.



# for Aerial Photogrammetry

SKYSOLUTIONS



## Optimized Matching Principle

The Semi Global Matching of Pyramid Hierarchical Principle (PH-SGM) plus the global optimization strategy contributes to feature points matching by pixels, layers, or images at high speed.

## Camera Calibration Module (tailored to high precision mapping)



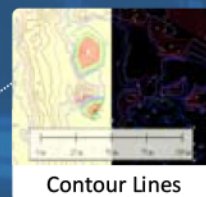
An individual module for camera calibration, including system calibration and self-calibration, is perfect to deal with projective distortions and acquire spatial 3D information of the correlative 2D object coordinates.

## Compatible Data Formats

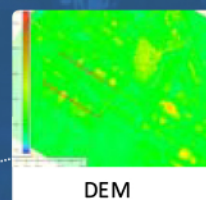
A variety of the impressive deliverables (.tif/.dxf/.dat/.xyz/.las/.obj/.wrl/...) are available, which are compatible to other professional mapping/GIS/VR/BIM/IDS software (AutoCAD, 3DMax, Civil3D, Revit, ReCap, Infraworks, etc.) popular on the market.

## Extremely Fast Computation

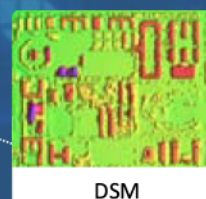
A novel algorithm and multi-core parallel processing method comes up with efficiency optimization for the digitized productions, especially suitable for mass data.



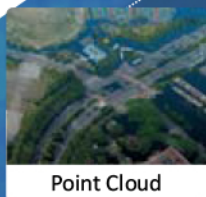
Contour Lines



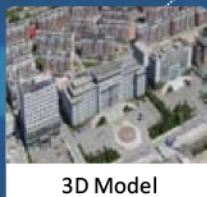
DEM



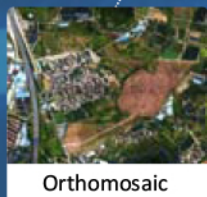
DSM



Point Cloud



3D Model



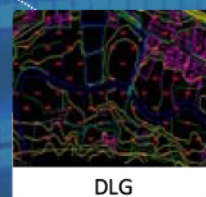
Orthomosaic



DOM



TDOM



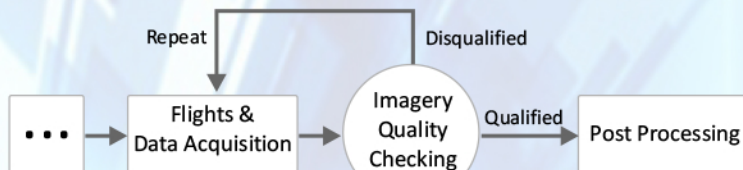
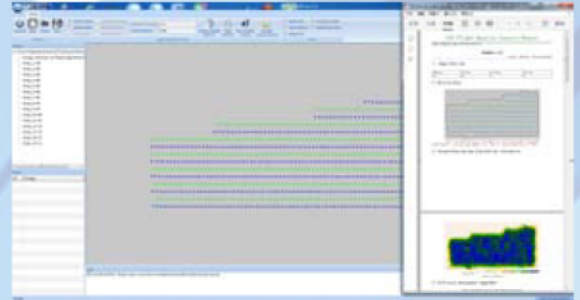
DLG

## OUTPUTS

## HIGHLIGHTS

### ✈ SkyPhoto-QC

- ◆ Designed for checking the qualifications of acquired aerial images for post processing
- ◆ Perfect to be used the first time after drone flights during fieldwork
- ◆ A time-saving and high-efficiency solution for both UAV pilots and post-processing handlers

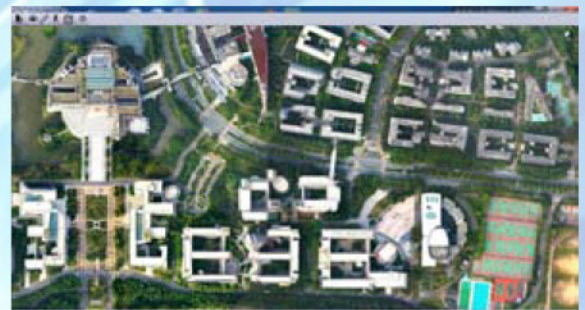


#### Quality Checkpoints

- Imagery usability
- Missed flight zone
- Camera calibration matrix
- POS coordinate information
- Overlap & sidelap percentage
- Overlapped pixels in imagery
- Skyway deviation/yaw angle deviation
- Feature point matching

### ✈ SkyPhoto-lite mosaicing

- Specified for non-professional mapping purposes
- Camera self-calibration enabled to guarantee the output quality
- Several times faster than regular production, up to 2,000 images per hour
- Engineered to immediate response and full view expectation
- Precise distance or area calculation available in panoramagram



#### mosaicing best for,

- ◇ Power Line Inspection
- ◇ Immediate Analysis & Response
- ◇ Traffic Control & Management
- ◇ Resources Investigation & Documentation
- ◇ Urban Planning & Management
- ◇ City Component Updates
- ◇ Environmental Protection & Monitoring

### ✈ SkyPhoto-advanced



DLG (Digital Line Graph), one of the 4 modern digitized mapping productions, is a cartographic map feature represented in digital vector form.

Being collected from geological survey maps and distributed in different scales, DLGs come in optional and Spatial Data Transfer Standard (SDTS) format and are topologically structured for use in mapping and Geographic Information System (GIS) applications. Handwheel and pedal are the typical tools for DLG production.

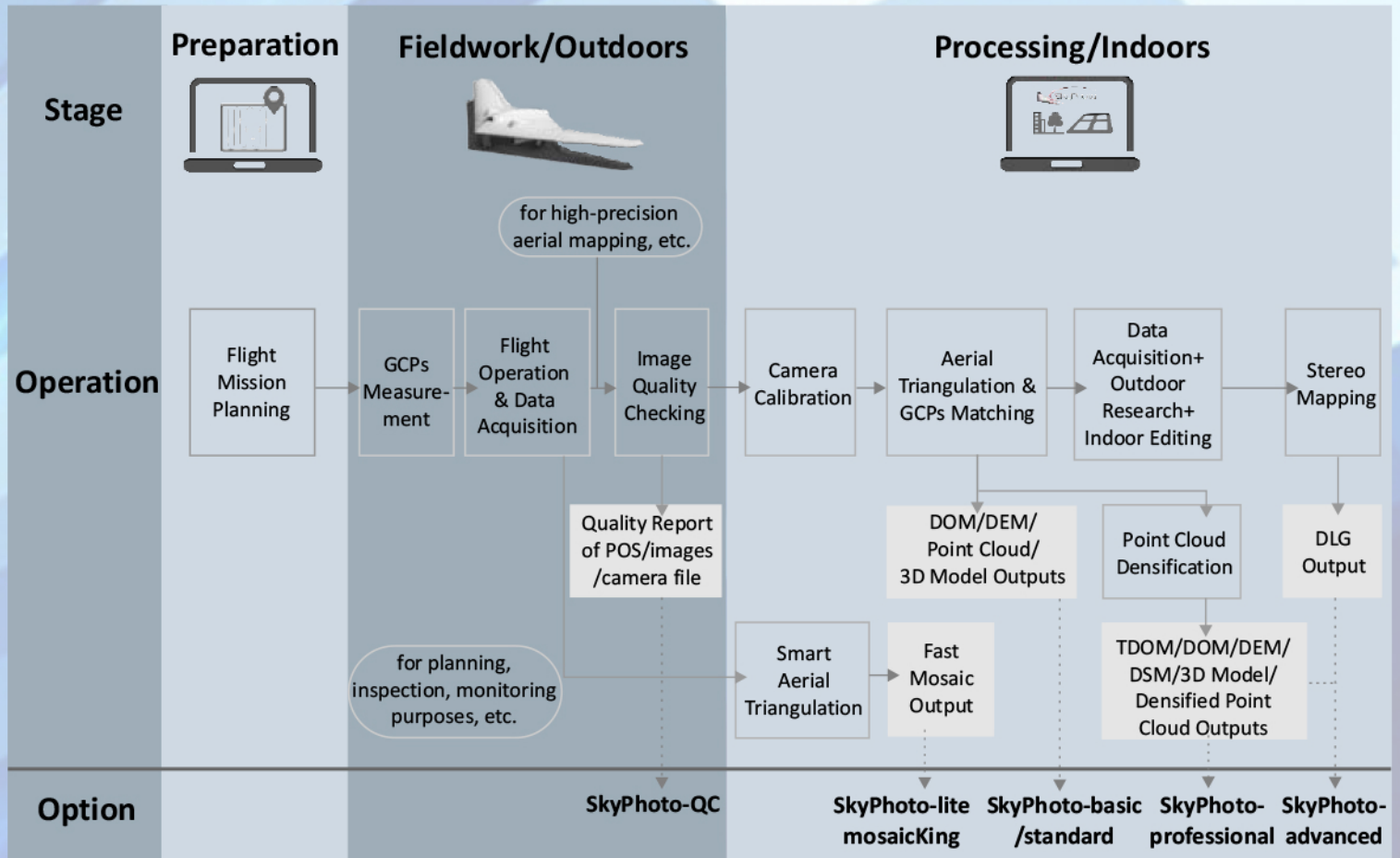


Handwheel & Pedal



DLG Production

## WORKFLOW



| Option                                           | SkyPhoto-QC                                 | SkyPhoto-lite mosaicKing | SkyPhoto-basic                      | SkyPhoto-standard                   | SkyPhoto-professional                                              | SkyPhoto-advanced                                                      |
|--------------------------------------------------|---------------------------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------|
| Definition                                       | Pre-process QC                              | Fast mosaic              | Basic functions                     | Standard functions                  | Full functions                                                     | Extra DLG productions                                                  |
| Camera Calibration                               | X                                           | X                        | √                                   | √                                   | √                                                                  | √                                                                      |
| Aerial Triangulation Export                      | X                                           | X                        | √                                   | √                                   | √                                                                  | √                                                                      |
| GCPs Input Adjustment                            | X                                           | X                        | √                                   | √                                   | √                                                                  | √                                                                      |
| Point Cloud Densification                        | X                                           | X                        | X                                   | X                                   | √                                                                  | √                                                                      |
| Volume/Area Calculation in Densified Point Cloud | X                                           | X                        | X                                   | X                                   | √                                                                  | √                                                                      |
| Precise DEM Editing                              | X                                           | X                        | X                                   | X                                   | √                                                                  | √                                                                      |
| TDOM Export                                      | X                                           | X                        | X                                   | X                                   | √                                                                  | √                                                                      |
| DLG Mapping                                      | X                                           | X                        | X                                   | X                                   | X                                                                  | √                                                                      |
| Output Types                                     | Quality Report of POS/imageries/camera file | Orthomosaic              | Orthomosaic/DOM/DEM/DSM/Point Cloud | Orthomosaic/DOM/DEM/DSM/Point Cloud | Orthomosaic/DOM/DEM/DSM/TDOM/Densified Point Cloud/Simple 3D Model | Orthomosaic/DOM/DEM/DSM/TDOM/DLG/Densified Point Cloud/Simple 3D Model |
| Time Use Limitation                              | Lifetime                                    | Lifetime                 | 1 full year                         | Lifetime                            | Lifetime                                                           | Lifetime                                                               |
| Software Dongle                                  | Required                                    | Required                 | Required                            | Required                            | Required                                                           | Required                                                               |
| Upgrade Option                                   | X                                           | X                        | √                                   | √                                   | √                                                                  | Top edition already                                                    |
| Upgrade Direction                                | No more upgrade                             | No more upgrade          | Upgradeable to Standard/Pro./Adv.   | Upgradeable to Pro./Adv.            | Upgradeable to Adv.                                                | Top edition already                                                    |
| Trial Edition                                    | Available                                   | Available                | X                                   | X                                   | Available                                                          | X                                                                      |
| Functional Level                                 | ★★                                          | ★★☆                      | ★★★                                 | ★★★★☆                               | ★★★★★                                                              | ★★★★★★                                                                 |